Environmental Site Assessment

Shoalhaven Hospital Redevelopment

8202118201



Prepared for
NSW Health Infrastructure

28 February 2022

Cardno

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Our report is based on information made available by the client. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Cardno is both complete and accurate. Whilst, to the best of our knowledge, the information contained in this report is accurate at the date of issue, changes may occur to the site conditions, the site context or the applicable planning framework. This report should not be used after any such changes without consulting the provider of the report or a suitably qualified person.

Executive Summary

Cardno (NSW/ ACT) Pty Ltd (Cardno) was engaged by Johnstaff on behalf of NSW Health Infrastructure to undertake an Environmental Site Assessment (ESA) of land consisting of Nowra Recreation Park, Shoalhaven District Memorial Hospital and Shoalhaven Community Preschool located along Shoalhaven Street, Nowra NSW and identified as Lot 104 DP1165533, Lot 7034 DP 1031852, and part-lot Lot 373 DP755952.

The ESA is being prepared as part of a broader suite of geotechnical and contamination investigation works by Cardno to support the concept design process, contract number - HI20600 – Shoalhaven Hospital Redevelopment provided to Cardno September 2020.

The Site location and regional context is shown in **Figure 1** and **Figure 2** in **Appendix A**. Current land uses are limited to medical facilities and associated infrastructure, a preschool and public recreation area.

The purpose of this ESA was to provide the client with advice on the contamination status of the Site and the resulting implications for the suitability of the Site for its proposed future land use. The objective of the ESA was to undertake an intrusive sampling investigation in order to assess the previously identified areas of environmental concern (Cardno, 2021), the findings of the investigation were summarised to develop a Conceptual Site Model (CSM) that assesses the potential risks to human health and the environment. This would allow the determination of the Site as suitable or can be made suitable for the proposed expansion and / or rezoning with recommendations made for further assessment and/or remediation (if required) to render the site suitable for the proposed land use.

Intrusive soil sampling was undertaken including general site coverage sample locations and sample locations targeting at the identified AECs. In total, 19 locations across the Site were sampled and assessed. The fill layers observed on site showed no obvious indicators of contamination (odour, staining or discolouration) and anthropogenic materials were only observed in trace quantities at select sample locations. Asbestos containing materials were not observed within fill or on visible ground surfaces.

The following conclusions are drawn with respect to soils assessed within the Site:

- **Human Health**
- The location of BH01 and unassessed areas require further investigation to make a statement on contamination and Site suitability, and the requirement, if any, for remediation. The requirement for further assessment at BH01_0.1 should be considered in the context of the project design and the proposed construction activities at that specific location.
- **Ecological**
- Exceedances of the applicable ecological screening criteria in soil were limited to four samples that contained TRH, benzo(a)pyrene, toxaphene and copper above the criteria. Under the current and proposed land use these exceedances are not considered to present an unacceptable risk as no biota will be reliant on the root zone (upper 2 m) under the future land use, ie the source-receptor-pathway linkage is currently incomplete.
- Whilst ecological receptors were not identified under the current Site use / configuration, during redevelopment soil from BH01, BH02 and BH05 should not be placed near sensitive ecological receptors / remnant vegetation, or the upper 2 m of the soil profile within landscaped areas or surrounding remnant vegetation. Ideally the material would be placed beneath hardstand surfaces with minimal interaction with ecological receptors, surface water or groundwater.

Based upon the findings of the ESA and with reference to the proposed future land use of the Site, the following recommendations are made:

- If soils in the vicinity of BH01_0.1 are to be disturbed, further assessment of should be undertaken to confirm the nature and extent of potential impact. The assessment should include:
    - Vertical and lateral delineation of contaminant impact;
    - Silica-gel clean-up and leachability testing on soil samples to reduce interference and determine the toxicity and contaminant risk;
    - Consideration of the fate of the soils during the proposed redevelopment and refinement of the conceptual site model; and
    - Consideration of any design features.

- Upon completion of characterisation and delineation sampling around BH01, remediation should be considered if an unacceptable risk to human health and/or the environment is confirmed.
- Upon completion of a detailed design the findings of this assessment must be revisited and any outstanding data gaps assessed prior to earthworks.
- If the Site is deemed suitable for the proposed development, the following should be considered:
  - Future ground disturbance works should be undertaken in accordance with a Construction Environmental Management Plan (CEMP) with an Unexpected Finds Protocol that outlines appropriate actions in the event that potentially contaminated materials are identified. If potentially contaminated materials are identified then a more detailed assessment for will be required as detailed in the ASC NEPM (1999).
  - Any waste generated during the redevelopment, including demolition materials and excavated soil, must be assessed for potential offsite reuse / disposal opportunities in accordance with the NSW EPA *Waste Classification* Guidelines (2014) and current resource recovery exemptions / orders.

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1 Introduction

Cardno (NSW/ ACT) Pty Ltd (Cardno) was engaged by Johnstaff on behalf of NSW Health Infrastructure to undertake an Environmental Site Assessment (ESA) of land consisting of Nowra Recreation Park, Shoalhaven District Memorial Hospital and Shoalhaven Community Preschool located along Shoalhaven Street, Nowra NSW and identified as Lot 104 DP1165533, Lot 7034 DP 1031852, and part-lot Lot 373 DP755952, herein referred to as 'the Site'.

The Site location and regional context is shown in **Figure 1** and **Figure 2** in **Appendix A**. Current land uses are limited to medical facilities and associated infrastructure, a preschool and public recreation area.

1.1 Background

Cardno completed a Preliminary Site Investigation (PSI) report at the Site during 2021 (report reference *8202118201 R001 Shoalhaven Hospital PSI V0*, dated the 14th of July 2021) to support the concept design process for the planned Shoalhaven Hospital Redevelopment. Information regarding the concept design process was limited to the redevelopment, expansion and/or rezoning of land to accommodate upgraded and new hospital facilities and associated infrastructure. A preliminary concept design provided by Johnstaff for the Sites proposed redevelopment is included in **Figure 4** of **Appendix A**.

The PSI identified three Areas of Environmental Concern (AEC), as described below, that required further assessment:

- AEC 1: Filling / Mounding / Tipping within the Site
- AEC 2: Soils surrounding maintenance shed
- AEC 3: Structures constructed pre-1990

The approximate footprint of each AEC is shown on **Figure 3** in **Appendix A** and described in further detail in **Table 4-1.**

1.2 Purpose and objectives

The purpose of this ESA is to provide the client with advice on the contamination status of the Site and the resulting implications for the suitability of the Site for its proposed future land use.

The objectives of the ESA are:

- Undertake an intrusive sampling investigation in order to assess the previously identified areas of environmental concern (Cardno, 2021); and
- Summarise the findings of the intrusive sampling investigation to develop a Conceptual Site Model (CSM) that assesses the potential risks to human health and the environment;
- Determine if the Site is suitable or can be made suitable for the proposed expansion and / or rezoning.
- Provide recommendations for further assessment and/or remediation (if required) to render the site suitable for the proposed land use.

1.3 Scope of work

The following scope of work was undertaken in order to achieve the above noted objectives:

- Preparation of a Safe Work Method Statement (SWMS) and Works Management Plan to ensure the safety of Cardno personnel and site occupants during the intrusive investigation;
- Submission of a dial-before-you-dig (DBYD) enquiry and completion of underground service location in the vicinity of the proposed sampling locations;
- In conjunction with the geotechnical assessment, advancement of nineteen (19) sampling points across the Site to provide Site coverage and assess potential contamination at each of the identified AECs (Cardno, 2021) with the exception of AEC03 (refer to **Section 11.4**);
- Sampling points were terminated at refusal, 0.3 m past contact with natural soils or to a maximum depth of 7.0 m bgl, whatever was encountered first, and were advanced as described below:

- Nine (9) test pits were excavated utilising a backhoe (CAT 432E);
- Six (6) boreholes were advanced utilising a tracked drill rig (Hanjin D&B 8-D); and
- Four (4) soil bores were advanced utilising a hand auger and were excavated to the desired depths where possible.

> Soil samples were collected at near-surface, 0.5 m below ground level (bgl) and every half meter thereafter at each sampling point;

> Soils were assessed for visual aesthetic qualities and olfactory indicators of potential contamination including sheen, staining, discolouration, odour and inclusions of anthropogenic materials such as fragments of concrete, metal, bricks, pottery, glass, bonded asbestos-containing-materials, bitumen, ash, green waste, rubber and plastics;

> Each soil sample was screened in the field for volatile organic compound (VOC) content with a calibrated photo-ionisation detector (PID);

> Select primary soil samples and intra-laboratory duplicates were submitted to Eurofins MGT, a National Associated Testing Authority, Australia (NATA) Accredited laboratory for analysis of the contaminants of potential concern (COPC) specified in the PSI (Cardno, 2021). Inter-laboratory duplicates were provided to Envirolab Services for analysis, also a NATA Accredited laboratory, to satisfy quality assurance / quality control requirements;

> Select soil samples from the fill and natural soil profile were analysed for cation exchange capacity, clay content, pH, iron and organic carbon content in order to derive site specific Ecological Investigation Limits as per the method provided in Schedule B1 of the NEPM (NEPC 2013); and

> Preparation of this Environmental Site Assessment report in general accordance with the *Consultants Reporting on Contaminated Land* (NSW EPA, 2020) and the *National Environment Protection (Assessment of Site Contamination) Measure* (1999).

1.4 Applicable guidelines and legislation

The scope of this ESA has been developed in consideration of the following guidelines and legislation:

> CRC Care (2011*) Technical Report No. 10 Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater Part 1: Technical Development Document*, September 2011;

> CRC Care (2011) *Technical Report No. 39 Risk-Based Management and Remediation Advice for Benzo(a)pyrene,* January 2017;

> NEPC (1999) *National Environment Protection (Assessment of Site Contamination) Measure (NEPM)*. National Environment Protection Council (NEPC) 1999;

> NSW Department of Urban Affairs and Planning (1998) *Managing Land Contamination: Planning Guidelines: SEPP 55 Remediation of Land*, 1998;

> NSW EPA (1995) *Contaminated Sites Sampling Design Guidelines*. New South Wales Environment Protection Authority (EP the *Consultants Reporting on Contaminated Land* A), September 1995;

> NSW EPA (2020) *Consultants Reporting on Contaminated Land,* NSW Environment Protection Authority (EPA), May 2020;

> Standards Australia (2005) *Australian Standard AS 4482.1-2005 – Guide to the investigation and sampling of sites with potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds*. Standards Australia, Homebush, NSW;

> Standards Australia (1999) *Australian Standard AS 4482.2-1999 - Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances*. Standards Australia, Homebush, NSW; and

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

2 Site identification

2.1 Site details

Details related to the Site are included in **Table 2-1** below whilst **Figure 1** and **2**, **Appendix A** shows the Site locality and Site plan.

Table 2-1 Site Details

Details	Comments
Site address	Shoalhaven Street, Nowra, NSW, 2541
Lot and Deposited Plan	Lot 104 DP1165533 Part-lot Lot 373 DP755952 Lot 7034 DP1031852
Current land use	▪ Hospital and associated infrastructure (including roads and car parks) ▪ Preschool ▪ Public recreation (Nowra Recreation Park).
Proposed land use	Redevelopment, expansion and/or rezoning of land to accommodate upgraded and new hospital facilities and associated infrastructure.
Local Government Authority (LGA)	Shoalhaven City Council
Current zoning (Shoalhaven LEP, 2014)	SP2 - Infrastructure RE1 - Public Recreation
Site area	25,421 m^2
Site coordinates GDA1994 MGA56	South-east corner of the Site: ▪ 280287.674 ▪ 6138603.2728
Surrounding land use	▪ **North**: Shoalhaven Memorial District Hospital facilities and associated infrastructure, followed by Scenic Drive, public recreation, coastal walking tracks and the Shoalhaven River ▪ **East**: Shoalhaven Street and low-density residential housing ▪ **South**: Nowra Recreation Park, followed by North Street and low-density residential housing ▪ **West**: Shoalhaven Cancer Care Centre, Shoalhaven Hospital parking, followed by Scenic Drive, coastal walking tracks (Bens Walk) and the Shoalhaven River

2.2 Site description

Site information available from public datasets and as observed during Site works are summarised below in **Table 2-2**.

Table 2-2 Site Description

Item	Information
Site slope and drainage features (Nearmap, 2021)	The Site slopes to the east with an upper elevation of 26 m Australian height datum (AHD) along the south-western corner and 18 m AHD along the eastern boundary. Ground surfaces within the southern to central portions of the Site are generally grassed areas with patches of bare earth. A cricket pitch and a hardstand surface (asphalt) at the very southern extent are the only hard surface coverings in this area. The northern portion of the Site consists of hardstands (concrete and asphalt), primarily parking lots and footpaths. Based on surface contours and topography, surface run-off is expected to travel east and ultimately drain into the Shoalhaven River through stormwater infrastructure and tributaries.

Item	Information
Nearby water bodies (NSW DFSI, Spatial Services)	The Site is located between 140 and 370 m from Shoalhaven River to the west and between 200 and 400 m to the north. Nowra Creek, a tributary of the Shoalhaven River, is located approximately 640 m south-west of the Site. An unnamed tributary of the Shoalhaven River is located approximately 780 m east of the Site. The elevation (18 m to 26 m AHD) and aspect (east) of the Site indicate that nearby waterbodies are likely to have minimal influence on the Site.
Site soil landscapes (NSW OEH, 2017)	State-wide land and soil mapping describe the Sites landscape as: ▪ Moderately to gently undulating rises to low hills on Nowra Sandstone (relief >40m and slopes >5%), broad ridges and crests, benched sandstone outcrops adjacent to drainage lines and extensive to moderately cleared tall open-forest. Soils are described as: ▪ Moderately deep (50–100 cm) Brown Podzolic Soils occur on crests and upper slopes, soloths and/ or Yellow Earths occur midslope and Yellow Podzolic Soils occur on lower slopes and drainage lines. ▪ Shallow, having low permeability and low wet bearing strength.
Site surface geology (GS NSW, 2018)	The Site is shown as being underlain by the Permo-Triassic, Nowra Sandstone which is described as fine to very coarse grained quartzose sandstone with minor siltstone plus conglomerate beds within the Shoalhaven Group.
Acid Sulphate Soil Risk (Department of Land and Water Conservation, 1998) (SLEP, 2014)	Acid sulphate soil planning maps indicate that the Site is located within a Class 5 area for acid sulphate soils (ASS), these areas are defined as being within 500 m of an adjacent Class 1, 2, 3 or 4 land that is below 5 m AHD and are not reflective of risk of ASS on the Class 5 land. Development consent is required for Class 5 areas if the water table is likely to be lowered below 1 m AHD on the adjacent Class 1, 2, 3 or 4 land. Class 1, 3 and 4 areas are mapped north, north-east and west of the site along the Shoalhaven River. A review of acid sulphate soil risk mapping identifies no risk of ASS at the Site however areas north, north-east and west of the Site including the Shoalhaven River are mapped as having a low to high probability of ASS occurrence where estuarine and alluvial sedimentary units are mapped. This corresponds with the Class 1, 3 and 4 mapped areas within the planning map.
Groundwater	A review of a JK Geotechnics report (2017), which is summarised in **Section** Error! Reference s ource not found., describes the installation of two groundwater monitoring wells along the western boundary of the Site. BH104 was installed to 7.0 m with the borehole noted as dry at completion, Standing Water Level (SWL) was noted as 6.0 m bgl after 24 hours and 5.5 m bgl after 40 hours. BH105 was installed to 5.5 m and was also dry at completion with the SWL noted as 4.0 m bgl after 24 hours, the well installation details and groundwater records can be viewed in **Appendix F**. A review of publicly registered bores within the WaterNSW database identified twenty bores within 500 m of the Site. The bores are a mix of domestic and monitoring bores, with all located downgradient (east/ northeast) of the Site. The closest bore, GW101695 is located approximately 164 m north-east of the Site, and is registered as a domestic water supply bore. The bore was installed to 48 m in sandstone however no standing water level or water bearing zones are recorded. The second closest well GW112969 is located approximately 293m east of the Site, and is registered as a monitoring bore. The bore was installed to 7.70 m in clay and sandstone with no standing water level or water bearing zones being recorded.
Salinity	The Salinity Hazard Map generated using eSPADE, published by the NSW Office of Environment and Heritage (OEH), indicates that a salinity hazard has not been identified at the Site and as such the occurrence of saline soil conditions at the Site is considered to be negligible or low. During the walkover there was no indication of saline soils or surface salting at the Site.

3 Site observations

Observations from a walkover conducted during the intrusive investigation are summarised in **Table 3-1** and photographs can be viewed in **Appendix B**.

Table 3-1 Observations summary table

Item	Observations
Weather conditions	Local weather during fieldwork ranged from sunny to overcast, with moderate to strong winds and temperatures ranging from 13 to 16°C.
Site surface coverings	Ground surfaces within the southern to central portions of the Site are generally grassed areas with patches of bare earth. A cricket pitch and a hardstand surface (asphalt) at the very southern extent are the only hard surface coverings in this area. The northern portion of the Site consists of hardstands (concrete and asphalt), primarily parking lots and footpaths.
Site cut and fill	Potential filling was observed in the following areas: ▪ Surrounding the helicopter pad; ▪ Along the western boundary of the Site; and ▪ Beneath the turning circle at the hospital entrance at the north of the Site.
Buildings	Shoalhaven-Preschool is located in a single storey structure in the north-eastern portion of the Site. Within hospital grounds, a demountable administration building housing the maintenance office is located in the north-western extent and a maintenance shed attached to a fenced area housing oxygen tanks is located 35 m east of the administration building. The northern and western boundaries of the Site are lined by existing hospital structures of predominately brick veneer or concrete construction whilst in the southern area of Nowra Park, outside the investigation boundary, are two small toilet buildings of brick construction.
Potential hazardous building materials	No potentially hazardous building materials were observed during the site investigation works, however, buildings within the Site have the potential to contain hazardous building materials. At the time of writing this report a HAZMAT assessment has not been completed.
Manufacturing, industrial or chemical processes and infrastructure	No manufacturing, industrial or chemical processes and infrastructure were noted on the Site. As the northern portion of the Site is used as a hospital there is the potential for waste to be produced in the form of improperly disposed low-level radioactive waste from radiology consumables and discarded machines present in fill material. Medical waste such as sharps, dressings etc may also be present in fill material. In addition, historical use of incinerators for waste was common on hospital sites resulting in waste ash used as a filling medium. No evidence of these activities was identified within the study area during the Site inspection or during the intrusive investigation.
Fuel storage tanks (USTs/ASTs)	Above-ground cryogenic oxygen storage was observed at the northern extent of the Site, no other potential UST or AST features or indications were observed.
Dangerous goods	No dangerous goods storage was noted during the Site walkover. A SafeWork NSW Schedule 11 Storage of Hazardous Chemicals search was completed as part of the Preliminary Site Investigation (Cardno, 2021). A search of the records held by SafeWork NSW identified one above ground storage tank containing liquid oxygen with a capacity of 3,886 m^3 and a cylinder storage area housing twenty (20) 50 L oxygen cylinders. The storage of these goods on the Site is considered to present a low contamination risk.
Solid waste deposition	General waste bins were noted at the northern extent of the Site. Waste generated in the operation of Shoalhaven Hospital is managed under municipal solid waste and medical waste arrangements with wastes removed from the premises for disposal.
Liquid waste disposal features	No liquid waste disposal features were noted at the time of the walkover.
Evidence of previous site contamination investigations	No reinstated boreholes, wells or sample locations were observed during the Site walkover.
Evidence of land contamination	None observed.

Item	Observations
(staining or odours)	
Evidence of groundwater contamination	None observed.
Groundwater use	No groundwater use was noted on the Site or neighbouring properties with the exception of existing wells installed by JK Geotechnics for environmental monitoring.
Vegetation	Three to four large trees were noted at the southern extent of the Site, with a mix of several large and smaller trees also observed in the north-eastern portion of the Site surrounding the Shoalhaven Preschool.
Site fencing	At the time of the walkover chain link fencing and galvanized steel fencing was observed along the boundaries between each of the lots. The preschool was the only portion of the Site that was enclosed to prevent public access.

3.2 Inaccessible areas

Due to access limitations and Site operations the following areas were not visually assessed during the walkover, these should be considered in relation to the further data gaps detailed in **Section 11.4**. The inaccessible areas are detailed in **Table 3-2** below and can be viewed in **Figure 3** in **Appendix A**.

Table 3-2 Inaccessible areas during site walkover

Area	Justification / Notes
Maintenance shed	At the time of the inspection the maintenance shed was locked and unable to be accessed.
Shoalhaven Preschool	This area was not accessed at the time of the inspection as permission had yet to be obtained from the occupants. Based on external observations and the current occupants the risk of contamination is likely to be low but has not been confirmed.

4 Previous site reports

Cardno is aware of the following environmental assessment historically undertaken within the Site footprint:

- *Report to Health Infrastructure on Geotechnical Investigation for Proposed Carparks at Shoalhaven Hospital Scenic Drive, Nowra, NSW* Ref: 30760Z (JK Geotechnics, 2017)
- *Shoalhaven Hospital Redevelopment, Preliminary Site Investigation*, Cardno, July 2021 (Cardno, 2021)

4.1 Geotechnical Investigation for Proposed Carparks at Shoalhaven Hospital Scenic Drive, Nowra, NSW (JK Geotechnics, 2017)

The report was prepared by JK Geotechnics on behalf of Health Infrastructure to obtain geotechnical information on subsurface conditions as a basis for comments and recommendations on earthworks, excavation conditions, shoring, retaining walls, footings, on-grade floor slabs and pavements.

Three carpark options were presented:

- ***Option 1:*** *This option comprises a three and four level parking building with central ramps. A stepped building platform will be required with excavations to maximum depths of 2m and 4m to achieve the Level 1 finished floor at Reduced Level (RL) 22.5m and Level 2 finished floor at RL26.2m, respectively. A helipad will be included on the roof level.*
- ***Option 2:*** *This option includes a three and four split level building. A stepped excavation to maximum depths of approximately 2m will be required to achieve the Level 1 and Level 2 finished floors at RL26.6m and RL28.1m, respectively. A helipad is being considered for the roof level, however, its proximity to the adjacent Super Clinic will probably result in the helipad being omitted.*
- ***On-grade Option:*** *Several areas scattered across the site and demarcated CP1, CP4, CP5 and North Street Corner, are being considered for on-grade parking.*

The report notes that this investigation was carried out in conjunction with JK's environmental division Environmental Investigation Services (EIS) to conduct a contamination investigation of the site. The EIS report (E30760K) has not been received and has been noted as a data gap.

Three boreholes advanced during JK's investigation are located along the western boundary of the Site, BH102, BH103 and BH105. With a fourth borehole (BH104) located approximately 20 m west of the demountable administration building and 15m west of the Site boundary.

The borehole logs indicate:

- Fill was observed at boreholes BH102, BH103, BH104 and BH105 with a maximum thickness of 2.7 m at BH105
- Anthropogenic material was limited to trace concrete fragments in borehole BH103 within the upper fill layer from 0.2 m to 1.6 m.
- BH102 and BH104 were observed having 1.6 m and 0.6 m of fill respectively with no mention of anthropogenic materials.
- Groundwater monitoring wells were installed at sample locations BH104 and BH105 with the well installation details, final borehole depths, soil profiles and location of boreholes located in **Appendix F**.

Cardno is unable to make a comment on soil or groundwater contamination without reviewing the EIS report E30760K.

4.2 *Preliminary site investigation* (Cardno, 2021)

Cardno undertook the investigation to provide preliminary advice on the contamination status of the Site and consequent implications for the concept design process for the Site redevelopment. Cardno understand that this includes the expansion of the existing hospital and rezoning of land to accommodate upgraded and new hospital facilities and associated infrastructure.

The assessment included a history review which indicated the Site has historically been used for public recreation / parkland in the southern portion and hospital facilities as well as a preschool centre in the northern portion. The PSI report identified the following AEC summarised below in **Table 4-1**.

Table 4-1 AEC identified within Cardno (2021) PSI

AEC Identification	Description	Contaminants of Interest
AEC 1: Filling / Mounding / Tipping within the Site	Fill areas along the western ridge line, surrounding the helicopter pad and the turning circle at the northern extent of the Site were observed but the quality, quantity or origin of fill was difficult to determine due to vegetation, grass cover and hardstands without an intrusive assessment. The amount of filling is considered to be minor based upon site observations such as the inferred shallow depth to rock and site history, however while there was an absence of anthropogenic material in surface material, there is potential for unidentified contamination and these materials should be assessed further	TRH; BTEX, PAH; Metals; Phenol; OCP; OPP; PCB; Asbestos
AEC 2: Soils surrounding maintenance shed	The maintenance shed was inaccessible at the time of the walkover, however, it may contain chemicals and fuels typical of general maintenance and landscaping. Housekeeping and ground surfaces within the shed were unable to be observed and it is unknown if potential uncontrolled spills and releases have occurred.	TRH; PAH; BTEX; metals; OCP/ OPP, other pesticides
AEC 3: Structures constructed pre-1990	The only structure established pre-1990 within the Site is the Shoalhaven Community Preschool main building. This building and the soils surrounding it may contain potentially hazardous building materials.	Asbestos; lead and zinc

PAH: polycyclic aromatic hydrocarbons
TRH: total recoverable hydrocarbons
BTEX: benzene, toluene, ethylbenzene, xylene
OCP: organochlorine pesticides
OPP: organophosphorus pesticides
PCB: polychlorinated biphenyls

Based upon the findings of the PSI Cardno made the following recommendations:

- Conduct a Preliminary Environmental Site Assessment (PESA) to confirm the presence of contaminant sources and contaminated materials within the identified sources in **Table 4-1.**The ESA would seek to determine if a risk to human and ecological receptors exists, whether there is the potential for off-site migration of any identified contamination and/or if management and consideration is required during construction.
- Locate existing wells BH104 and BH105 to assess groundwater conditions.
- Undertake a hazardous building materials assessment of structures within the Site to identify materials which may be disturbed as part of the proposed site redevelopment.
- In the event the PESA identifies contamination above the permissible investigation levels, the Site may require further investigation in the form of a Data Gap Investigation (DGI) or a Detailed Site Investigation (DSI), which would further clarify the risk to human and ecological receptors and/or recommend management and consideration required during construction.
- If any earthworks or disturbance occurs prior to preparation of the PESA, a suitably qualified environmental consultant must be engaged to undertake an assessment for contamination and provide guidance on appropriate material management, if required.

The PSI (Cardno, 2021) references undertaking a Preliminary Environmental Site Investigation, this document has instead been named an Environmental Site Assessment (ESA) due to the level of investigation not being considered preliminary in nature.

5 Preliminary conceptual site model

A conceptual site model (CSM) provides an assessment of the fate and transport of contaminants of potential concern (COPC) within the context of site-specific subsurface conditions with regard to their potential risk to human health and the environment. Risk to human health and the environment is identified through complete Source – Pathway – Receptor (SPR) linkages. In order to identify SPR linkages the CSM considers site specific factors, including:

- Source(s) of contamination;
- Identification of contaminants of concern associated with past (and present) source(s);
- Site specific information including soil type(s), inferred depth to groundwater, inferred permeability, inferred groundwater flow direction and surface water bodies and interactions;
- Location of any identified sources relative to the proposed site development; and
- Actual or potential receptors considering both current and future land use both for the Site, adjacent properties and any sensitive ecological receptors.

Based on the information available at the time of the PSI (Cardno, 2021) the preliminary CSM in **Table 5-1** was developed.

Table 5-1 Preliminary Conceptual Site Model

Source	Contaminants	Impacted media	Pathway	Receptor	Completeness
Filling of unknown origin and quantity along western ridgeline and surrounding helicopter pad	Asbestos; metals; PAH; TRH; BTEX; Phenols; OCP; OPP; PCB	Soils including fill through direct application Surface water through runoff	Direct contact including ingestion of, impacted media Inhalation of asbestos fibres	Ecological receptors: – Site vegetation – Invertebrates and small mammals living in site soils or using site vegetation as a food source Human: – Current Site workers (hospital, preschool) – Future Site workers (hospital) – Workers during construction – Individuals undertaking installation and maintenance of subsurface utilities – Current recreational land users	Potentially complete in the event of any direct interaction with impacted media (i.e. excavations, use as growth medium)
Maintenance shed	TRH; PAH; BTEX; metals; OCP/ OPP, other pesticides	Soils surrounding maintenance shed (particularly downgradient) Surface water through runoff	Direct contact including ingestion of, impacted media		
Structures constructed pre-1990	Asbestos; lead and zinc	Soils surrounding potentially hazardous building materials	Direct contact including ingestion of, impacted media Inhalation of asbestos fibres		

PAH: polycyclic aromatic hydrocarbons
TRH: total recoverable hydrocarbons
BTEX: benzene, toluene, ethylbenzene, xylene
OCP: organochlorine pesticides
OPP: organophosphorus pesticides
PCB: polychlorinated biphenyls

6 Data quality objectives

6.1 Data Quality Objectives

The *National Environment Protection (Assessment of Site Contamination) Measure* (1999) requires that Data Quality Objectives (DQOs) are adopted for all assessment and remediation programs. The DQO process, as adopted by the NSW EPA, is described within US EPA (2000) *Guidance for the Data Quality Objectives Process and Data Quality Objectives Process for Hazardous Waste Site Investigations*.

The DQO process involves the following seven steps and has been set out in **Table 6-1** below.

Table 6-1 Summary of Data Quality Objectives

DQO Step	Discussion
Step 1: State the Problem	The PSI (Cardno, 2021) identified potential historical contamination sources on the Site which may impact site suitability and / or require management as part of the proposed development. The development proponent, Health Infrastructure, would like to understand any contamination constraints relating to the proposed development. Therefore, this Environmental Site Assessment is required to determine: ▪ If potential contamination of soil and/or groundwater is present on the Site that may pose risk to the current and potential future users of the Site; ▪ If further intrusive investigation is required; and ▪ If there is sufficient information to ascertain if remediation is required to make the site suitable.
Step 2: Identify the decision / goal of the study	Our default assumption (null hypothesis) for the purpose of the study is that: ▪ The Site is impacted by the contamination of land due to historical site activities. We aim to show, that ▪ The site is not impacted by contamination at a level that represents a risk to current and / or future site onsite and offsite receptors. If this can be shown then the subject to the limitations of the investigation methodology, the Site will be determined unimpacted by contamination associated with historical activities that present risk to ongoing, unchanged land-use or a constraint to the proposed future development. If this cannot be shown then the following decisions will be made: ▪ Is further investigation required; and / or ▪ Is remediation of site soils and / or groundwater necessary to make the Site suitable for the intended land use?
Step 3: Identify the information inputs	The primary inputs to the decisions described above are: ▪ Guidelines made and approved by the NSW EPA as listed in **Section 1.4** ▪ Results of previous assessments conducted on the Site. ▪ Information gathered during the assessment of fill and natural soils. ▪ Laboratory analysis of soil and groundwater samples for relevant COPCs, based on historical land use; ▪ Assessment of the suitability of the analytical data obtained, against the Data Quality Indicators (DQIs) outlined below; and ▪ Aesthetic observations of soils, including odours, staining and waste inclusions.
Step 4: Define the boundaries of the study	The boundaries of the study are: **Lateral** - The study site located along Shoalhaven Road to the east and North Street to the south, Nowra, NSW, shown in **Figure 2** of **Appendix** Error! Reference source not found.**.** **Vertical** - The extent of the investigation extends to the depth of bedrock, natural soils or refusal, with a maximum depth of 7.0 m bgl. **Temporal** - Site inspections and sampling occurred on June 17th, 21st and 22nd 2021. The data will remain valid provided that land use, landform, and conditions at the Site and surrounds remain unchanged.
Step 5: Develop the analytical approach	The investigation analytical program is detailed in **Section 8**.

DQO Step	Discussion
Step 6: Specify performance or acceptance criteria	Two primary decision error-types may occur due to uncertainties or limitations in the project dataset: ▪ A sample / area may be deemed to pass the nominated criteria, when in fact it does not. This may occur if contamination is 'missed' due to limitations in the sampling plan, or if the project analytical data set is unreliable. ▪ A sample / area may be deemed to fail the nominated criteria, when in fact it does not. This may occur if the project analytical dataset is unreliable due to inappropriate sampling, sample handling or analytical procedures. The following aspects were considered when establishing the acceptable limits on decision errors: ▪ The null hypothesis for the project is: the sample / investigation area is deemed to be contaminated. Sufficient weight of evidence, via the uses of statistical analysis (e.g. 95% upper confidence limit of the mean (UCL)) and / or gathering multiple lines of evidence (e.g. desktop review and laboratory analytical data), would be required to reject / disapprove the null hypothesis. A quality assurance / quality control (QA/QC) assessment evaluating the reliability and useability of data, which are expressed as five data quality indicators (DQI) summarised in **Section 6.2**.
Step 7: Develop the plan for obtaining data	The recommended investigation strategy is designed to meet the project objectives in **Section 1.2** and the DQOs outlined above. The investigation scope was optimised based on the ground conditions encountered during the field-sampling program. To achieve the DQOs and DQIs, a detailed assessment plan is detailed in **Section 8**.

6.2 Data Quality Indicators

The following Data Quality Indicators (DQIs), referenced in Step 6 in **Table 6-1** have been adopted in accordance with NSW EPA *Guidelines for the NSW Site Auditor Scheme (3rd Edition)* (2017). The DQIs outlined in **Table 6-2** assist with decisions regarding the contamination status of the Site, including the quality of the laboratory data obtained.

Table 6-2 Summary of Data Quality Indicators

Data Quality Indicator	Frequency	Data Acceptance Criteria
Completeness		
Field documentation correct	All samples	The work was documented in accordance with Cardno SOPs
Soil bore logs complete and correct	All samples	The work was documented in accordance with Cardno SOPs including review by senior staff prior to issue
Suitably qualified and experience sampler	All samples	Person deemed competent by Cardno collecting and logging samples
Appropriate lab methods and limits of reporting (LORs)	All samples	Samples were analysed using NATA approved methods
Chain of custodies (COCs) completed appropriately	All samples	The work was documented in accordance with Cardno SOPs
Sample holding times complied with	All samples	The samples were submitted for extraction within holding times specified by NATA laboratory
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 works undertaken in accordance with Cardno SOP's

Data Quality Indicator	Frequency	Data Acceptance Criteria
Experienced sampler	All samples	Person deemed competent by Cardno collecting and logging samples
Climatic conditions (temp, rain etc) recorded and influence on samples quantified (if required)	All samples	Climatic conditions documented in field sheets
Consistent analytical methods, laboratories and units	All samples	Sample analysis to be in accordance with NATA approved methods
Representativeness		
Sampling appropriate for media and analytes (appropriate collection, handling and storage)	All samples	Sample analysis to be in accordance with NATA approved methods
Samples homogenous	All samples	All works undertaken in accordance with Cardno SOP's. Sample not collected across strata
Detection of laboratory artefacts, e.g. contamination blanks	-	Laboratory artefacts assessed and impact on results determined
Samples extracted and analysed within holding times	All samples	-
Precision		
Blind duplicates (intra-laboratory duplicates)	1 per 20 samples	<30% RPD (Inorganics) <50% RPD (Organics) No Limit RPD Result <10 × LOR
Laboratory duplicates	1 per 20 samples	<20% RPD Result > 20 × LOR <50% RPD Result 10-20 × LOR No Limit RPD Result <10 × LOR
Accuracy (Bias)		
Surrogate spikes	All organic samples	50-150%
Matrix spikes	1 per 20 samples	70-130%
Laboratory control samples	1 per 20 samples	70-130%
Method blanks	1 per 20 samples	<LOR

6.3 Quality assurance / quality control

To meet the DQOs and DQIs outlined in **Table 6-1** and **Table 6-2**, the following additional Quality Assurance / Quality Control (QA/QC) procedures were undertaken**.**

Table 6-3 Summary of QA/QC processes

Requirement	Comments
Equipment calibration	Provision of calibration certificates. The scientific instruments that were used for the Site investigation, such as a PID, were calibrated on the day in the form of a 'bump test' where the PID was connected to a canister of isobutylene.
Equipment decontamination	Decontamination of sampling equipment where needed. Sampling equipment that is not disposable, such as hand tools, underwent the following decontamination process: ▪ Wash equipment in soapy water that contains a mixture of water and Decon 90, with the objective to remove sediments and particulate from the equipment. ▪ Rinse decontaminated equipment with potable or deionised water.

Requirement	Comments
Soil logging	Logging soils in general accordance with the Unified Soil Classification System including sample information recording on the geological log sheets.
Sample media identification	Samples marked with a unique identifier including project number, sample location, depth and date.
QA/QC Field duplicates/triplicates/field blanks and trip spikes	Duplicate samples collected at a rate of 1 every 20 primary samples completed at the primary intra-laboratory; and triplicate samples at a rate of 1 every 20 samples to be analysed at the secondary inter-laboratory.
Sample preservation	Collected soil samples placed in a chilled icebox with ice for storage and transport to the laboratory.
Chain of Custody (COC documentation	COC forms detailing sample identification, collection date, sampler and laboratory analysis required. The COC form was signed off and returned to Cardno by the laboratory staff upon receipt of all the samples.
NATA accredited methods	NATA accredited laboratories analysed the samples in accordance with NATA accredited methods where applicable.

7 Assessment criteria

Soil assessment criteria have been adopted from *National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013* and their application are summarised below.

7.1 Human health criteria

NEPM 1999, Health Investigation Levels – Residential B and Recreation / Open Space C

Health investigation levels (HIL) B and C have been adopted to assess risk to site users under the proposed land use, noting the proposed land use will be as hospital facilities as well as associated infrastructure and areas of public recreation. HIL B and C are considerate and protective of the proposed land use as described below:

- HIL B - considers current and future site occupants within outdoor areas and inside structures who are likely to have minimal opportunities for direct contact with site soils. HIL D has not been considered in this case due to the potential for extended site occupation (patients) and the poor health of site users.
- HIL C - considers areas of public open space such as parks and garden areas of the Site and consider increased direct soil contact which may apply for specific scenarios on the Site.

CRC Care 2011, Health Screening Levels – Direct Contact, Residential B and Recreational C

Health screening levels (HSL) for direct contact for Residential B and Recreational C have been adopted to assess the risk for site users due to hydrocarbon impacted soils. These criteria allow for potential redevelopment or reuse of soil under a mixture of high density residential and public open space land suitable for a hospital land-use

- HSL B - considers current and future site occupants with minimal opportunities for direct contact with site soils.
- HSL C - considers areas of public open space and consider increased direct soil contact which may apply for specific scenarios on the Site.
- Based on the material descriptions collected during fieldwork and to account for potential mixing during construction and earthworks, samples were screened against criteria for sand-based soils.

Both of the above adopted criteria are less than those for HSL D (Commercial / Industrial land-use) and Intrusive Maintenance Worker (IMW) scenarios and would be protective of site users in these cases. Where there is an exceedance of HSL B and C then the HSL D and / or IMW may also be considered if applicable.

NEPM 1999, Health Screening Levels – Soil Vapour, Low – Residential A & B and Recreational C

HSL A & B has been adopted to assess the potential for a vapour intrusion risk to be present from site soils. In a public open space (HSL C) scenario, soil concentrations of volatile compounds are considered Non-Limiting, that is concentrations required to generate a vapour risk are above the solubility limit in soil so no criteria are provided.

- HSL A & B criteria consider current and future site occupants under the proposed development, including patients within buildings for extended periods.
- Based on the material descriptions collected during filed work and the potential for soils to be mixed during construction and earthworks, samples will be screened against criteria for sand-based soils.

7.2 Other soil criteria

NEPM 1999, Ecological Investigation Levels and Ecological Screening Levels – Urban Residential and Public Open Space

Ecological Investigation Levels (EIL) and Ecological Screening Levels (ESL) have been adopted to assess the risk to future ecological receptors (i.e. flora and fauna in landscaped areas) under an urban residential and public open space land use scenario.

- A detailed Site history review has been completed which indicates that since 1949 the Site has been predominantly utilised for public recreation as well as a sporting field and is heavily disturbed from its natural state. The proposed redevelopment will result in minimal new vegetation limited to tree plantings,

planter boxes and landscaping. The redevelopment is unlikely to result in restoration of the Site to a high ecological value scenario.

- Given that the Site and surrounds comprise a mixture of general residential, public recreational areas, mixed use and hospital buildings as well as associated infrastructure, application of the urban residential and public open space EILs and ESLs are considered appropriate to capture risk to potential ecological receptors.
- To calculate EIL criteria samples TP04_0.5, TP06_0.1 and TP07_0.5 were analysed for soil parameters, clay content, cation exchange capacity, iron, total organic carbon (TOC) and pH. **Photograph 8** of **Appendix B** shows the natural soils that were analysed with the parameters summarised below in **Table 7-1**.
- The Site was underlain by three distinct strata layers, as such specific EILs have been calculated for each layer utilising the EIL calculation spreadsheet maintained within the NEPM toolbox (NEPC, 2010).
- Generic EILs were utilised for arsenic, DDT and naphthalene.

Table 7-1 EIL Soil Parameters

Sample and Strata Location	% Clay	Cation Exchange Capacity	% Iron	Total Organic Carbon (%)	Soil pH	Copper	Nickel	Chromium	Zinc
TP06_0.1 Topsoil / fill	6	1.2	0.91	2.2	4.6	<5	5.1	14	13
TP04-0.5 Possible fill / residual	12	4.8	2.6	0.6	5.5	<5	8.5	46	<5
TP07_0.5 Residual	19	4.5	2.6	0.5	5.1	<5	<5	28	<5

NEPM 1999, TRH Management Limits – Residential, parkland and public open space

The management limits have been adopted as a final screening level to identify TRH concentrations that may present a risk to the physical and built environment and tend to be higher concentrations than human health and ecological risk criteria.

Management limits are protective of the following hazards or risks:

- formation of observable light non-aqueous phase liquids (LNAPL);
- fire and explosive hazards; and
- effects on buried infrastructure e.g. penetration of, or damage to, in-ground services by hydrocarbons.

The Management Limits for residential, parkland and public open space, and coarse soils are considered appropriate based on the current and proposed land uses.

NEPM 1999, Aesthetic criteria

Aesthetic criteria for soils are outlined in NEPC 2013. Should there be no exceedances of other criteria that make site soils unsuitable for use onsite, soil will also be assessed for aesthetic suitability. Acceptable aesthetic criteria will vary depend on final material location within the planned site setting but generally material will be considered acceptable if at surface:

- The risk for a person to be injured by metal, glass or other sharp objects;
- That chemically discoloured soils or large quantities of various types of inert refuse, particularly if unsightly, may cause ongoing concerns to site users;
- The depth of the materials, including chemical residues, in relation to the final surface of the Site; and
- The need for and practicality of any long-term management of foreign material.

8 Site investigation program

Fieldwork was undertaken by experienced environmental professionals from Cardno with all works completed in accordance with the agreed scope of work. The fieldwork activity summary and methodologies are presented in **Table 8-1,** photographs presented in **Appendix B** and a sample location plan available in **Appendix A, Figure 3**.

Table 8-1 Investigation Activity Summary

Activity	Details
Dates of field activity	Fieldwork activities were undertaken on the dates specified below: ▪ Utility clearance by an underground service locator: 17 June 2021 ▪ Test pitting and soil sampling: 17 June 2021 ▪ Drilling and soil sampling: 21-22 June 2021
Test pitting	Test pitting was completed over one day utilising a third party backhoe and operator with the works supervised by an experienced environmental professional from Cardno. A total of nine (9) test pits were excavated, five (5) within the filling (AEC 1) along the western boundary of the Site, and four (4) across the remainder of the Site to provide coverage. Test pits were excavated to a maximum depth of 2.4 m bgl.
Drilling	Six (6) boreholes were advanced using a track mounted drill rig to a maximum depth of 7.00 m bgl utilising solid flight auger techniques equipped with tungsten carbide (TC) drill bit. Boreholes BH01, BH02, BH03 and BH04 terminated at target depth within underlying bedrock, whereas BH05 and BH06 were terminated upon refusal on bedrock. Borehole locations and depths were based on the requirements of the concurrent geotechnical assessment of the Site and did not target any AECs (with the exception of BH05 which targeted AEC 1) however samples were collected to provide site coverage.
Soil Boring (Hand Auger)	Soil bores were excavated within areas that were inaccessible for the excavator or in areas where minimal disturbance of the ground was required by project stakeholders including Shoalhaven Hospital. Four (4) soil bores were advanced using a hand auger, three (3) in the fill areas surrounding the helicopter pad (AEC 1) as well as one (1) within soils downgradient of the maintenance shed (AEC 2). The target depth of soil bores was to encounter a natural soil profile, with the maximum depth of 0.9 m bgl reached, however, refusal was encountered before a natural geologic profile was encountered at each soil bore.
Soil Logging	Soils encountered during the investigation were described and logged in general accordance with *Australian Standard Geotechnical Site Investigations (AS1726- 2017)*. The geological logs are presented in **Appendix C**. In addition to logging test pits, boreholes and soil bores, excavated soils were assessed for visual and olfactory indicators of contamination such as sheen, staining, odour, discoloration and the presence of asbestos containing materials.
Soil Sampling	Undisturbed soil sampling was achieved by sampling from the centre of the excavator bucket during test pitting and from standard penetration test (SPT) equipment during drilling. A new pair of disposable nitrile gloves were worn for each sample collection. Samples were placed into laboratory-supplied containers including 250 ml glass jars with Teflon lined lids for contaminant testing; and resealable plastic zip-lock bags for asbestos testing.
PID Headspace Screening	Each soil sample was screened in the field for the presence of volatile organic compounds (VOC) using a calibrated photoionisation detector (PID). The methodology for PID headspace testing was in accordance with Section 7.4.3 of Schedule B2 of the National Environment Protection Measure (NEPC, 1999), which included partially filling an airtight zip-lock bag with a fresh soil sample and then analysing the headspace vapour using a portable PhoCheck Tiger VOC Gas Detector PID. The PID was bump tested daily in the field with 100 ppm isobutylene prior to commencement of soil sampling, which were recorded on daily field logs.
Decontamination Procedure	Reusable sampling equipment was avoided wherever possible through the use of disposable nitrile gloves and direct sampling of material. Where reusable equipment was necessary, such as hand tools and drilling equipment (hand auger, spade, crowbar and

Activity	Details
	SPT split spoons) these were decontaminated by washing with phosphate free detergent (Decon 90) followed by a rinse with potable water.
Soil Sample Collection	Samples collected and analysed during the investigation are summarised in the tables in **Appendix D**. All primary and duplicate samples were submitted to Eurofins Environmental Testing, with triplicate samples provided to Envirolab Services. Both laboratories are NATA accredited.
Soil Sample Analysis Selection	Sample analysis selection was based on the location of potential contaminant sources, and contaminant indicators such as odours, staining or anthropogenic materials mixed through the soil / fill profile.
Sample Preservation and Transport	Following collection, soil samples were placed directly in laboratory-supplied jars, container and zip-lock bags, and stored on ice in an esky while on Site and in transit to the laboratory under standard Chain of Custody documentation.
Test Pit, Borehole and Soil Bore Reinstatement	Test pits, boreholes and soil bores were backfilled with cuttings to a level flush with the surrounding ground surface.

9 Results

9.1 Field observations

The following observations were made during the ESA:

- Indicators of contamination, such as odour, sheen and staining, were not observed on visible ground surfaces or in any excavated materials.
- Asbestos containing materials were not observed on visible ground surfaces or in any excavated material. Additionally, inclusions of construction and demolition waste were limited to trace quantities of brick and ceramic (see **Photographs 6**, **8** and **12** in **Appendix B**).
- As stated above observations of anthropogenic waste were visible in trace quantities of brick and ceramic., Glass, plastic and lawn mat were also observed on ground surfaces and in shallow fill profiles as outlined below:
  - TP02 had a fill profile of 0.5 m, with trace plastic and frequent river stones observed in the upper 0.2 m.
  - TP03 had a fill profile of 0.9 m, with trace ceramics observed in the upper 0.3 m.
  - TP05 had a fill profile of 1.0 m, with trace ceramics and charcoal observed in the upper 0.3 m.
  - TP08 had a fill profile of 1.0 m, with trace glass and brick observed.
  - TP09 had a fill profile of 0.8 m, with trace lawn mat, plastic and aluminium foil observed.
- Minor groundwater seepage was encountered in BH02 during the intrusive assessment at an approximate depth of 2.2 m bgl. The depth that groundwater was encountered was at the soil-rock interface indicating that the Site may have a perched groundwater table at the interface.

Geological logs with soil descriptions can be viewed in **Appendix C** and photographs of Site soils are available in **Appendix B**.

9.2 Analytical results

Tabulated analytical summary tables are provided in **Appendix D** and the laboratory reports in their entirety are provided in **Appendix E**.

9.2.1 Human Health

All results were recorded below laboratory LOR, or the applicable human health criteria, with the exception of sample BH01_0.1 which had exceedances the following contaminants:

- Results have been reported with the precursor "<" due to a raised laboratory limit of reporting (LOR). The raised LOR was due to matrix interference in the sample and the laboratory has not been able to provide an accurate result, however, they have provided an upper LOR and have indicated that results are close to or less than the raised LOR, as specified below.
- F2: >C_{10}-C_{16} less Naphthalene concentration of <500 mg/kg, above the applicable HSL A&B criteria of 110 mg/kg.
- Benzo(a)pyrene TEQ (half LOR) concentration of 6.1 mg/kg, above the applicable HIL B criteria of 4 mg/kg.
- Toxaphene concentration of <100 mg/kg, above the applicable HIL B and C criteria of 30 mg/kg.

These exceedances are discussed further in **Section 11**.

9.2.2 Ecological

Analytical results that were screened against the applicable ecological health criteria showed that exceedances of the criteria were limited to:

- TRH
  - BH01_0.1
    - C10-C16 concentration of <500 mg/kg, above the applicable criteria of 120 mg/kg.
    - C16-C34 concentration of <1000 mg/kg, above the applicable criteria of 300 mg/kg.

    - C10-C14 concentration of <200 mg/kg, above the applicable criteria of 120 mg/kg.
- BH02_0.1
    - C16-C34 concentration of 880 mg/kg, above the applicable criteria of 300 mg/kg.
- BH05-0.1
    - C16-C34 concentration of 310 mg/kg, above the applicable criteria of 300 mg/kg.

> Metals - Copper

- BH01_0.1 returned a copper concentration of 160 mg/kg, above the applicable criteria of 110 mg/kg.
- BH05_0.1 returned a copper concentration of 150 mg/kg, above the applicable criteria of 110 mg/kg.
- BH06_0.1 returned a copper concentration of 200 mg/kg, above the applicable criteria of 110 mg/kg.

> PAH – Benzo(a)pyrene

- BH01_0.1 returned a concentration of <5 mg/kg, above the applicable criteria of 0.7 mg/kg.

These exceedances are discussed further in **Section 11**.

10 Quality assurance and quality control

The QA/QC samples collected during the sampling program are summarised below in **Table 10-1** including inter- and intra-laboratory duplicate pairings. Relative Percentile Differences between primary and duplicate samples are presented in the data summary tables in **Appendix D**.

Table 10-1 Summary of Field Inter/Intra Laboratory Duplicates

Sample Type	Matrix	Primary Sample	Intra-lab Replicate	Inter-lab Replicate
Field Replicates	Soil	TP10_0.1	QA100	QC100
		HA03_0.1	QA101	QC101

Replicate samples were collected during the field sampling program at the rates shown in **Table 10-2**. Relative percentage difference (RPD); a measure of variation between samples, was calculated for each analyte within the sample pairs identified in **Table 10-1**.

Calculated RPD meet the acceptance criteria nominated in **Section 6** and a complete summary of RPD results are shown in the data summary tables in **Appendix D**.

Table 10-2 Replicate Sampling Rates

Analyte Category	Number of Primary Samples	Number of Duplicate Samples	Number of Triplicate Samples	Replicate Ratio
TRH, BTEX, PAH, Metals (As, Cd, Cr, Cu, Ni, Pb, Zn), OCP, OPP	29	2	2	14.5:1:1
Asbestos (NEPM/WA)	29	-	-	-

10.2 Laboratory QA/QC

In accordance with Cardno's Quality Assurance and Quality Control (QA/QC) procedures and *AS4482.1* (2005), samples were stored in insulated transport containers containing ice and delivered to the designated laboratories under Chain of Custody documentation following sample collection. Chain of Custody records are included in **Appendix E**.

Eurofins Environmental Testing and Envirolab, the chosen analytical laboratories are NATA accredited and undertook internal QA/QC procedures which include the analysis of method blanks, internal duplicate samples, laboratory control samples, matrix spikes and surrogate recovery. Additionally, laboratory QA/QC procedures include sample receipt, logging, storage, preservation and analysis within the method specified holding time.

A review of the laboratory QA/QC procedures indicated that, with the exception of the outliers noted in **Table 10-3**, laboratory QA/QC were recorded within acceptance criteria, samples were received and stored appropriately and all samples were analysed within the specified holding time.

Laboratory LOR were below the adopted assessment criteria with the exception TRH, PAH, OCP and OPP for sample BH01_0.1. BH01_0.1 LORs were raised by the laboratory due to matrix interference of the sample. Correspondence with the lab indicated that the increased LORs suggests the sample is highly impacted and this is discussed further in **Section 11**.

Table 10-3 Laboratory QA/QC outlier's summary

Laboratory	Report ID	Sample ID	Analyte	QA/QC Outlier	Notes
Eurofins	806804	S21-Jn60218	TRH (C_{29}-C_{36})	RPD of 32%	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary Reporting in **Appendix E**.
			TRH (C_{34}-C_{40})	RPD of 47%	

10.3 Data Useability

The data validation procedure employed in the assessment of the field and laboratory QA/QC data and shown above and in **Appendix D** and **E** have indicated that the reported analytical results are representative of the conditions at the sample locations and that the analytical data can be relied upon for the purpose of these works. It is concluded that overall the quality of the analytical data produced is acceptable and reliable for the intended purpose.

11 Discussion

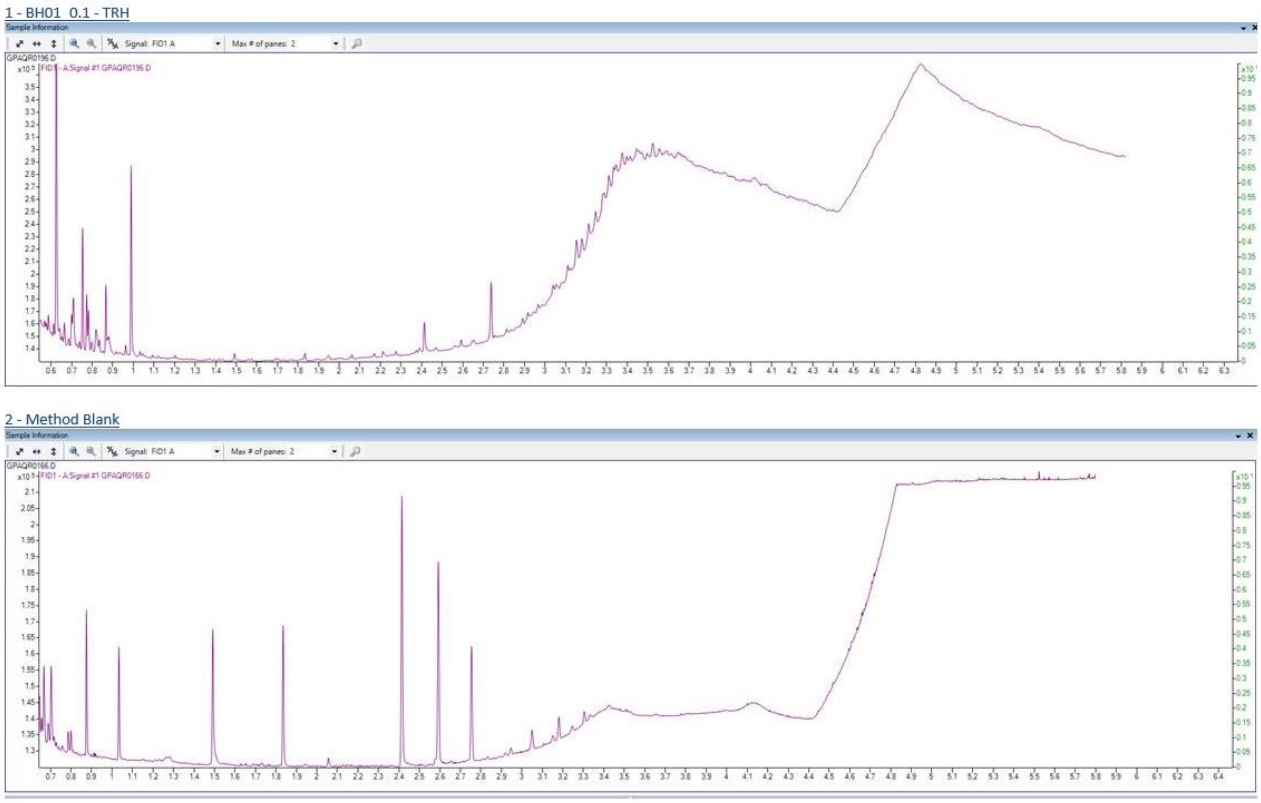
11.1 Human health

Observations and results gathered during this assessment indicate that contamination in soil has been identified in one location that may pose a risk to human health. Sample BH01_0.1 contained concentrations of TRH (F2: >C_{10}-C_{16} less naphthalene), PAH (benzo(a)pyrene) and OCP (toxaphene) above the nominated criteria. Sample analysis also required significantly raised LORs for all volatiles and semi volatile compounds.

Eurofins was contacted for further information regarding the raised LORs and the chromatograms were sought to attempt to determine what potential contaminants are present. Chromatograms are a visible record (i.e. a graph) that shows the components of a mixture by chromatography.

Eurofins provided photographs of the extracted sample which can be viewed in **Photograph 19** in **Appendix B**, as well as the chromatograms which are shown below in **Figure 11-1**. The photograph of the extracted sample shows a very dark colour, which according to Eurofins was an inferred indicator of contaminant impact. An attempt by the laboratory to rerun the sample was unable to resolve a lower LOR due to the presence of elevated concentrations, indicating that the initial results were not anomalous.

Figure 11-1 BH01_0.1 TRH and Method Blank Chromatogram



In addition to Eurofins suggesting that the sample colour was an indicator of contamination, the following comments were also provided with regard to sample BH01_0.1:

- The chromatogram comparison between the sample and method blank appears to indicate the sample is impacted by short chain TRH; and
- PAH, OCP and OPP showed minimal difference between the method blank and chromatogram at the raised LOR.

In respect to this information, the following the following can be inferred

- Exceedances against adopted criteria for OCP (excluding toxaphene), OPP and PAH compounds are unlikely to present a risk to human health as there does not appear to be any concentrations of these compounds in the sample.

- The exceedances for OCP (excluding toxaphene), OPP and PAH are likely the result of the raised LOR and are unlikely to indicate a detectable quantity of the select contaminants.
- The benzo(a)pyrene TEQ (half LOR) exceedance has been calculated using the raised LOR samples and is also likely a result of the raised LOR and not an indicator of the presence of select contaminants.
- The presence of TRH (F2), xylenes and toxaphene in a single sample may indicate the soil in this sample is impacted by insecticide, the hydrocarbons used as a solvent for non-water soluble toxaphene.
- Toxaphene is an insecticide that is considered a persistent organic pollutant that can remain in soil for up to 14 years and is freely soluble in aromatic hydrocarbons (BTEX).
- Toxaphene, TRH and low-level xylene were also detected in sample BH05_0.1, which is also located in the northern section of the Site.

Soils surrounding BH01_0.1 should be subject to further testing to delineate impact and more accurately measure impact at this location, which is provided as a recommendation in **Section 12.2**. These soils are currently located underneath an asphalt hardstand with minimal interaction likely to occur, if excavation works are required in this area then the soil material may require management.

Based on observations and analytical data gathered, with the exception of BH01 and BH05, the remainder of soils at the Site do not appear to contain contaminants that would present a potential risk to human health under the future land use.

11.2 Ecological

Cardno calculated the EILs for the Site using the NEPM (1999) toolbox EIL calculation spreadsheet and inputs are summarised in **Table 7-1**.

Samples BH01_0.1, BH05_0.1 and BH06_0.1 contained copper concentrations that exceeded the EIL criteria. These samples were collected from fill materials in the northern portion of the Site that were beneath asphalt hardstands with no sensitive ecological receptors identified in close proximity.

Samples BH01_0.1, BH02_0.1 and BH05_0.1 contained copper and PAH (benzo(a)pyrene) concentrations that exceeded the adopted ESL criteria. These samples are all located within fill materials with BH01 and BH05 located underneath hardstands, BH02 is located within Nowra Recreation Park and no phytotoxic impacts were evident within the area during sampling with the location covered with grass and plant stress visible.

Based on the analytical soil results and observations noted during sampling, the potential risks to ecological receptors from these ecological exceedances is considered low and acceptable due to an incomplete source-receptor-pathway linkage. The material underneath hardstands in the northern portion of the Site (surrounding BH01_0.1 in particular) which contains the majority of ecological exceedances will also require further assessment due to the possible associated human health risks (which is provided as a recommendation in **Section 12.2**).

Whilst ecological receptors were not identified under the current Site use / configuration, during redevelopment soil from BH01, BH02 and BH05 should not be placed near sensitive ecological receptors / remnant vegetation, or the upper 2 m of the soil profile within landscaped areas or surrounding remnant vegetation. Ideally the material would be placed beneath hardstand surfaces with minimal interaction with ecological receptors, surface water or groundwater.

11.3 Conceptual site model

With the additional information collected as part of this ESA, the preliminary CSM summarised in **Section 5** has been reconsidered and updated. Many of the previously identified PAEC have been removed as potential sources of contaminant risk, however, a number of potential sources remain and are summarised in **Table 11-1**.

Table 11-1 Preliminary Conceptual Site Model (Cardno, 2021)

Source	Potential Contaminants	Encountered Contaminants	Impacted media	Pathway	Receptor	Completeness
Filling of unknown origin and quantity along western ridgeline and surrounding helicopter pad and beneath the hardstands in the northern portion of the Site.	Asbestos; metals; PAH; TRH; BTEX; Phenols; OCP; OPP; PCB	TRH; PAH; BTEX; Metals; PAH; OCP	Soils including fill through direct application Surface water through runoff	Direct contact including ingestion of, impacted media Inhalation of asbestos fibres Surface water infiltration	Ecological receptors: – Site vegetation – Invertebrates and small mammals living in site soils or using site vegetation as a food source – Shallow groundwater Human: – Current Site workers (hospital, preschool) – Future Site workers (hospital) – Workers during construction – Individuals undertaking installation and maintenance of subsurface utilities – Current recreational land users	Potentially complete in the event of any direct interaction with impacted media (i.e. excavations, use as growth medium) Potentially leaching contaminants may infiltrate into shallow perched water
Structures constructed pre-1990	Asbestos; lead and zinc	None encountered – pending investigation within Shoalhaven Pre school.	Soils beneath and surrounding potentially hazardous building materials	Direct contact including ingestion of, impacted media Inhalation of asbestos fibres Surface water infiltration		
Maintenance shed	TRH; PAH; BTEX; metals; OCP/ OPP, other pesticides	No contaminants above adopted criteria encountered.	Soils surrounding maintenance shed (particularly downgradient) Surface water through runoff	Direct contact including ingestion of, impacted media Surface water infiltration		Incomplete as site observations and analytical results indicated no potential or actual contamination is present.

11.4 Data gaps and uncertainties

The following data gaps and uncertainties apply to the findings of this ESA:

- During the sampling program and walkover access was not provided to the Shoalhaven Community Pre-school grounds as it is an operating childcare centre. The Site history review indicates that the contaminant risk may be low, which is also supported by observations noted from outside the boundary fence, however, as the main structure was constructed pre-1990 there is a possibility the structure may contain hazardous building materials and that surrounding surface soils may be impacted by contaminants due to weathering. Additionally, the quality of potential fill soil has not been assessed. As the Shoalhaven Community Preschool was inaccessible at the time of sampling and walkover Cardno is unable to make a definitive statement on contamination within this portion of the Site.
- A recommendation of the PSI (Cardno, 2021) was to locate existing groundwater wells installed by JK Geotechnics to confirm the presence and depth of the local aquifer. The Site has undergone construction and redevelopment since these wells were installed and the wells were unable to be located, and it has been inferred that the wells may have been buried or destroyed. Groundwater seepage was observed in sample location BH02 at a depth of approximately 2.2 m bgl, however, well installation and groundwater sampling were not undertaken. Potential impacts to receptors via groundwater infiltration is considered low due to the predominant absence of shallow perched or groundwater aquifer and the absence of receptors. Should groundwater be encountered during future investigations, or during redevelopment, then potential impacts should be reconsidered.
- The maintenance shed in the northern portion of the Site was locked during the investigation, so a comment on the contents and the potential for contamination from these is unable to be made.
- The presence of pavement and utilities in the northern portion of the Site impeded the ability to observe cuttings and to situate sample locations. The preferred sampling method of test pitting to observe the soil profile and excavated spoil for signs of contamination was unfeasible / impractical due to the operational nature of the hospital at the time of sampling. It is Cardno's understanding that the earthworks in this area, based on the designs available to Cardno at the time of preparing this report, may involve minimal excavation of underlying soil material.

12 Conclusions and Recommendations

12.1 Conclusions

Cardno completed an Environmental Site Assessment for the proposed Shoalhaven Hospital development Site located along Shoalhaven Street, Nowra NSW. The works were completed for John Staff on behalf of NSW Health Infrastructure.

The ESA was undertaken in response to recommendations of a PSI (Cardno, 2021), which identified three Areas of Environmental Concern (AEC). The purpose of this ESA is to provide the client with advice on the contamination status of the Site and the resulting implications for the suitability of the Site for its proposed future land use.

Intrusive soil sampling was undertaken including general site coverage sample locations and sample locations targeting at the identified AECs. In total, 19 locations across the Site were sampled and assessed. The fill layers observed on site showed no obvious indicators of contamination (odour, staining or discolouration) and anthropogenic materials were only observed in trace quantities at select sample locations. Asbestos containing materials were not observed within fill or on visible ground surfaces.

The following conclusions are drawn with respect to soils assessed within the Site:

- **Human Health**
- The location of BH01 and unassessed areas require further investigation to make a statement on contamination and Site suitability, and the requirement, if any, for remediation. The requirement for further assessment at BH01_0.1 should be considered in the context of the project design and the proposed construction activities at that specific location.
- **Ecological**
  - Exceedances of the applicable ecological screening criteria in soil were limited to four samples that contained TRH, benzo(a)pyrene, toxaphene and copper above the criteria. Under the current and proposed land use these exceedances are not considered to present an unacceptable risk as no biota will be reliant on the root zone (upper 2 m) under the future land use, ie the source-receptor-pathway linkage is currently incomplete.
  - Whilst ecological receptors were not identified under the current Site use / configuration, during redevelopment soil from BH01, BH02 and BH05 should not be placed near sensitive ecological receptors / remnant vegetation, or the upper 2 m of the soil profile within landscaped areas or surrounding remnant vegetation. Ideally the material would be placed beneath hardstand surfaces with minimal interaction with ecological receptors, surface water or groundwater.

12.2 Recommendations

Based upon the findings of the ESA and with reference to the proposed future land use of the Site, the following recommendations are made:

- If soils in the vicinity of BH01_0.1 are to be disturbed, further assessment of should be undertaken to confirm the nature and extent of potential impact. The assessment should include:
  - Vertical and lateral delineation of contaminant impact;
  - Silica-gel clean-up and leachability testing on soil samples to reduce interference and determine the toxicity and contaminant risk;
  - Consideration of the fate of the soils during the proposed redevelopment and refinement of the conceptual site model; and
  - Consideration of any design features.
- Upon completion of characterisation and delineation sampling around BH01, remediation should be considered if an unacceptable risk to human health and/or the environment is confirmed.
- Upon completion of a detailed design the findings of this assessment must be revisited and any outstanding data gaps assessed prior to earthworks.
- If the Site is deemed suitable for the proposed development, the following should be considered:

- Future ground disturbance works should be undertaken in accordance with a Construction Environmental Management Plan (CEMP) with an Unexpected Finds Protocol that outlines appropriate actions in the event that potentially contaminated materials are identified. If potentially contaminated materials are identified then a more detailed assessment for will be required as detailed in the ASC NEPM (1999).
- Any waste generated during the redevelopment, including demolition materials and excavated soil, must be assessed for potential offsite reuse / disposal opportunities in accordance with the NSW EPA *Waste Classification* Guidelines (2014) and current resource recovery exemptions / orders.

13 Limitations

This assessment report is not any of the following:

- A Site Audit Report or Site Audit Statement as defined under the *Contaminated Land Management Act 1997* (CLM Act).
- A Detailed or Environmental Site Investigation sufficient for an Environmental Auditor to be able to conclude a Site Audit Report and Site Audit Statement.
- A geotechnical report.
- A detailed hydrogeological assessment in conformance with NSW DEC (2007) *Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination*.
- An assessment of groundwater contaminants potentially arising from other sites or sources nearby.
- A total assessment of the site to determine suitability of the entire parcel of land at the site for one or more beneficial uses of land.
- A hazardous building material survey that will identify any specific building materials on site, which may pose a risk to human health or the environment.
- The agreed scope of this assessment has been limited for the current purposes of the Client. The assessment may not identify contamination occurring in all areas of the site.

This Document has been provided by Cardno subject to the following limitations:

- This Document has been prepared for the particular purpose outlined in Cardno's proposal and no responsibility is accepted for the use of this Document, in whole or in part, in other contexts or for any other purpose.
- The scope and the period of Cardno's services are as described in Cardno's proposal, and are subject to restrictions and limitations. Cardno did not perform a complete assessment of all possible conditions or circumstances that may exist at the site referenced in the Document. If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Cardno in regards to it.
- Conditions may exist which were undetectable given the limited nature of the enquiry Cardno was retained to undertake with respect to the site. Variations in conditions may occur between investigatory locations, and there may be special conditions pertaining to the site which have not been revealed by the investigation and which have not therefore been taken into account in the Document. Accordingly, additional studies and actions may be required.
- In addition, it is recognised that the passage of time affects the information and assessment provided in this Document. Cardno's opinions are based upon information that existed at the time of the production of the Document. It is understood that the services provided allowed Cardno to form no more than an opinion of the actual conditions of the site at the time this Document was prepared and cannot be used to assess the effect of any subsequent changes in the quality of the site, or its surroundings, or any laws or regulations.
- Any assessments made in this Document are based on the conditions indicated from published sources and the investigation described. No warranty is included, either express or implied, that the actual conditions will conform exactly to the assessments contained in this Document.
- Where data supplied by the client or other external sources, including previous site investigation data, have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Cardno for incomplete or inaccurate data supplied by others.

14 References

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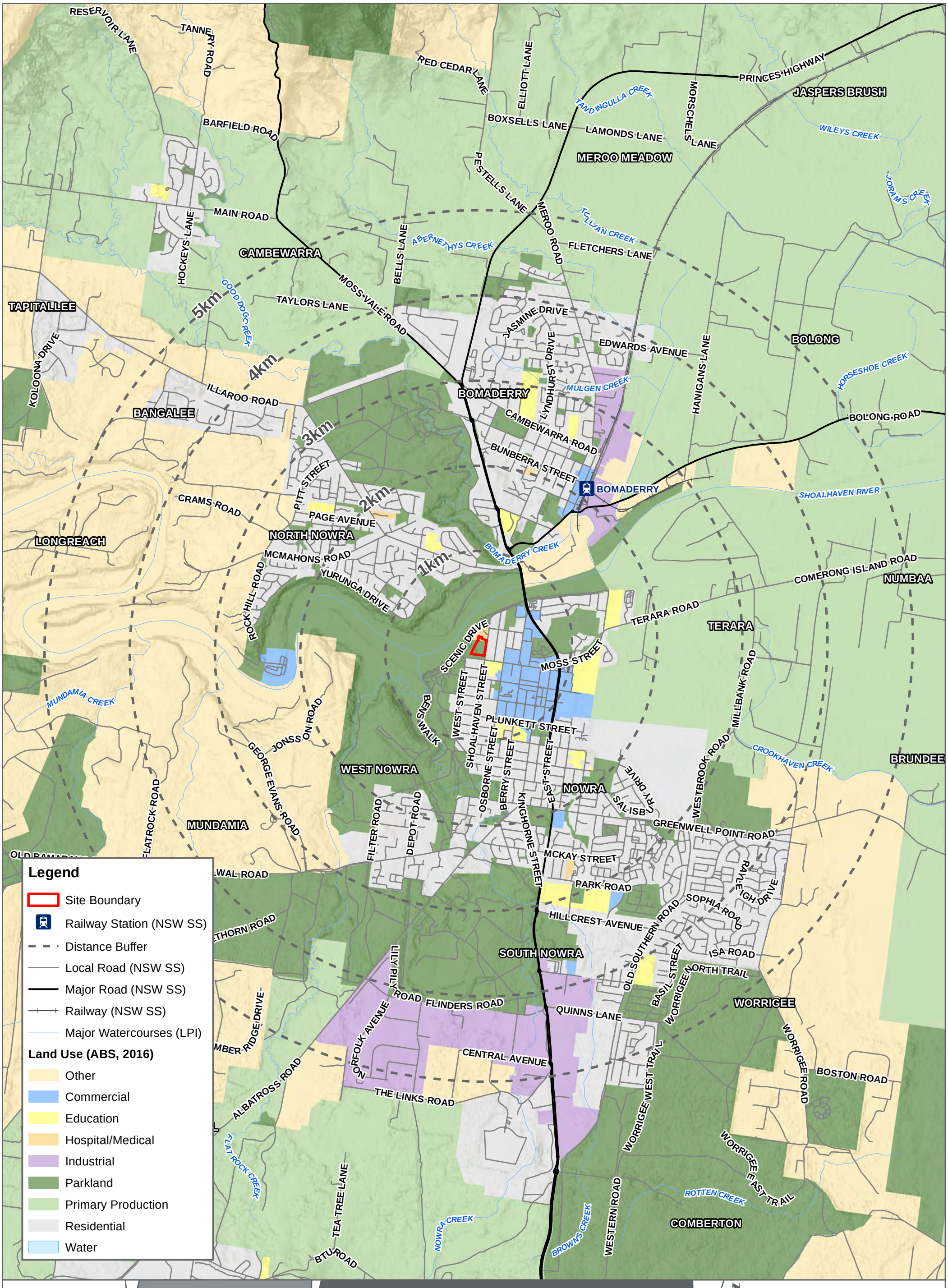
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APPENDIX A

FIGURES



NSW GOVERNMENT Health Infrastructure

FIGURE 1

1:40,000 Scale at A3

km
0 0.25 0.5 0.75 1

Location Plan

SHOALHAVEN HOSPITAL REDEVELOPMENT

Cardno

Map Produced by Cardno NSW/ACT Pty Ltd (NW&E)
Date: 2021-05-14 | Project: 8202118201
Coordinate System: GDA 1994 MGA Zone 56
Map: 8202118201-GS-002-LocationPlan.mxd 01
Basemap supplied by Esri and other third party suppliers



NSW GOVERNMENT Health Infrastructure

FIGURE 2

1:1,500 Scale at A3

m
0 10 20 30 40

Site Plan

SHOALHAVEN HOSPITAL REDEVELOPMENT

N

Cardno

Map Produced by Cardno NSW/ACT Pty Ltd (NW&E)
Date: 2021-05-14 | Project: 8202118201
Coordinate System: GDA 1994 MGA Zone 56
Map: 8202118201-GS-001-SitePlan.mxd 01
Aerial imagery supplied by Nearmap (April, 2021)

Legend

- Site Boundary
- Area not assessed due to access issues
- Cadastre (NSW SS, 2019)

Sample Location

- Borehole
- Hand
- Test Pit

Areas of Environmental Concern

- AEC 1: Filling / Mounding / Tipping within the site
- AEC 2: Soils surrounding maintenance shed
- AEC 3: Structures constructed pre-1990

373 / 755952
BH05
BH06
HA04
BH01
1 / 1043088
HA02
HA01
HA03
104 / 1165533
7034 / 1031852
TP02
BH02
1032 / 1208730
1031 / 1208730
TP04
TP03
BH03
TP06
TP05
1032 / 1208730
TP07
BH04
TP08
TP09
TP10
SCENIC DRIVE
SHOALHAVEN STREET
NORTH STREET
A / 158344
4 / 38019
3 / 38019
1 / 215352
3 / 519318
6 / 560536
9 / 590076
1 / 209099
100 / 1242833
F / 38926
G / 38926
M / 161020
12 / 207329
H / 161019
100 / 1175003
1 / 1088531
4 / 521010
N / 101026
L / 101026
A / 354147
J / 385514
A / 362846
X / 403967
Y / 403967
1 / 331120
2 / 332256
1 / 1088531

FIGURE 3

1:1,000 Scale at A3

m
0 10 20 30 40

Sample Location Plan

SHOALHAVEN HOSPITAL REDEVELOPMENT

NSW GOVERNMENT Health Infrastructure

Cardno

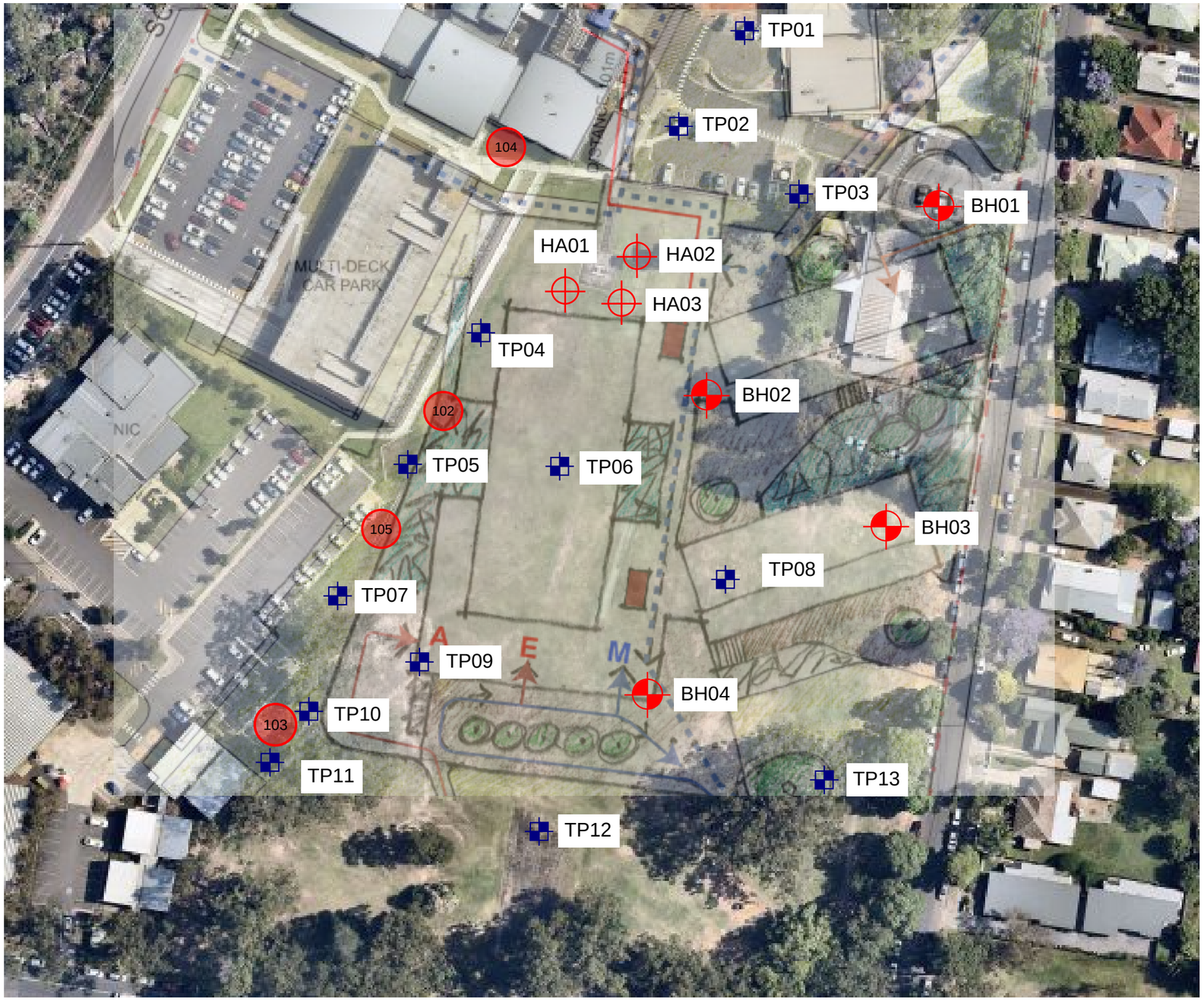
Map Produced by Cardno NSW/ACT Pty Ltd (NW&E)
Date: 2021-07-28 | Project: 8202118201
Coordinate System: GDA 1994 MGA Zone 56
Map: 8202118201-GS-006-SamplingPlan.mxd 01
Aerial imagery supplied by Metromap (December, 2020)

Test Pit

Borehole

Hand Auger

Previous Investigation



Rev	Date	Description	Des	Verf	Appvl

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Ground Floor 16 Burelli Street
Wollongong NSW 2500
Tel: 02 4228 4133 Fax: 02 4228 0811
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Drawn / Date	
Designed / Date	
Checked / Date	
Verified / Date	
Approved	

Client: Johnstaff

Project: 8202118201 - Shoalhaven Hospital Redevelopment

Title: Geotechnical & Contamination Investigation Plans

Status: FOR INFORMATION ONLY

Datum | Scale: NTS | Size: A3

Drawing Number: Figure 4

Revison: 0

APPENDIX B

SITE PHOTOS



Photograph 1: Asphalt hardstand area located at the southern extent of the Site, location of test pitTP10



Photograph 2: Residual sandy CLAY layer observed in spoil from TP10



Photograph 3: Overview shot of the Site, looking north



Photograph 4: Filling observed in the south-western portion of the Site



Photograph 5: Fill profile from TP09, note lawn mat observed in spoil



Photograph 6: Fill profile from TP10, note trace anthropogenics (glass and brick) and sandstone boulders



Photograph 7: Overview shot of the Site, looking northeast



Photograph 8: Soil profile of TP05, note ceramics in upper fill layer to the right



Photograph 9: Spoil from TP05, note river stones and plastic



Photograph 10: Soil profile of HA02



Photograph 11: Location of HA01, adjacent to filling surrounding HA01



Photograph 12: Waste observed at surface surrounding garden beds adjacent to maintenance shed



Photograph 13: Oxygen storage tanks and maintenance shed in the northern portion of the Site



Photograph 14: Overview shot of the Site, looking south



Photograph 15: Sample location BH01



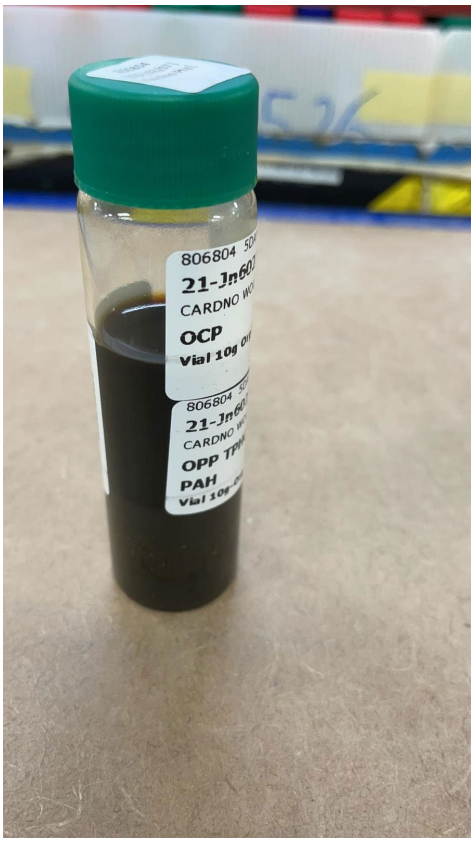
Photograph 16: Drill rig used to excavate boreholes



Photograph 17: Overview shot of the Site, looking south



Photograph 18: Backhoe utilised to excavate test pits



Photograph 19: BH01 sample extraction from Eurofins, note dark colour indicating presence of contamiantion

APPENDIX C

BOREHOLE LOGS

BOREHOLE LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: BH01

Job No: 8202118201 **Sheet:** 1 of 3

Position: **Angle from Horizontal:** 90° **Surface Elevation:**
Rig Type: Hanjin D&B 8D **Mounting:** Track **Driller:** CM
Casing Diameter: HW **Contractor:** Total Drilling
Data Started: 22/6/21 **Date Completed:** 22/6/21 **Logged By:** BA **Checked By:** DR

Drilling: Method	Drilling: Resistance	Drilling: Casing	Water	Sampling & Testing: Sample or Field Test	Depth (m)	Material Description: Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
AD/T	H	HW	Not Encountered					ASPHALT: 0.1m thick, no odour observed			FILL
				ES 0.10 m PID 0.10 m 0.7 ppm D 0.20 - 0.40 m			GC	0.10m FILL: Clayey Sandy GRAVEL: fine to medium, sub-angular to angular, grey to dark grey, fine to coarse grained sand, no odour observed	M		
	F			ES 0.50 m SPT 0.50 - 0.95 m 2, 3, 7 N=10 PID 0.50 m 0.9 ppm	0.5		CI	0.40m Sandy CLAY: orange-brown, fine to coarse grained, sub-rounded to sub-angular sand, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (>PL)	St	RESIDUAL SOIL
					1.0			1.10m	M (<PL)	VSt	
	H						SP	SAND: fine to coarse grained, angular, pale grey, no odour observed	M	D - VD	EXTREMELY WEATHERED
	VH							1.40m Continued as Cored Drill Hole			
					1.5						
					2.0						
					2.5						
					3.0						
					3.5						

METHOD
EX Excavator bucket
R Ripper
HA Hand auger
PT Push tube
SON Sonic drilling
AH Air hammer
PS Percussion sampler
AS Short spiral auger
AD/V Solid flight auger: V-Bit
AD/T Solid flight auger: TC-Bit
HFA Hollow flight auger
WB Washbore drilling
RR Rock roller

PENETRATION
VE Very Easy (No Resistance)
E Easy
F Firm
H Hard
VH Very Hard (Refusal)

WATER
Water Level on Date shown
water inflow
water outflow

FIELD TESTS
SPT - Standard Penetration Test
HP - Hand/Pocket Penetrometer
DCP - Dynamic Cone Penetrometer
PSP - Perth Sand Penetrometer
MC - Moisture Content
PBT - Plate Bearing Test
IMP - Borehole Impression Test
PID - Photoionisation Detector
VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
B - Bulk disturbed sample
D - Disturbed sample
ES - Environmental sample
U - Thin wall tube 'undisturbed'

MOISTURE
D - Dry
M - Moist
W - Wet
PL - Plastic limit
LL - Liquid limit
w - Moisture content

SOIL CONSISTENCY
VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard

RELATIVE DENSITY
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

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CARDNO 2.01.6 LIB.GLB Log CARDNO NON-CORED 8202118201_CONTAMLOGS.GPJ <<DrawingFile>> 13/07/2021 14:59 10.00.01.07 Datgel AGS RTA, Photo, Monitoring Tools

CORE LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: BH01

Job No: 8202118201 **Sheet:** 2 of 3

Position:	**Angle from Horizontal:** 90°	**Surface Elevation:**
Rig Type: Hanjin D&B 8D	**Mounting:** Track	**Driller:** CM
Casing Diameter: HW **Bit Type:** NMLC	**Bit Condition:** Good	**Contractor:** Total Drilling
Data Started: 22/6/21 **Date Completed:** 22/6/21	**Logged By:** BA	**Checked By:** DR

Coring						Material Description				Defect Description		
Method	Fluid	TCR (%)	RQD (%)	RL (m AHD)	Depth (m)	Graphic Log	SOIL TYPE, plasticity or particle characteristic, colour, secondary & minor components ROCK NAME, grain size and type, colour, fabric and texture, inclusions & minor components	Weathering	Estimated Strength $Is_{(50)}$ MPa ● - Axial O - Diametral VL 0.1 L 0.3 M 1 H 3 VH 10 EH	Average Natural Defect Spacing (mm) 20 60 200 600 2000	Visual	Additional Data DEFECT TYPE, orientation, shape, roughness, infilling or coating, thickness, other
					0.5							
					1.0		1.40m START CORING AT 1.40m					
NMLC	0% LOSS	94	83		1.5		SANDSTONE, medium to coarse grained, bedded, pale grey stained red-brown and orange-brown, 5-20mm rounded quartz gravel inclusions	MW				1.44 m: HF, 5° 1.54 m: DB 1.57 m: BP, 0°, UN, RF, SN, Fe 1.62 m: BP, 5°, UN, RF, VNR, Clay
					2.0							2.00 m: HB 2.12 m: JT, 10°, PR, RF, VNR, Clay
					2.5							2.70 m: BP, 5°, UN, RF, VNR, Clay
					3.0			HW				2.95 - 3.04 m: SM, 90 mm, Clayey SAND
							3.10m					3.09 m: BP, 5°, UN, RF, VNR, Clay
							3.20m CORE LOSS 0.10m (3.10-3.20)					3.20 m: DB
	0% LOSS	100	100		3.5		SANDSTONE, medium to coarse grained, bedded, grey, trace fossils present	MW SW				3.95 m: BP, 30°, IR, RF, CN

DRILLING
- AD/V Solid flight auger: V-Bit
- AD/T Solid flight auger: TC-Bit
- HFA Hollow flight auger
- WB Washbore drilling
- RR Rock roller
- PQ Rotary core (85mm)
- HQ Rotary core (63.5mm)
- NMLC Rotary core (51.94mm)
- DT Diatube concrete coring
- PT Push tube
- PS Percussion sampling
- SON Sonic drilling
- AH Air hammer

WATER
- Water Level on date shown
- water inflow
- water outflow

ROCK QUALITY DESCRIPTIONS
- RQD Rock Quality Designation (%)
- TCR Total Core Recovery (%)

ROCK STRENGTH
- EH Extremly High
- VH Very High
- H High
- M Medium
- L Low
- VL Very Low

ROCK WEATHERING
- FR Fresh
- SW Slightly Weathered
- DW Distinctly Weathered
- MW Moderately Weathered
- HW Highly Weathered
- XW Extremly Weathered

DEFECT TYPE
- JT Joint
- SZ Sheared zone
- BP Bedding Parting
- SM Seam
- FL Foliation
- VN Vein
- CL Cleavage
- CS Crushed Seam
- FZ Fracture Zone
- DL Drift Lift
- HB Handing Break
- DB Drilling Break

PLANARITY
- CU Curved
- DIS Discontinuous
- IR Irregular
- PR Planar
- ST Stepped
- UN Undulose

ROUGHNESS
- VR Very Rough
- RF Rough
- S Smooth
- SL Slockensided
- POL Polished

COATING
- CN Clean
- SN Stained
- VNR Veneer (thin or patchy)
- CT Coating (up to 1mm)

INFILL MATERIALS
- X Carbonaceus
- MU Unidentified minteral
- MS Secondary mineral
- KT Chlorite
- CA Calcite
- Fe Iron Oxide
- Qz Quartz

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO CORED BOREHOLE 8202118201 LOGS.GPJ <<DrawingFile>> 05/07/2021 12:42 10.02.00.04 Datgel AGS RTA, Photo, Monitoring Tools

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CORE LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: BH01

Job No: 8202118201 **Sheet:** 3 of 3

Position:	**Angle from Horizontal:** 90°	**Surface Elevation:**
Rig Type: Hanjin D&B 8D	**Mounting:** Track	**Driller:** CM
Casing Diameter: HW	**Bit Type:** NMLC **Bit Condition:** Good	**Contractor:** Total Drilling
Data Started: 22/6/21	**Date Completed:** 22/6/21 **Logged By:** BA	**Checked By:** DR

Coring						Material Description			Defect Description		
Method	Fluid	TCR (%)	RQD (%)	RL (m AHD)	Depth (m)	Graphic Log	SOIL TYPE, plasticity or particle characteristic, colour, secondary & minor components ROCK NAME, grain size and type, colour, fabric and texture, inclusions & minor components	Weathering	Estimated Strength $Is_{(50)}$ MPa ● - Axial O - Diametral VL 0.1 L 0.3 M 1 H 3 VH 10 EH	Average Natural Defect Spacing (mm) 20 60 200 600 2000	Visual	Additional Data DEFECT TYPE, orientation, shape, roughness, infilling or coating, thickness, other
NMLC	0% LOSS	100	100		4.5		SANDSTONE, medium to coarse grained, bedded, grey, trace fossils present *(continued)*	SW				4.00 m: HB 4.12 m: HB 4.29 m: JT, 10°, PR, RF, SN, Fe 4.58 m: BP, 0°, UN, RF, SN 4.70 m: HF, 5°
					4.80m		TERMINATED AT 4.80 m Target depth					
					5.0							
					5.5							
					6.0							
					6.5							
					7.0							
					7.5							

DRILLING
- AD/V Solid flight auger: V-Bit
- AD/T Solid flight auger: TC-Bit
- HFA Hollow flight auger
- WB Washbore drilling
- RR Rock roller
- PQ Rotary core (85mm)
- HQ Rotary core (63.5mm)
- NMLC Rotary core (51.94mm)
- DT Diatube concrete coring
- PT Push tube
- PS Percussion sampling
- SON Sonic drilling
- AH Air hammer

WATER
- Water Level on date shown
- water inflow
- water outflow

ROCK QUALITY DESCRIPTIONS
- RQD Rock Quality Designation (%)
- TCR Total Core Recovery (%)

ROCK STRENGTH
- EH Extremly High
- VH Very High
- H High
- M Medium
- L Low
- VL Very Low

ROCK WEATHERING
- FR Fresh
- SW Slightly Weathered
- DW Distinctly Weathered
- MW Moderately Weathered
- HW Highly Weathered
- XW Extremly Weathered

DEFECT TYPE
- JT Joint
- SZ Sheared zone
- BP Bedding Parting
- SM Seam
- FL Foliation
- VN Vein
- CL Cleavage
- CS Crushed Seam
- FZ Fracture Zone
- DL Drift Lift
- HB Handing Break
- DB Drilling Break

PLANARITY
- CU Curved
- DIS Discontinuous
- IR Irregular
- PR Planar
- ST Stepped
- UN Undulose

ROUGHNESS
- VR Very Rough
- RF Rough
- S Smooth
- SL Slockensided
- POL Polished

COATING
- CN Clean
- SN Stained
- VNR Veneer (thin or patchy)
- CT Coating (up to 1mm)

INFILL MATERIALS
- X Carbonaceus
- MU Unidentified minteral
- MS Secondary mineral
- KT Chlorite
- CA Calcite
- Fe Iron Oxide
- Qz Quartz

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO CORED BOREHOLE 8202118201 LOGS.GPJ <<DrawingFile>> 05/07/2021 12:42 10.02.00.04 Datgel AGS RTA, Photo, Monitoring Tools

BOREHOLE LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: BH02

Job No: 8202118201 **Sheet:** 1 of 3

Position: **Angle from Horizontal:** 90° **Surface Elevation:**
Rig Type: Hanjin D&B 8D **Mounting:** Track **Driller:** CM
Casing Diameter: HW **Contractor:** Total Drilling
Data Started: 21/6/21 **Date Completed:** 21/6/21 **Logged By:** BA **Checked By:** DR

Drilling: Method	Drilling: Resistance	Drilling: Casing	Water	Sampling & Testing: Sample or Field Test	Depth (m)	Graphic Log	Classification	Material Description: SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
AD/T	E	HW	2.20m Minor Seepage - Wet Soil	ES 0.10 m PID 0.10 m 0.7 ppm	0.0		SM	FILL: Silty SAND: fine to coarse grained, dark grey and dark brown, trace fine to coarse grained sand, no odour observed	M		FILL
					0.20m						
	F			ES 0.50 m SPT 0.50 - 0.95 m 3, 4, 5 N=9 PID 0.50 m 0.5 ppm	0.5		CI	Sandy CLAY: orange-brown, fine to coarse grained, sub-rounded to sub-angular sand, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (>PL)	St	RESIDUAL SOIL
					1.0						
				D 1.20 - 1.00 m							
				SPT 1.50 - 1.95 m 5, 7, 9 N=16	1.5				M (<PL)	VSt	
					2.00m						
	H			D 2.20 - 2.50 m	2.0		SC	Clayey Gravelly SAND: fine to coarse grained, sub-rounded to sub-angular, mottled red-brown and grey, fine to coarse, sub-angular to sub-rounded gravel, no odour observed	M	D - VD	EXTREMELY WEATHERED
	VH				2.5				W		
					2.80m			Continued as Cored Drill Hole			
					3.0						
					3.5						

METHOD
EX Excavator bucket
R Ripper
HA Hand auger
PT Push tube
SON Sonic drilling
AH Air hammer
PS Percussion sampler
AS Short spiral auger
AD/V Solid flight auger: V-Bit
AD/T Solid flight auger: TC-Bit
HFA Hollow flight auger
WB Washbore drilling
RR Rock roller

PENETRATION
VE Very Easy (No Resistance)
E Easy
F Firm
H Hard
VH Very Hard (Refusal)

WATER
Water Level on Date shown
water inflow
water outflow

FIELD TESTS
SPT - Standard Penetration Test
HP - Hand/Pocket Penetrometer
DCP - Dynamic Cone Penetrometer
PSP - Perth Sand Penetrometer
MC - Moisture Content
PBT - Plate Bearing Test
IMP - Borehole Impression Test
PID - Photoionisation Detector
VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
B - Bulk disturbed sample
D - Disturbed sample
ES - Environmental sample
U - Thin wall tube 'undisturbed'

MOISTURE
D - Dry
M - Moist
W - Wet
PL - Plastic limit
LL - Liquid limit
w - Moisture content

SOIL CONSISTENCY
VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard

RELATIVE DENSITY
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO NON-CORED 8202118201_CONTAMLOGS.GPJ <<DrawingFile>> 13/07/2021 14:59 10.00.01.07 Datgel AGS RTA, Photo, Monitoring Tools

Cardno

CORE LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: BH02

Job No: 8202118201 **Sheet:** 2 of 3

Position:	**Angle from Horizontal:** 90°	**Surface Elevation:**
Rig Type: Hanjin D&B 8D	**Mounting:** Track	**Driller:** CM
Casing Diameter: HW **Bit Type:** NMLC	**Bit Condition:** Good	**Contractor:** Total Drilling
Data Started: 21/6/21 **Date Completed:** 21/6/21	**Logged By:** BA	**Checked By:** DR

Coring						Material Description				Defect Description		
Method	Fluid	TCR (%)	RQD (%)	RL (m AHD)	Depth (m)	Graphic Log	SOIL TYPE, plasticity or particle characteristic, colour, secondary & minor components ROCK NAME, grain size and type, colour, fabric and texture, inclusions & minor components	Weathering	Estimated Strength $Is_{(50)}$ MPa ● - Axial O - Diametral VL 0.1 L 0.3 M 1 H 3 VH 10 EH	Average Natural Defect Spacing (mm) 20 60 200 600 2000	Visual	Additional Data DEFECT TYPE, orientation, shape, roughness, infilling or coating, thickness, other
					0.5 1.0 1.5 2.0 2.5							
							2.80m START CORING AT 2.80m					
NMLC	0% LOSS	100	87		3.0 3.5		SANDSTONE, medium to coarse grained, bedded, pale grey stained orange-brown to red-brown	MW				3.00 m: HB 3.07 m: DB 3.69 m: JT, 10°, PR, RF, SN, Fe 3.75 m: JT, 10°, PR, RF, SN, Fe 3.83 m: DB 3.88 m: BP, 0°, UN, RF, SN, Fe 3.95 m: HF, 5°

DRILLING
- AD/V Solid flight auger: V-Bit
- AD/T Solid flight auger: TC-Bit
- HFA Hollow flight auger
- WB Washbore drilling
- RR Rock roller
- PQ Rotary core (85mm)
- HQ Rotary core (63.5mm)
- NMLC Rotary core (51.94mm)
- DT Diatube concrete coring
- PT Push tube
- PS Percussion sampling
- SON Sonic drilling
- AH Air hammer

WATER
- Water Level on date shown
- water inflow
- water outflow

ROCK QUALITY DESCRIPTIONS
- RQD Rock Quality Designation (%)
- TCR Total Core Recovery (%)

ROCK STRENGTH
- EH Extremly High
- VH Very High
- H High
- M Medium
- L Low
- VL Very Low

ROCK WEATHERING
- FR Fresh
- SW Slightly Weathered
- DW Distinctly Weathered
- MW Moderately Weathered
- HW Highly Weathered
- XW Extremly Weathered

DEFECT TYPE
- JT Joint
- SZ Sheared zone
- BP Bedding Parting
- SM Seam
- FL Foliation
- VN Vein
- CL Cleavage
- CS Crushed Seam
- FZ Fracture Zone
- DL Drift Lift
- HB Handing Break
- DB Drilling Break

PLANARITY
- CU Curved
- DIS Discontinuous
- IR Irregular
- PR Planar
- ST Stepped
- UN Undulose

ROUGHNESS
- VR Very Rough
- RF Rough
- S Smooth
- SL Slockensided
- POL Polished

COATING
- CN Clean
- SN Stained
- VNR Veneer (thin or patchy)
- CT Coating (up to 1mm)

INFILL MATERIALS
- X Carbonaceus
- MU Unidentified minteral
- MS Secondary mineral
- KT Chlorite
- CA Calcite
- Fe Iron Oxide
- Qz Quartz

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO CORED BOREHOLE 8202118201 LOGS.GPJ <<DrawingFile>> 05/07/2021 12:42 10.02.00.04 Datgel AGS RTA, Photo, Monitoring Tools

CORE LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: BH02

Job No: 8202118201 **Sheet:** 3 of 3

Position:	**Angle from Horizontal:** 90°	**Surface Elevation:**
Rig Type: Hanjin D&B 8D	**Mounting:** Track	**Driller:** CM
Casing Diameter: HW **Bit Type:** NMLC	**Bit Condition:** Good	**Contractor:** Total Drilling
Data Started: 21/6/21 **Date Completed:** 21/6/21	**Logged By:** BA	**Checked By:** DR

Coring: Method	Coring: Fluid	Coring: TCR (%)	Coring: RQD (%)	RL (m AHD)	Depth (m)	Material Description: Graphic Log	Material Description: SOIL TYPE, plasticity or particle characteristic, colour, secondary & minor components ROCK NAME, grain size and type, colour, fabric and texture, inclusions & minor components	Material Description: Weathering	Material Description: Estimated Strength $Is_{(50)}$ MPa (● - Axial O - Diametral) VL 0.1 L 0.3 M 1 H 3 VH 10 EH	Defect Description: Average Natural Defect Spacing (mm) 20 60 200 600 2000	Defect Description: Visual	Defect Description: Additional Data DEFECT TYPE, orientation, shape, roughness, infilling or coating, thickness, other
NMLC	0% LOSS	100	87		4.5		SANDSTONE, medium to coarse grained, bedded, pale grey stained orange-brown to red-brown *(continued)*	MW				3.97 m: BP, 0°, UN, RF, SN, Fe 4.00 m: BP, 0°, UN, RF, SN, Fe 4.02 m: HF, 5° 4.04 m: HF, 0° 4.09 m: BP, 5°, UN, RF, SN, Fe 4.18 m: BP, 10°, UN, RF, SN, Fe 4.20 m: BP, 5°, UN, RF, SN, Fe
								SW				4.53 m: HB
					5.0							4.88 m: BP, 5°, UN, RF, CN 5.00 m: HB 5.03 m: BP, 10°, UN, RF, CN
					5.5							5.16 m: BP, 5°, UN, RF, CN 5.37 m: BP, 10°, UN, RF, CN 5.51 m: BP, 10°, UN, RF, CN 5.59 m: BP, 10°, UN, RF, CN
	0% LOSS	100	91		6.0		6.48m					5.73 m: BP, 10°, UN, RF, CN 5.75 m: DB 5.77 m: DB 6.00 m: HB 6.19 m: BP, 0°, IR, RF, CN, on Fossil
					6.5		TERMINATED AT 6.48 m Target depth					
					7.0							
					7.5							

DRILLING
AD/V Solid flight auger: V-Bit
AD/T Solid flight auger: TC-Bit
HFA Hollow flight auger
WB Washbore drilling
RR Rock roller
PQ Rotary core (85mm)
HQ Rotary core (63.5mm)
NMLC Rotary core (51.94mm)
DT Diatube concrete coring
PT Push tube
PS Percussion sampling
SON Sonic drilling
AH Air hammer

WATER
Water Level on date shown
water inflow
water outflow

ROCK QUALITY DESCRIPTIONS
RQD Rock Quality Designation (%)
TCR Total Core Recovery (%)

ROCK STRENGTH
EH Extremly High
VH Very High
H High
M Medium
L Low
VL Very Low

ROCK WEATHERING
FR Fresh
SW Slightly Weathered
DW Distinctly Weathered
MW Moderately Weathered
HW Highly Weathered
XW Extremly Weathered

DEFECT TYPE
JT Joint
SZ Sheared zone
BP Bedding Parting
SM Seam
FL Foliation
VN Vein
CL Cleavage
CS Crushed Seam
FZ Fracture Zone
DL Drift Lift
HB Handing Break
DB Drilling Break

PLANARITY
CU Curved
DIS Discontinuous
IR Irregular
PR Planar
ST Stepped
UN Undulose

ROUGHNESS
VR Very Rough
RF Rough
S Smooth
SL Slockensided
POL Polished

COATING
CN Clean
SN Stained
VNR Veneer (thin or patchy)
CT Coating (up to 1mm)

INFILL MATERIALS
X Carbonaceus
MU Unidentified minteral
MS Secondary mineral
KT Chlorite
CA Calcite
Fe Iron Oxide
Qz Quartz

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO CORED BOREHOLE 8202118201 LOGS.GPJ <<DrawingFile>> 05/07/2021 12:42 10.02.00.04 Datgel AGS RTA, Photo, Monitoring Tools

BOREHOLE LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: BH03

Job No: 8202118201 **Sheet:** 1 of 3

Position: **Angle from Horizontal:** 90° **Surface Elevation:**
Rig Type: Hanjin D&B 8D **Mounting:** Track **Driller:** CM
Casing Diameter: HW **Contractor:** Total Drilling
Data Started: 21/6/21 **Date Completed:** 21/6/21 **Logged By:** BA **Checked By:** DR

Drilling			Water	Sampling & Testing	Depth (m)	Material Description					
Method	Resistance	Casing		Sample or Field Test		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
AD/T	E	HW	Not Encountered	ES 0.10 m PID 0.10 m 1 ppm	0		SM	FILL: Silty SAND: fine to coarse grained, dark grey and dark brown, trace fine to coarse grained sand, no odour observed	M		FILL
					0.20m						
	F			ES 0.50 m SPT 0.50 - 0.95 m 3, 3, 5 N=8 PID 0.50 m 0.7 ppm	0.5		CL-Cl	Sandy CLAY: low to medium plasticity, orange-brown, fine to coarse grained, sub-rounded to sub-angular sand, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (>PL)	St	RESIDUAL SOIL
					1.0						
				D 1.20 - 1.50 m							
				SPT 1.50 - 1.95 m 4, 4, 5 N=9	1.5						
					1.90m						
					2.0		CL-Cl	Sandy CLAY: low to medium plasticity, red-brown, fine to coarse grained, sub-rounded to sub-angular sand, with fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (<PL)	VSt	
				D 2.70 - 3.00 m	2.5						
				SPT 3.00 - 3.35 m 8, 10, 8/50mm N=R	3.0						
	H						SC	Clayey Gravelly SAND: fine to coarse grained, sub-rounded to sub-angular, grey, fine to coarse, sub-angular to sub-rounded gravel, no odour observed	M	D - VD	EXTREMELY WEATHERED
WB	VH				3.50m						
					3.5			Continued as Cored Drill Hole			

METHOD
EX Excavator bucket
R Ripper
HA Hand auger
PT Push tube
SON Sonic drilling
AH Air hammer
PS Percussion sampler
AS Short spiral auger
AD/V Solid flight auger: V-Bit
AD/T Solid flight auger: TC-Bit
HFA Hollow flight auger
WB Washbore drilling
RR Rock roller

PENETRATION
VE Very Easy (No Resistance)
E Easy
F Firm
H Hard
VH Very Hard (Refusal)

WATER
Water Level on Date shown
water inflow
water outflow

FIELD TESTS
SPT - Standard Penetration Test
HP - Hand/Pocket Penetrometer
DCP - Dynamic Cone Penetrometer
PSP - Perth Sand Penetrometer
MC - Moisture Content
PBT - Plate Bearing Test
IMP - Borehole Impression Test
PID - Photoionisation Detector
VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
B - Bulk disturbed sample
D - Disturbed sample
ES - Environmental sample
U - Thin wall tube 'undisturbed'

MOISTURE
D - Dry
M - Moist
W - Wet
PL - Plastic limit
LL - Liquid limit
w - Moisture content

SOIL CONSISTENCY
VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard

RELATIVE DENSITY
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO NON-CORED 8202118201_CONTAMLOGS.GPJ <<DrawingFile>> 13/07/2021 14:59 10.00.01.07 Datgel AGS RTA, Photo, Monitoring Tools

Cardno

CORE LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: BH03

Job No: 8202118201 **Sheet:** 2 of 3

Position:	**Angle from Horizontal:** 90°	**Surface Elevation:**
Rig Type: Hanjin D&B 8D	**Mounting:** Track	**Driller:** CM
Casing Diameter: HW	**Bit Type:** NMLC	**Bit Condition:** Good	**Contractor:** Total Drilling
Data Started: 21/6/21	**Date Completed:** 21/6/21	**Logged By:** BA	**Checked By:** DR

Coring						Material Description				Defect Description		
Method	Fluid	TCR (%)	RQD (%)	RL (m AHD)	Depth (m)	Graphic Log	SOIL TYPE, plasticity or particle characteristic, colour, secondary & minor components ROCK NAME, grain size and type, colour, fabric and texture, inclusions & minor components	Weathering	Estimated Strength $Is_{(50)}$ MPa ● - Axial O - Diametral VL 0.1 L 0.3 M 1 H 3 VH 10 EH	Average Natural Defect Spacing (mm) 20 60 200 600 2000	Visual	Additional Data DEFECT TYPE, orientation, shape, roughness, infilling or coating, thickness, other
					0.5							
					1.0							
					1.5							
					2.0							
					2.5							
					3.0							
					3.5		3.50m START CORING AT 3.50m					
NMLC	0% LOSS	92	79				CORE LOSS 0.16m (3.50-3.66) 3.66m SANDSTONE, medium to coarse grained, bedded, pale grey stained orange-brown to red-brown	MW				3.73 - 3.75 m: SM, 20 mm, Clay 3.78 m: DB 3.81 m: HB

DRILLING
AD/V Solid flight auger: V-Bit
AD/T Solid flight auger: TC-Bit
HFA Hollow flight auger
WB Washbore drilling
RR Rock roller
PQ Rotary core (85mm)
HQ Rotary core (63.5mm)
NMLC Rotary core (51.94mm)
DT Diatube concrete coring
PT Push tube
PS Percussion sampling
SON Sonic drilling
AH Air hammer

WATER
Water Level on date shown
water inflow
water outflow

ROCK QUALITY DESCRIPTIONS
RQD Rock Quality Designation (%)
TCR Total Core Recovery (%)

ROCK STRENGTH
EH Extremly High
VH Very High
H High
M Medium
L Low
VL Very Low

ROCK WEATHERING
FR Fresh
SW Slightly Weathered
DW Distinctly Weathered
MW Moderately Weathered
HW Highly Weathered
XW Extremly Weathered

DEFECT TYPE
JT Joint
SZ Sheared zone
BP Bedding Parting
SM Seam
FL Foliation
VN Vein
CL Cleavage
CS Crushed Seam
FZ Fracture Zone
DL Drift Lift
HB Handing Break
DB Drilling Break

PLANARITY
CU Curved
DIS Discontinuous
IR Irregular
PR Planar
ST Stepped
UN Undulose

ROUGHNESS
VR Very Rough
RF Rough
S Smooth
SL Slockensided
POL Polished

COATING
CN Clean
SN Stained
VNR Veneer (thin or patchy)
CT Coating (up to 1mm)

INFILL MATERIALS
X Carbonaceus
MU Unidentified minteral
MS Secondary mineral
KT Chlorite
CA Calcite
Fe Iron Oxide
Qz Quartz

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO CORED BOREHOLE 8202118201 LOGS.GPJ <<DrawingFile>> 05/07/2021 12:42 10.02.00.04 Datgel AGS RTA, Photo, Monitoring Tools

CORE LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: BH03

Job No: 8202118201 **Sheet:** 3 of 3

Position:	**Angle from Horizontal:** 90°	**Surface Elevation:**
Rig Type: Hanjin D&B 8D	**Mounting:** Track	**Driller:** CM
Casing Diameter: HW **Bit Type:** NMLC	**Bit Condition:** Good	**Contractor:** Total Drilling
Data Started: 21/6/21 **Date Completed:** 21/6/21	**Logged By:** BA	**Checked By:** DR

Coring						Material Description			Defect Description		
Method	Fluid	TCR (%)	RQD (%)	RL (m AHD)	Depth (m)	Graphic Log	SOIL TYPE, plasticity or particle characteristic, colour, secondary & minor components ROCK NAME, grain size and type, colour, fabric and texture, inclusions & minor components	Weathering	Estimated Strength $Is_{(50)}$ MPa ● - Axial O - Diametral VL 0.1 L 0.3 M 1 H 3 VH 10 EH	Average Natural Defect Spacing (mm) 20 60 200 600 2000	Visual	Additional Data DEFECT TYPE, orientation, shape, roughness, infilling or coating, thickness, other
NMLC	0% LOSS	92	79		4.5		SANDSTONE, medium to coarse grained, bedded, pale grey stained orange-brown to red-brown *(continued)*	MW				4.00 m: HB 4.41 m: BP, 10°, UN, RF, SN, Fe 4.85 m: BP, 5°, UN, RF, SN, Fe 4.91 m: BP, 10°, UN, RF, VNR, Clay 4.93 m: BP, 0°, UN, RF, VNR, Clay 4.94 - 5.00 m: SM, 5°, 60 mm, Clay
					5.0							5.10 m: BP, 5°, UN, RF, VNR, Clay 5.14 m: BP, 10°, UN, RF, VNR, Clay
	0% LOSS	100	89		5.5							5.51 m: BP, 5°, UN, RF, CN 5.77 m: BP, 5°, UN, RF, SN, Fe 5.93 m: BP, 10°, UN, RF, SN, Fe
					6.0							6.00 m: HB
					6.5			HW SW				6.41 m: JT, 60°, PR, RF, SN, Fe 6.50 m: JT, 20°, PR, RF, SN, Fe 6.58 m: JT, 20°, PR, RF, SN, Fe 6.71 m: BP, 5°, UN, RF, CN 6.86 m: BP, 10°, UN, RF, CN, on Fossil
					7.0	7.00m	TERMINATED AT 7.00 m Target depth					7.00 m: DB
					7.5							

DRILLING
- AD/V Solid flight auger: V-Bit
- AD/T Solid flight auger: TC-Bit
- HFA Hollow flight auger
- WB Washbore drilling
- RR Rock roller
- PQ Rotary core (85mm)
- HQ Rotary core (63.5mm)
- NMLC Rotary core (51.94mm)
- DT Diatube concrete coring
- PT Push tube
- PS Percussion sampling
- SON Sonic drilling
- AH Air hammer

WATER
- Water Level on date shown
- water inflow
- water outflow

ROCK QUALITY DESCRIPTIONS
- RQD Rock Quality Designation (%)
- TCR Total Core Recovery (%)

ROCK STRENGTH
- EH Extremly High
- VH Very High
- H High
- M Medium
- L Low
- VL Very Low

ROCK WEATHERING
- FR Fresh
- SW Slightly Weathered
- DW Distinctly Weathered
- MW Moderately Weathered
- HW Highly Weathered
- XW Extremly Weathered

DEFECT TYPE
- JT Joint
- SZ Sheared zone
- BP Bedding Parting
- SM Seam
- FL Foliation
- VN Vein
- CL Cleavage
- CS Crushed Seam
- FZ Fracture Zone
- DL Drift Lift
- HB Handing Break
- DB Drilling Break

PLANARITY
- CU Curved
- DIS Discontinuous
- IR Irregular
- PR Planar
- ST Stepped
- UN Undulose

ROUGHNESS
- VR Very Rough
- RF Rough
- S Smooth
- SL Slockensided
- POL Polished

COATING
- CN Clean
- SN Stained
- VNR Veneer (thin or patchy)
- CT Coating (up to 1mm)

INFILL MATERIALS
- X Carbonaceus
- MU Unidentified minteral
- MS Secondary mineral
- KT Chlorite
- CA Calcite
- Fe Iron Oxide
- Qz Quartz

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO CORED BOREHOLE 8202118201 LOGS.GPJ <<DrawingFile>> 05/07/2021 12:42 10.02.00.04 Datgel AGS RTA, Photo, Monitoring Tools

Cardno

BOREHOLE LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: BH04

Job No: 8202118201 **Sheet:** 1 of 3

Position: **Angle from Horizontal:** 90° **Surface Elevation:**
Rig Type: Hanjin D&B 8D **Mounting:** Track **Driller:** CM
Casing Diameter: HW **Contractor:** Total Drilling
Data Started: 22/6/21 **Date Completed:** 22/6/21 **Logged By:** BA **Checked By:** DR

Drilling: Method	Drilling: Resistance	Drilling: Casing	Water	Sampling & Testing: Sample or Field Test	Depth (m)	Material Description: Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
AD/T	E	HW	Not Encountered	ES 0.10 m PID 0.10 m 0.8 ppm	0.0		SM	FILL: Silty SAND: fine to coarse grained, dark grey and dark brown, trace fine to coarse grained sand, no odour observed	M		FILL
					0.20m						
				B 0.50 - 1.00 m ES 0.50 m SPT 0.50 - 0.95 m 3, 5, 5 N=10 PID 0.50 m 0.6 ppm	0.5		CL-CI	Sandy CLAY: low to medium plasticity, orange-brown, fine to coarse grained, sub-rounded to sub-angular sand, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (>PL)	St	RESIDUAL SOIL
				1.00 m C 1.00 m	1.0						
					1.20m						
	F			D 1.20 - 1.50 m			CL-CI	Sandy CLAY: low to medium plasticity, red-brown and grey, fine to coarse grained, sub-rounded to sub-angular sand, with fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (<PL)	VSt	
				SPT 1.50 - 1.95 m 8, 13, 21 N=34	1.5						
					2.0						
					2.5						
					2.70m						
	H			D 2.70 - 3.00 m			SC	Clayey Gravelly SAND: fine to coarse grained, sub-rounded to sub-angular, mottled red-brown and grey, fine to coarse, sub-angular to sub-rounded gravel, no odour observed	M	D - VD	EXTREMELY WEATHERED
				SPT 3.00 - 3.10 m 12/100mm N=R	3.0						
WB	VH				3.5						
					3.50m			Continued as Cored Drill Hole			

METHOD
EX Excavator bucket
R Ripper
HA Hand auger
PT Push tube
SON Sonic drilling
AH Air hammer
PS Percussion sampler
AS Short spiral auger
AD/V Solid flight auger: V-Bit
AD/T Solid flight auger: TC-Bit
HFA Hollow flight auger
WB Washbore drilling
RR Rock roller

PENETRATION
VE Very Easy (No Resistance)
E Easy
F Firm
H Hard
VH Very Hard (Refusal)

WATER
Water Level on Date shown
water inflow
water outflow

FIELD TESTS
SPT - Standard Penetration Test
HP - Hand/Pocket Penetrometer
DCP - Dynamic Cone Penetrometer
PSP - Perth Sand Penetrometer
MC - Moisture Content
PBT - Plate Bearing Test
IMP - Borehole Impression Test
PID - Photoionisation Detector
VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
B - Bulk disturbed sample
D - Disturbed sample
ES - Environmental sample
U - Thin wall tube 'undisturbed'

MOISTURE
D - Dry
M - Moist
W - Wet
PL - Plastic limit
LL - Liquid limit
w - Moisture content

SOIL CONSISTENCY
VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard

RELATIVE DENSITY
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO NON-CORED 8202118201_CONTAMLOGS.GPJ <<DrawingFile>> 13/07/2021 14:59 10.00.01.07 Datgel AGS RTA, Photo, Monitoring Tools

Cardno

CORE LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: BH04

Job No: 8202118201 **Sheet:** 2 of 3

Position:	**Angle from Horizontal:** 90°	**Surface Elevation:**
Rig Type: Hanjin D&B 8D	**Mounting:** Track	**Driller:** CM
Casing Diameter: HW	**Bit Type:** NMLC	**Bit Condition:** Good	**Contractor:** Total Drilling
Data Started: 22/6/21	**Date Completed:** 22/6/21	**Logged By:** BA	**Checked By:** DR

Coring						Material Description				Defect Description		
Method	Fluid	TCR (%)	RQD (%)	RL (m AHD)	Depth (m)	Graphic Log	SOIL TYPE, plasticity or particle characteristic, colour, secondary & minor components ROCK NAME, grain size and type, colour, fabric and texture, inclusions & minor components	Weathering	Estimated Strength $Is_{(50)}$ MPa ● - Axial O - Diametral VL 0.1 L 0.3 M 1 H 3 VH 10 EH	Average Natural Defect Spacing (mm) 20 60 200 600 2000	Visual	Additional Data DEFECT TYPE, orientation, shape, roughness, infilling or coating, thickness, other
					0.5							
					1.0							
					1.5							
					2.0							
					2.5							
					3.0							
					3.5		3.50m START CORING AT 3.50m					
NMLC	0% LOSS	100	87				SANDSTONE, medium to coarse grained, bedded, pale grey stained orange-brown to red-brown	MW				3.80 m: BP, 10°, CU, RF, VNR, 10 mm, Clay 3.83 - 3.84 m: SM, 10 mm, Clay 3.98 m: DB

DRILLING
- AD/V Solid flight auger: V-Bit
- AD/T Solid flight auger: TC-Bit
- HFA Hollow flight auger
- WB Washbore drilling
- RR Rock roller
- PQ Rotary core (85mm)
- HQ Rotary core (63.5mm)
- NMLC Rotary core (51.94mm)
- DT Diatube concrete coring
- PT Push tube
- PS Percussion sampling
- SON Sonic drilling
- AH Air hammer

WATER
- Water Level on date shown
- water inflow
- water outflow

ROCK QUALITY DESCRIPTIONS
- RQD Rock Quality Designation (%)
- TCR Total Core Recovery (%)

ROCK STRENGTH
- EH Extremly High
- VH Very High
- H High
- M Medium
- L Low
- VL Very Low

ROCK WEATHERING
- FR Fresh
- SW Slightly Weathered
- DW Distinctly Weathered
- MW Moderately Weathered
- HW Highly Weathered
- XW Extremly Weathered

DEFECT TYPE
- JT Joint
- SZ Sheared zone
- BP Bedding Parting
- SM Seam
- FL Foliation
- VN Vein
- CL Cleavage
- CS Crushed Seam
- FZ Fracture Zone
- DL Drift Lift
- HB Handing Break
- DB Drilling Break

PLANARITY
- CU Curved
- DIS Discontinuous
- IR Irregular
- PR Planar
- ST Stepped
- UN Undulose

ROUGHNESS
- VR Very Rough
- RF Rough
- S Smooth
- SL Slockensided
- POL Polished

COATING
- CN Clean
- SN Stained
- VNR Veneer (thin or patchy)
- CT Coating (up to 1mm)

INFILL MATERIALS
- X Carbonaceus
- MU Unidentified minteral
- MS Secondary mineral
- KT Chlorite
- CA Calcite
- Fe Iron Oxide
- Qz Quartz

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO CORED BOREHOLE 8202118201 LOGS.GPJ <<DrawingFile>> 05/07/2021 12:42 10.02.00.04 Datgel AGS RTA, Photo, Monitoring Tools

CORE LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: BH04

Job No: 8202118201 **Sheet:** 3 of 3

Position:	**Angle from Horizontal:** 90°	**Surface Elevation:**
Rig Type: Hanjin D&B 8D	**Mounting:** Track	**Driller:** CM
Casing Diameter: HW	**Bit Type:** NMLC	**Bit Condition:** Good	**Contractor:** Total Drilling
Data Started: 22/6/21	**Date Completed:** 22/6/21	**Logged By:** BA	**Checked By:** DR

Coring: Method	Coring: Fluid	Coring: TCR (%)	Coring: RQD (%)	RL (m AHD)	Depth (m)	Material Description: Graphic Log	Material Description: SOIL TYPE, plasticity or particle characteristic, colour, secondary & minor components ROCK NAME, grain size and type, colour, fabric and texture, inclusions & minor components	Material Description: Weathering	Material Description: Estimated Strength $Is_{(50)}$ MPa (● - Axial O - Diametral) VL 0.1 L 0.3 M 1 H 3 VH 10 EH	Defect Description: Average Natural Defect Spacing (mm) 20 60 200 600 2000	Defect Description: Visual	Defect Description: Additional Data DEFECT TYPE, orientation, shape, roughness, infilling or coating, thickness, other
NMLC	0% LOSS	100	87		4.5		SANDSTONE, medium to coarse grained, bedded, pale grey stained orange-brown to red-brown *(continued)*	MW				4.00 m: HB 4.08 m: HB 4.18 m: BP, 10°, UN, RF, SN, Fe 4.23 m: JT, 20°, PR, RF, SN, Fe 4.25 m: JT, 30°, PR, RF, SN, Fe 4.30 m: BP, 10°, UN, RF, SN, Fe 4.48 - 4.50 m: SM, 5°, Clay 4.51 m: HF, 10° 4.54 m: HF, 10° 4.57 m: HF, 10°
					5.0			SW				4.73 m: JT, 10°, PR, RF, CN, on Fossil 4.86 m: HB 5.00 m: HB 5.10 m: BP, 10°, UN, RF, CN, on Fossil
	0% LOSS	100	100		5.5			HW SW				5.37 m: BP, 10°, PR, RF, SN, Fe 5.40 m: BP, 10°, PR, RF, SN, Fe 5.45 m: BP, 20°, UN, RF, SN, Fe 5.66 m: DB
					6.0							6.00 m: HB 6.09 m: BP, 20°, UN, RF, CN, on Fossil
					6.5		6.90m					6.30 m: BP, 20°, UN, RF, CN, on Fossil
					7.0		TERMINATED AT 6.90 m Target depth					
					7.5							

DRILLING
- AD/V Solid flight auger: V-Bit
- AD/T Solid flight auger: TC-Bit
- HFA Hollow flight auger
- WB Washbore drilling
- RR Rock roller
- PQ Rotary core (85mm)
- HQ Rotary core (63.5mm)
- NMLC Rotary core (51.94mm)
- DT Diatube concrete coring
- PT Push tube
- PS Percussion sampling
- SON Sonic drilling
- AH Air hammer

WATER
- Water Level on date shown
- water inflow
- water outflow

ROCK QUALITY DESCRIPTIONS
- RQD Rock Quality Designation (%)
- TCR Total Core Recovery (%)

ROCK STRENGTH
- EH Extremly High
- VH Very High
- H High
- M Medium
- L Low
- VL Very Low

ROCK WEATHERING
- FR Fresh
- SW Slightly Weathered
- DW Distinctly Weathered
- MW Moderately Weathered
- HW Highly Weathered
- XW Extremly Weathered

DEFECT TYPE
- JT Joint
- SZ Sheared zone
- BP Bedding Parting
- SM Seam
- FL Foliation
- VN Vein
- CL Cleavage
- CS Crushed Seam
- FZ Fracture Zone
- DL Drift Lift
- HB Handing Break
- DB Drilling Break

PLANARITY
- CU Curved
- DIS Discontinuous
- IR Irregular
- PR Planar
- ST Stepped
- UN Undulose

ROUGHNESS
- VR Very Rough
- RF Rough
- S Smooth
- SL Slockensided
- POL Polished

COATING
- CN Clean
- SN Stained
- VNR Veneer (thin or patchy)
- CT Coating (up to 1mm)

INFILL MATERIALS
- X Carbonaceus
- MU Unidentified minteral
- MS Secondary mineral
- KT Chlorite
- CA Calcite
- Fe Iron Oxide
- Qz Quartz

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO CORED BOREHOLE 8202118201 LOGS.GPJ <<DrawingFile>> 05/07/2021 12:42 10.02.00.04 Datgel AGS RTA, Photo, Monitoring Tools

BOREHOLE LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: BH05

Job No: 8202118201 **Sheet:** 1 of 1

Position: **Angle from Horizontal:** 90° **Surface Elevation:**
Rig Type: Hanjin D&B 8D **Mounting:** Track **Driller:** CM
Casing Diameter: **Contractor:** Total Drilling
Data Started: 21/6/21 **Date Completed:** 21/6/21 **Logged By:** BA **Checked By:** DR

Drilling			Water	Sampling & Testing		Depth (m)	Material Description					
Method	Resistance	Casing		Sample or Field Test	(blows per 150 mm) 1 3 6 12		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
AD/T	H		Not Encountered						0.05m ASPHALT: 0.05m thick, no odour observed			FILL
	F			ES 0.10 m PID 0.10 m 0.4 ppm				GC	FILL: Clayey Sandy GRAVEL: fine to medium, angular, grey to dark grey, fine to coarse grained sand, no odour observed 0.40m	D		0.05 m: Roadbase Material
	E			ES 0.50 m SPT 0.50 - 0.95 m 6, 5, 5 N=10 PID 0.50 m 0.7 ppm		0.5		CL	FILL: Gravelly Sandy CLAY: low plasticity, brown, fine to coarse grained sand, fine to coarse gravel, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (<PL)		
				D 1.20 - 1.50 m		1.0						
				SPT 1.50 - 1.95 m 4, 4, 5 N=9		1.5			1.70m			
	F					2.0		CI	Sandy CLAY: orange-brown, fine to coarse grained, sub-rounded to sub-angular sand, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (<PL)	VSt	RESIDUAL SOIL
						2.5			2.50m			
	H			D 2.50 - 2.70 m				SC	Clayey Gravelly SAND: fine to coarse grained, sub-rounded to sub-angular, mottled red-brown and grey, fine to coarse, sub-angular to sub-rounded gravel, no odour observed 2.75m	M	D - VD	EXTREMELY WEATHERED
	VH								TERMINATED AT 2.75 m Refusal TC-Bit Auger Refusal			
						3.0						
						3.5						

METHOD
EX Excavator bucket
R Ripper
HA Hand auger
PT Push tube
SON Sonic drilling
AH Air hammer
PS Percussion sampler
AS Short spiral auger
AD/V Solid flight auger: V-Bit
AD/T Solid flight auger: TC-Bit
HFA Hollow flight auger
WB Washbore drilling
RR Rock roller

PENETRATION
VE Very Easy (No Resistance)
E Easy
F Firm
H Hard
VH Very Hard (Refusal)

WATER
Water Level on Date shown
water inflow
water outflow

FIELD TESTS
SPT - Standard Penetration Test
HP - Hand/Pocket Penetrometer
DCP - Dynamic Cone Penetrometer
PSP - Perth Sand Penetrometer
MC - Moisture Content
PBT - Plate Bearing Test
IMP - Borehole Impression Test
PID - Photoionisation Detector
VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
B - Bulk disturbed sample
D - Disturbed sample
ES - Environmental sample
U - Thin wall tube 'undisturbed'

MOISTURE
D - Dry
M - Moist
W - Wet
PL - Plastic limit
LL - Liquid limit
w - Moisture content

SOIL CONSISTENCY
VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard

RELATIVE DENSITY
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO NON-CORED 8202118201_CONTAMLOGS.GPJ <<DrawingFile>> 13/07/2021 14:59 10.00.01.07 Datgel AGS RTA, Photo, Monitoring Tools

Cardno

BOREHOLE LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: BH06

Job No: 8202118201 **Sheet:** 1 of 1

Position: **Angle from Horizontal:** 90° **Surface Elevation:**
Rig Type: Hanjin D&B 8D **Mounting:** Track **Driller:** CM
Casing Diameter: **Contractor:** Total Drilling
Data Started: 22/6/21 **Date Completed:** 22/6/21 **Logged By:** BA **Checked By:** DR

Drilling			Water	Sampling & Testing	Depth (m)	Material Description					
Method	Resistance	Casing		Sample or Field Test		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
AD/T	H		Not Encountered		0			ASPHALT: 0.05m thick, no odour observed 0.10m			FILL
	F			ES 0.10 m PID 0.10 m 0.4 ppm			GC	FILL: Clayey Sandy GRAVEL: fine to medium, angular, grey to dark grey, fine to coarse grained sand, no odour observed 0.30m	M		
	E			ES 0.50 m SPT 0.50 - 0.95 m 3, 4, 4 N=8 PID 0.50 m 0.8 ppm	0.5		CI	Sandy CLAY: mottled orange-brown, red-brown and grey, fine to coarse grained, sub-rounded to sub-angular sand, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (<PL)	St	RESIDUAL SOIL
	F			D 1.20 - 1.50 m	1.0						
	H			SPT 1.50 - 1.64 m 25/140mm N=R	1.5		SC	Clayey Gravelly SAND: fine to coarse grained, sub-rounded to sub-angular, orange-brown, fine to coarse, sub-angular to sub-rounded gravel, no odour observed 1.80m	M	D - VD	EXTREMELY WEATHERED
	VH							TERMINATED AT 1.80 m Refusal TC-Bit Auger Refusal			
					2.0						
					2.5						
					3.0						
					3.5						

METHOD
EX Excavator bucket
R Ripper
HA Hand auger
PT Push tube
SON Sonic drilling
AH Air hammer
PS Percussion sampler
AS Short spiral auger
AD/V Solid flight auger: V-Bit
AD/T Solid flight auger: TC-Bit
HFA Hollow flight auger
WB Washbore drilling
RR Rock roller

PENETRATION
VE Very Easy (No Resistance)
E Easy
F Firm
H Hard
VH Very Hard (Refusal)

WATER
Water Level on Date shown
water inflow
water outflow

FIELD TESTS
SPT - Standard Penetration Test
HP - Hand/Pocket Penetrometer
DCP - Dynamic Cone Penetrometer
PSP - Perth Sand Penetrometer
MC - Moisture Content
PBT - Plate Bearing Test
IMP - Borehole Impression Test
PID - Photoionisation Detector
VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
B - Bulk disturbed sample
D - Disturbed sample
ES - Environmental sample
U - Thin wall tube 'undisturbed'

MOISTURE
D - Dry
M - Moist
W - Wet
PL - Plastic limit
LL - Liquid limit
w - Moisture content

SOIL CONSISTENCY
VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard

RELATIVE DENSITY
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO NON-CORED 8202118201_CONTAMLOGS.GPJ <<DrawingFile>> 13/07/2021 14:59 10.00.01.07 Datgel AGS RTA, Photo, Monitoring Tools

HAND AUGER SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: HA01

Job No: 8202118201 **Sheet:** 1 of 1

Position: **Angle from Horizontal:** 90° **Surface Elevation:**

Equipment: Hand Auger

Casing Diameter: **Contractor:** Cardno

Data Started: 17/6/21 **Logged By:** CL **Checked By:** CC

Drilling			Water	Sampling & Testing	Depth (m)	Material Description					
Method	Resistance	Casing		Sample or Field Test		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
HA			Not Encountered	ES 0.10 m PID 0.10 m 0.5 ppm	0.5		CL	FILL: Silty CLAY: low plasticity, dark brown, trace fine to coarse, sub-angular to sub-rounded gravel, no odour observed	M		FILL 0.00 m: Organic matter (grass and rootlets)
								0.40m			
							SC	0.50m FILL: Clayey SAND: fine to coarse grained, well graded, sub-rounded to sub-angular, light brown / orange, low to medium plasticity clay, no odour observed	M		
				ES 0.50 m PID 0.50 m 0.3 ppm				TERMINATED AT 0.50 m Refusal Hand Auger Refusal			
					1.0						
					1.5						
					2.0						
					2.5						
					3.0						
					3.5						

METHOD

EX	Excavator bucket
R	Ripper
HA	Hand auger
PT	Push tube
SON	Sonic drilling
AH	Air hammer
PS	Percussion sampler
AS	Short spiral auger
AD/V	Solid flight auger: V-Bit
AD/T	Solid flight auger: TC-Bit
HFA	Hollow flight auger
WB	Washbore drilling
RR	Rock roller

PENETRATION

VE	Very Easy (No Resistance)
E	Easy
F	Firm
H	Hard
VH	Very Hard (Refusal)

WATER

Water Level on Date shown
water inflow
water outflow

FIELD TESTS

SPT	-	Standard Penetration Test
HP	-	Hand/Pocket Penetrometer
DCP	-	Dynamic Cone Penetrometer
PSP	-	Perth Sand Penetrometer
MC	-	Moisture Content
PBT	-	Plate Bearing Test
IMP	-	Borehole Impression Test
PID	-	Photoionisation Detector
VS	-	Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES

B	-	Bulk disturbed sample
D	-	Disturbed sample
ES	-	Environmental sample
U	-	Thin wall tube 'undisturbed'

MOISTURE

D	-	Dry
M	-	Moist
W	-	Wet
PL	-	Plastic limit
LL	-	Liquid limit
w	-	Moisture content

SOIL CONSISTENCY

VS	-	Very Soft
S	-	Soft
F	-	Firm
St	-	Stiff
VSt	-	Very Stiff
H	-	Hard

RELATIVE DENSITY

VL	-	Very Loose
L	-	Loose
MD	-	Medium Dense
D	-	Dense
VD	-	Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO NON-CORED 8202118201_CONTAMLOGS.GPJ <<DrawingFile>> 13/07/2021 14:59 10.00.01.07 Datgel AGS RTA, Photo, Monitoring Tools

HAND AUGER SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: HA02

Job No: 8202118201 **Sheet:** 1 of 1

Position: **Angle from Horizontal:** 90° **Surface Elevation:**

Equipment: Hand Auger

Casing Diameter: **Contractor:** Cardno

Data Started: 17/6/21 **Logged By:** CL **Checked By:** CC

Drilling			Water	Sampling & Testing	Depth (m)	Material Description					
Method	Resistance	Casing		Sample or Field Test		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
HA			Not Encountered	ES 0.10 m PID 0.10 m 0.3 ppm			CL	FILL: Silty CLAY: low plasticity, dark brown, trace fine to coarse, sub-angular to sub-rounded gravel, no odour observed	M		FILL 0.00 m: Organic matter (grass and rootlets)
				ES 0.50 m PID 0.50 m 0.2 ppm	0.5			0.60m			
							CL	FILL: Silty Sandy CLAY: low plasticity, dark brown, fine to coarse grained sand, trace fine to coarse, sub-angular to sub-rounded gravel, trace fine to coarse, sub-angular to sub-rounded cobbles, no odour observed	M		0.60 m: Increasing amount of sandstone gravels towards base
								0.90m			
				ES 0.90 m PID 0.90 m 0.2 ppm	1.0			TERMINATED AT 0.90 m Refusal Hand Auger Refusal			0.90 m: Hole 1 - Refusal at 0.9m, hole moved 2m east. Hole 2 - Refusal at 0.9m on suspected boulder / rock
					1.5						
					2.0						
					2.5						
					3.0						
					3.5						

METHOD
EX Excavator bucket
R Ripper
HA Hand auger
PT Push tube
SON Sonic drilling
AH Air hammer
PS Percussion sampler
AS Short spiral auger
AD/V Solid flight auger: V-Bit
AD/T Solid flight auger: TC-Bit
HFA Hollow flight auger
WB Washbore drilling
RR Rock roller

PENETRATION
VE Very Easy (No Resistance)
E Easy
F Firm
H Hard
VH Very Hard (Refusal)

WATER
Water Level on Date shown
water inflow
water outflow

FIELD TESTS
SPT - Standard Penetration Test
HP - Hand/Pocket Penetrometer
DCP - Dynamic Cone Penetrometer
PSP - Perth Sand Penetrometer
MC - Moisture Content
PBT - Plate Bearing Test
IMP - Borehole Impression Test
PID - Photoionisation Detector
VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
B - Bulk disturbed sample
D - Disturbed sample
ES - Environmental sample
U - Thin wall tube 'undisturbed'

MOISTURE
D - Dry
M - Moist
W - Wet
PL - Plastic limit
LL - Liquid limit
w - Moisture content

SOIL CONSISTENCY
VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard

RELATIVE DENSITY
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO NON-CORED 8202118201_CONTAMLOGS.GPJ <<DrawingFile>> 13/07/2021 14:59 10.00.01.07 Datgel AGS RTA, Photo, Monitoring Tools

Cardno

HAND AUGER SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: HA03

Job No: 8202118201 **Sheet:** 1 of 1

Position: **Angle from Horizontal:** 90° **Surface Elevation:**

Equipment: Hand Auger

Casing Diameter: **Contractor:** Cardno

Data Started: 17/6/21 **Logged By:** CL **Checked By:** CC

Drilling			Water	Sampling & Testing	Depth (m)	Material Description					
Method	Resistance	Casing		Sample or Field Test		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
HA			Not Encountered	ES 0.10 m QA/QC101 PID 0.10 m 0.3 ppm	0		CL	FILL: Silty CLAY: low plasticity, dark brown, trace fine to coarse, sub-angular to sub-rounded gravel, no odour observed	M		FILL 0.00 m: Organic matter (grass and rootlets)
				ES 0.50 m PID 0.50 m 0.2 ppm	0.5		CL	0.50m FILL: Silty Sandy CLAY: low plasticity, light brown with mottled orange and red, fine to coarse grained sand, with fine to coarse, sub-angular to sub-rounded gravel, with fine to coarse, sub-angular to sub-rounded cobbles, no odour observed 0.60m TERMINATED AT 0.60 m Refusal Hand Auger Refusal	M		
					1.0						
					1.5						
					2.0						
					2.5						
					3.0						
					3.5						

METHOD
EX Excavator bucket
R Ripper
HA Hand auger
PT Push tube
SON Sonic drilling
AH Air hammer
PS Percussion sampler
AS Short spiral auger
AD/V Solid flight auger: V-Bit
AD/T Solid flight auger: TC-Bit
HFA Hollow flight auger
WB Washbore drilling
RR Rock roller

PENETRATION
VE Very Easy (No Resistance)
E Easy
F Firm
H Hard
VH Very Hard (Refusal)

WATER
Water Level on Date shown
water inflow
water outflow

FIELD TESTS
SPT - Standard Penetration Test
HP - Hand/Pocket Penetrometer
DCP - Dynamic Cone Penetrometer
PSP - Perth Sand Penetrometer
MC - Moisture Content
PBT - Plate Bearing Test
IMP - Borehole Impression Test
PID - Photoionisation Detector
VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
B - Bulk disturbed sample
D - Disturbed sample
ES - Environmental sample
U - Thin wall tube 'undisturbed'

MOISTURE
D - Dry
M - Moist
W - Wet
PL - Plastic limit
LL - Liquid limit
w - Moisture content

SOIL CONSISTENCY
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S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard

RELATIVE DENSITY
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

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HAND AUGER SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: HA04

Job No: 8202118201 **Sheet:** 1 of 1

Position: **Angle from Horizontal:** 90° **Surface Elevation:**

Equipment: Hand Auger

Casing Diameter: **Contractor:** Cardno

Data Started: 17/6/21 **Logged By:** CL **Checked By:** CC

Drilling			Water	Sampling & Testing	Depth (m)	Material Description					
Method	Resistance	Casing		Sample or Field Test		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
HA			Not Encountered	ES 0.10 m PID 0.10 m 0.8 ppm	0.5		ML	FILL: CLAY: low plasticity, dark brown, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	D to M		FILL 0.00 m: Organic matter (grass and rootlets)
								0.30m			
							SP	FILL: Gravelly SAND: fine to coarse grained, gap graded, sub-rounded to sub-angular, orange / brown, fine to coarse, sub-rounded to sub-angular gravel, with fine to coarse, sub-rounded to sub-angular gravel, no odour observed			
				ES 0.50 m PID 0.50 m 0.4 ppm				0.50m TERMINATED AT 0.50 m Refusal Hand Auger Refusal			
					1.0						
					1.5						
					2.0						
					2.5						
					3.0						
					3.5						

METHOD
- EX Excavator bucket
- R Ripper
- HA Hand auger
- PT Push tube
- SON Sonic drilling
- AH Air hammer
- PS Percussion sampler
- AS Short spiral auger
- AD/V Solid flight auger: V-Bit
- AD/T Solid flight auger: TC-Bit
- HFA Hollow flight auger
- WB Washbore drilling
- RR Rock roller

PENETRATION
- VE Very Easy (No Resistance)
- E Easy
- F Firm
- H Hard
- VH Very Hard (Refusal)

WATER
- Water Level on Date shown
- water inflow
- water outflow

FIELD TESTS
- SPT - Standard Penetration Test
- HP - Hand/Pocket Penetrometer
- DCP - Dynamic Cone Penetrometer
- PSP - Perth Sand Penetrometer
- MC - Moisture Content
- PBT - Plate Bearing Test
- IMP - Borehole Impression Test
- PID - Photoionisation Detector
- VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
- B - Bulk disturbed sample
- D - Disturbed sample
- ES - Environmental sample
- U - Thin wall tube 'undisturbed'

MOISTURE
- D - Dry
- M - Moist
- W - Wet
- PL - Plastic limit
- LL - Liquid limit
- *w* - Moisture content

SOIL CONSISTENCY
- VS - Very Soft
- S - Soft
- F - Firm
- St - Stiff
- VSt - Very Stiff
- H - Hard

RELATIVE DENSITY
- VL - Very Loose
- L - Loose
- MD - Medium Dense
- D - Dense
- VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

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TEST PIT LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: TP02

Job No: 8202118201 **Sheet:** 1 of 1

Position: **Angle from Horizontal:** 90° **Surface Elevation:**

Machine Type: Backhoe **Excavation Method:** Excavator Bucket

Excavation Dimensions: 1.50m LONG AND 0.50m WIDE **Contractor:** Lynch Civil

Date Excavated: 17/6/21 **Logged By:** BA **Checked By:** DR

Excavation				Sampling & Testing		Depth (m)	Material Description					
Method	Resistance	Stability	Water	Sample or Field Test	(blows per 150 mm) 1 3 6 12		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
EX	E	Stable	Not Encountered	D 0.10 - 0.20 m ES 0.10 m PID 0.10 m 0.4 ppm		0.5		ML	FILL: Sandy SILT: low plasticity, dark brown, fine to coarse grained sand, trace fine gravel, no odour observed	M (<PL)		FILL 0.00 m: Organic matter (grass and rootlets), trace plastic and river stones observed
									0.20m			
								SC	FILL: Clayey SAND: fine to coarse grained, orange-brown, no odour observed	M		
									0.50m			
	F			ES 0.50 m PID 0.50 m 1.1 ppm PP 0.70 m =200 - 250 kPa		1.0		CI	Sandy CLAY: medium plasticity, mottled orange-brown, red-brown and grey, fine to coarse grained, sub-rounded to sub-angular sand, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (>PL)	St	RESIDUAL SOIL
				ES 1.00 m PID 1.00 m 1.7 ppm					1.10m			
	H			D 1.20 - 0.40 m				SC	Clayey Gravelly SAND: fine to coarse grained, sub-rounded to sub-angular, mottled red-brown and grey, fine to coarse, sub-angular to sub-rounded gravel, no odour observed	M	D - VD	EXTREMELY WEATHERED
	VH								1.40m			
					25/90mm R	1.5			TERMINATED AT 1.40 m Refusal Backhoe Bucket Refusal			
						2.0						
						2.5						
						3.0						
						3.5						

METHOD
EX Excavator bucket
R Ripper
HA Hand auger
PT Push tube
SON Sonic drilling
AH Air hammer
PS Percussion sampler
AS Short spiral auger
AD/V Solid flight auger: V-Bit
AD/T Solid flight auger: TC-Bit
HFA Hollow flight auger
WB Washbore drilling
RR Rock roller

PENETRATION
VE Very Easy (No Resistance)
E Easy
F Firm
H Hard
VH Very Hard (Refusal)

WATER
Water Level on Date shown
water inflow
water outflow

FIELD TESTS
SPT - Standard Penetration Test
HP - Hand/Pocket Penetrometer
DCP - Dynamic Cone Penetrometer
PSP - Perth Sand Penetrometer
MC - Moisture Content
PBT - Plate Bearing Test
IMP - Borehole Impression Test
PID - Photoionisation Detector
VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
B - Bulk disturbed sample
D - Disturbed sample
ES - Environmental sample
U - Thin wall tube 'undisturbed'

MOISTURE
D - Dry
M - Moist
W - Wet
PL - Plastic limit
LL - Liquid limit
w - Moisture content

SOIL CONSISTENCY
VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard

RELATIVE DENSITY
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

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TEST PIT LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: TP03

Job No: 8202118201 **Sheet:** 1 of 1

Position: **Angle from Horizontal:** 90° **Surface Elevation:**

Machine Type: Backhoe **Excavation Method:** Excavator Bucket

Excavation Dimensions: 1.50m LONG AND 0.50m WIDE **Contractor:** Lynch Civil

Date Excavated: 17/6/21 **Logged By:** BA **Checked By:** DR

Excavation			Water	Sampling & Testing		Depth (m)	Material Description					
Method	Resistance	Stability		Sample or Field Test	(blows per 150 mm) 1 3 6 12		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
EX	E	Stable	Not Encountered	ES 0.10 m PID 0.10 m 0.5 ppm		0		SM	FILL: Silty SAND: fine to coarse grained, dark grey, no odour observed			FILL 0.00 m: Organic matter (grass and rootlets) and trace creamics observed
									0.30m			
				ES 0.50 m PID 0.50 m 0.8 ppm		0.5		SC	FILL: Clayey SAND: fine to coarse grained, orange-brown, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M		
	F			ES 1.00 m PP 1.00 m =200 - 250 kPa PID 1.00 m 0.3 ppm	11/30mm R	1.0			0.90m			
				D 1.40 - 1.60 m		1.5		Cl	Sandy CLAY: medium plasticity, mottled orange-brown, red-brown and grey, fine to coarse grained, sub-rounded to sub-angular sand, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (<PL)	VSt	RESIDUAL SOIL
	H								1.70m			
	VH			D 1.80 - 1.90 m				SC	Clayey Gravelly SAND: fine to coarse grained, sub-rounded to sub-angular, mottled red-brown and grey, fine to coarse, sub-angular to sub-rounded gravel, no odour observed	D - M	D - VD	EXTREMELY WEATHERED
						2.0			1.90m			
						2.5			TERMINATED AT 1.90 m Refusal Backhoe Bucket Refusal			
						3.0						
						3.5						

METHOD
- EX Excavator bucket
- R Ripper
- HA Hand auger
- PT Push tube
- SON Sonic drilling
- AH Air hammer
- PS Percussion sampler
- AS Short spiral auger
- AD/V Solid flight auger: V-Bit
- AD/T Solid flight auger: TC-Bit
- HFA Hollow flight auger
- WB Washbore drilling
- RR Rock roller

PENETRATION
- VE Very Easy (No Resistance)
- E Easy
- F Firm
- H Hard
- VH Very Hard (Refusal)

WATER
- Water Level on Date shown
- water inflow
- water outflow

FIELD TESTS
- SPT - Standard Penetration Test
- HP - Hand/Pocket Penetrometer
- DCP - Dynamic Cone Penetrometer
- PSP - Perth Sand Penetrometer
- MC - Moisture Content
- PBT - Plate Bearing Test
- IMP - Borehole Impression Test
- PID - Photoionisation Detector
- VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
- B - Bulk disturbed sample
- D - Disturbed sample
- ES - Environmental sample
- U - Thin wall tube 'undisturbed'

MOISTURE
- D - Dry
- M - Moist
- W - Wet
- PL - Plastic limit
- LL - Liquid limit
- *w* - Moisture content

SOIL CONSISTENCY
- VS - Very Soft
- S - Soft
- F - Firm
- St - Stiff
- VSt - Very Stiff
- H - Hard

RELATIVE DENSITY
- VL - Very Loose
- L - Loose
- MD - Medium Dense
- D - Dense
- VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

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Cardno

TEST PIT LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: TP04

Job No: 8202118201 **Sheet:** 1 of 1

Position: **Angle from Horizontal:** 90° **Surface Elevation:**

Machine Type: Backhoe **Excavation Method:** Excavator Bucket

Excavation Dimensions: 1.50m LONG AND 0.50m WIDE **Contractor:** Lynch Civil

Date Excavated: 17/6/21 **Logged By:** BA **Checked By:** DR

Excavation			Water	Sampling & Testing		Depth (m)	Material Description					
Method	Resistance	Stability		Sample or Field Test	(blows per 150 mm) 1 3 6 12		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
EX	E	Stable	Not Encountered	D 0.10 - 0.20 m ES 0.10 m PID 0.10 m 1.1 ppm		0.5		SM	FILL: Silty SAND: fine to coarse grained, dark grey, no odour observed	M		FILL 0.00 m: Organic matter (grass and rootlets)
									0.30m FILL: Clayey SAND: fine to coarse grained, orange-brown, trace fine to coarse, sub-angular to sub-rounded gravel, no odour observed			
				ES 0.50 m PID 0.50 m 1.5 ppm				SC	0.70m			
	F					1.0			Sandy CLAY: medium plasticity, mottled orange-brown, red-brown and grey, fine to coarse grained, sub-rounded to sub-angular sand, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (>PL)	F St	RESIDUAL SOIL
				D 1.00 - 1.20 m ES 1.00 m PID 1.00 m 1.1 ppm				CI	1.50m			
	H			D 1.50 - 1.60 m		1.5		SC	Clayey Gravelly SAND: fine to coarse grained, sub-rounded to sub-angular, mottled red-brown and grey, fine to coarse, sub-angular to sub-rounded gravel, no odour observed	M	D - VD	EXTREMELY WEATHERED
	VH								1.80m			
					10/14 mm R	2.0			TERMINATED AT 1.80 m Refusal Backhoe Bucket Refusal			
						2.5						
						3.0						
						3.5						

METHOD
- EX Excavator bucket
- R Ripper
- HA Hand auger
- PT Push tube
- SON Sonic drilling
- AH Air hammer
- PS Percussion sampler
- AS Short spiral auger
- AD/V Solid flight auger: V-Bit
- AD/T Solid flight auger: TC-Bit
- HFA Hollow flight auger
- WB Washbore drilling
- RR Rock roller

PENETRATION
- VE Very Easy (No Resistance)
- E Easy
- F Firm
- H Hard
- VH Very Hard (Refusal)

WATER
- Water Level on Date shown
- water inflow
- water outflow

FIELD TESTS
- SPT - Standard Penetration Test
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- PSP - Perth Sand Penetrometer
- MC - Moisture Content
- PBT - Plate Bearing Test
- IMP - Borehole Impression Test
- PID - Photoionisation Detector
- VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
- B - Bulk disturbed sample
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MOISTURE
- D - Dry
- M - Moist
- W - Wet
- PL - Plastic limit
- LL - Liquid limit
- *w* - Moisture content

SOIL CONSISTENCY
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- S - Soft
- F - Firm
- St - Stiff
- VSt - Very Stiff
- H - Hard

RELATIVE DENSITY
- VL - Very Loose
- L - Loose
- MD - Medium Dense
- D - Dense
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Cardno

TEST PIT LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: TP05

Job No: 8202118201 **Sheet:** 1 of 1

Position: **Angle from Horizontal:** 90° **Surface Elevation:**

Machine Type: Backhoe **Excavation Method:** Excavator Bucket

Excavation Dimensions: 1.50m LONG AND 0.50m WIDE **Contractor:** Lynch Civil

Date Excavated: 17/6/21 **Logged By:** BA **Checked By:** DR

Excavation			Water	Sampling & Testing		Depth (m)	Material Description					
Method	Resistance	Stability		Sample or Field Test	(blows per 150 mm) 1 3 6 12		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
EX	E	Stable	Not Encountered	ES 0.10 m PID 0.10 m 1 ppm D 0.20 - 0.40 m		0.5		SM	FILL: Silty SAND: fine to coarse grained, dark grey and dark brown, no odour observed			FILL 0.00 m: Organic matter (grass and rootlets), trace ceramics and charcoal observed
				ES 0.50 m PID 0.50 m 1.2 ppm D 0.60 - 0.80 m				SC	0.50m FILL: Clayey SAND: fine to coarse grained, orange-brown, trace fine to coarse, sub-angular to sub-rounded gravel, trace rootlets, no odour observed			
	F			ES 1.00 m PID 1.00 m 0.5 ppm PP 1.20 m =300 - 350 kPa		1.0		CI	1.00m Sandy CLAY: medium plasticity, mottled orange-brown, red-brown and grey, fine to coarse grained, sub-rounded to sub-angular sand, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (>PL)	St	RESIDUAL SOIL
	VH				10/10mm R	1.5			1.50m TERMINATED AT 1.50 m Refusal Backhoe Bucket Refusal	M (<PL)	VSt	
						2.0						
						2.5						
						3.0						
						3.5						

METHOD
EX Excavator bucket
R Ripper
HA Hand auger
PT Push tube
SON Sonic drilling
AH Air hammer
PS Percussion sampler
AS Short spiral auger
AD/V Solid flight auger: V-Bit
AD/T Solid flight auger: TC-Bit
HFA Hollow flight auger
WB Washbore drilling
RR Rock roller

PENETRATION
VE Very Easy (No Resistance)
E Easy
F Firm
H Hard
VH Very Hard (Refusal)

WATER
Water Level on Date shown
water inflow
water outflow

FIELD TESTS
SPT - Standard Penetration Test
HP - Hand/Pocket Penetrometer
DCP - Dynamic Cone Penetrometer
PSP - Perth Sand Penetrometer
MC - Moisture Content
PBT - Plate Bearing Test
IMP - Borehole Impression Test
PID - Photoionisation Detector
VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
B - Bulk disturbed sample
D - Disturbed sample
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U - Thin wall tube 'undisturbed'

MOISTURE
D - Dry
M - Moist
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PL - Plastic limit
LL - Liquid limit
w - Moisture content

SOIL CONSISTENCY
VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard

RELATIVE DENSITY
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

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TEST PIT LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: TP06

Job No: 8202118201 **Sheet:** 1 of 1

Position: **Angle from Horizontal:** 90° **Surface Elevation:**

Machine Type: Backhoe **Excavation Method:** Excavator Bucket

Excavation Dimensions: 1.50m LONG AND 0.50m WIDE **Contractor:** Lynch Civil

Date Excavated: 17/6/21 **Logged By:** BA **Checked By:** DR

Excavation			Water	Sampling & Testing		Depth (m)	Material Description					
Method	Resistance	Stability		Sample or Field Test	(blows per 150 mm) 1 3 6 12		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
EX	E	Stable	Not Encountered	ES 0.10 m PID 0.10 m 0.5 ppm		0		SM	FILL: Silty SAND: fine to coarse grained, dark grey, no odour observed			FILL 0.00 m: Organic matter (grass and rootlets)
									0.20m			
								SC	FILL: Clayey SAND: fine to coarse grained, orange-brown, trace fine to coarse, sub-angular to sub-rounded gravel, no odour observed	M		
						0.5			0.50m			
	F			ES 0.50 m PID 0.50 m 0.8 ppm				CI	Sandy CLAY: medium plasticity, mottled orange-brown, red-brown and grey, fine to coarse grained, sub-rounded to sub-angular sand, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (>PL)	St	RESIDUAL SOIL
				D 1.00 - 1.20 m ES 1.00 m PP 1.00 m =200 - 250 kPa PID 1.00 m 0.7 ppm		1.0						
						1.5				M (<PL)	VSt	
									2.00m			
	H			PP 2.00 m =250 - 300 kPa		2.0		SC	Clayey Gravelly SAND: fine to coarse grained, sub-rounded to sub-angular, mottled red-brown and grey, fine to coarse, sub-angular to sub-rounded gravel, no odour observed	M	VD	EXTREMELY WEATHERED
	VH				25/90mm R				2.40m			
						2.5			TERMINATED AT 2.40 m Refusal Backhoe Bucket Refusal			
						3.0						
						3.5						

METHOD
EX Excavator bucket
R Ripper
HA Hand auger
PT Push tube
SON Sonic drilling
AH Air hammer
PS Percussion sampler
AS Short spiral auger
AD/V Solid flight auger: V-Bit
AD/T Solid flight auger: TC-Bit
HFA Hollow flight auger
WB Washbore drilling
RR Rock roller

PENETRATION
VE Very Easy (No Resistance)
E Easy
F Firm
H Hard
VH Very Hard (Refusal)

WATER
Water Level on Date shown
water inflow
water outflow

FIELD TESTS
SPT - Standard Penetration Test
HP - Hand/Pocket Penetrometer
DCP - Dynamic Cone Penetrometer
PSP - Perth Sand Penetrometer
MC - Moisture Content
PBT - Plate Bearing Test
IMP - Borehole Impression Test
PID - Photoionisation Detector
VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
B - Bulk disturbed sample
D - Disturbed sample
ES - Environmental sample
U - Thin wall tube 'undisturbed'

MOISTURE
D - Dry
M - Moist
W - Wet
PL - Plastic limit
LL - Liquid limit
w - Moisture content

SOIL CONSISTENCY
VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard

RELATIVE DENSITY
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO NON-CORED 8202118201_CONTAMLOGS.GPJ <<DrawingFile>> 13/07/2021 15:00 10.00.01.07 Datgel AGS RTA, Photo, Monitoring Tools

TEST PIT LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: TP07

Job No: 8202118201 **Sheet:** 1 of 1

Position: **Angle from Horizontal:** 90° **Surface Elevation:**

Machine Type: Backhoe **Excavation Method:** Excavator Bucket

Excavation Dimensions: 1.50m LONG AND 0.50m WIDE **Contractor:** Lynch Civil

Date Excavated: 17/6/21 **Logged By:** BA **Checked By:** DR

Excavation			Water	Sampling & Testing		Depth (m)	Material Description					
Method	Resistance	Stability		Sample or Field Test	(blows per 150 mm) 1 3 6 12		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
EX	E	Stable	Not Encountered	ES 0.10 m PID 0.10 m 0.6 ppm		0		SM	FILL: Silty SAND: fine to coarse grained, dark brown, no odour observed	M		FILL 0.00 m: Organic matter (grass and rootlets)
									0.30m			
	F			D 0.40 - 0.60 m ES 0.50 m PID 0.50 m 0.9 ppm		0.5		CI	Sandy CLAY: medium plasticity, mottled orange-brown, red-brown and grey, fine to coarse grained, sub-rounded to sub-angular sand, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (<PL)	F St	RESIDUAL SOIL
									0.90m	M (<PL)	VSt	
	H			D 1.00 - 1.20 m	9/40mm R	1.0		SC	Clayey Gravelly SAND: fine to coarse grained, sub-rounded to sub-angular, mottled red-brown and grey, fine to coarse, sub-angular to sub-rounded gravel, no odour observed	M (<PL)	H	EXTREMELY WEATHERED
	VH								1.40m			
						1.5			TERMINATED AT 1.40 m Refusal Backhoe Bucket Refusal			
						2.0						
						2.5						
						3.0						
						3.5						

METHOD
- EX Excavator bucket
- R Ripper
- HA Hand auger
- PT Push tube
- SON Sonic drilling
- AH Air hammer
- PS Percussion sampler
- AS Short spiral auger
- AD/V Solid flight auger: V-Bit
- AD/T Solid flight auger: TC-Bit
- HFA Hollow flight auger
- WB Washbore drilling
- RR Rock roller

PENETRATION
- VE Very Easy (No Resistance)
- E Easy
- F Firm
- H Hard
- VH Very Hard (Refusal)

WATER
- Water Level on Date shown
- water inflow
- water outflow

FIELD TESTS
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- DCP - Dynamic Cone Penetrometer
- PSP - Perth Sand Penetrometer
- MC - Moisture Content
- PBT - Plate Bearing Test
- IMP - Borehole Impression Test
- PID - Photoionisation Detector
- VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
- B - Bulk disturbed sample
- D - Disturbed sample
- ES - Environmental sample
- U - Thin wall tube 'undisturbed'

MOISTURE
- D - Dry
- M - Moist
- W - Wet
- PL - Plastic limit
- LL - Liquid limit
- *w* - Moisture content

SOIL CONSISTENCY
- VS - Very Soft
- S - Soft
- F - Firm
- St - Stiff
- VSt - Very Stiff
- H - Hard

RELATIVE DENSITY
- VL - Very Loose
- L - Loose
- MD - Medium Dense
- D - Dense
- VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO NON-CORED 8202118201_CONTAMLOGS.GPJ <<DrawingFile>> 13/07/2021 15:00 10.00.01.07 Datgel AGS RTA, Photo, Monitoring Tools

TEST PIT LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: TP08

Job No: 8202118201 **Sheet:** 1 of 1

Position: **Angle from Horizontal:** 90° **Surface Elevation:**

Machine Type: Backhoe **Excavation Method:** Excavator Bucket

Excavation Dimensions: 1.50m LONG AND 0.50m WIDE **Contractor:** Lynch Civil

Date Excavated: 17/6/21 **Logged By:** CL **Checked By:** CC

Excavation			Water	Sampling & Testing	Depth (m)	Material Description					
Method	Resistance	Stability		Sample or Field Test		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
EX		Stable	Not Encountered	ES 0.10 m PID 0.10 m 0.4 ppm	0.5		SM	FILL: Silty SAND: fine to coarse grained, dark brown, trace fine to coarse sub-rounded gravel, trace fine to coarse sub-rounded cobbles, no odour observed	D to M		FILL 0.00 m: Organic matter (grass and rootlets) Trace glass, brick and fine to coarse grained sandstone boulders observed Frequent wood observed
				ES 0.50 m PID 0.50 m 0.1 ppm				0.90m			
				ES 1.00 m PID 1.00 m 0.4 ppm	1.0		CI	Sandy CLAY: medium plasticity, pale brown to orange-brown, fine to coarse grained, sub-rounded to sub-angular sand, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M		RESIDUAL SOIL 0.90 m: Organic matter (grass and rootlets) Trace wood observed
								1.40m			
					1.5			TERMINATED AT 1.40 m Target depth Target Depth Reached			
					2.0						
					2.5						
					3.0						
					3.5						

METHOD
EX Excavator bucket
R Ripper
HA Hand auger
PT Push tube
SON Sonic drilling
AH Air hammer
PS Percussion sampler
AS Short spiral auger
AD/V Solid flight auger: V-Bit
AD/T Solid flight auger: TC-Bit
HFA Hollow flight auger
WB Washbore drilling
RR Rock roller

PENETRATION
VE Very Easy (No Resistance)
E Easy
F Firm
H Hard
VH Very Hard (Refusal)

WATER
Water Level on Date shown
water inflow
water outflow

FIELD TESTS
SPT - Standard Penetration Test
HP - Hand/Pocket Penetrometer
DCP - Dynamic Cone Penetrometer
PSP - Perth Sand Penetrometer
MC - Moisture Content
PBT - Plate Bearing Test
IMP - Borehole Impression Test
PID - Photoionisation Detector
VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
B - Bulk disturbed sample
D - Disturbed sample
ES - Environmental sample
U - Thin wall tube 'undisturbed'

MOISTURE
D - Dry
M - Moist
W - Wet
PL - Plastic limit
LL - Liquid limit
w - Moisture content

SOIL CONSISTENCY
VS - Very Soft
S - Soft
F - Firm
St - Stiff
VSt - Very Stiff
H - Hard

RELATIVE DENSITY
VL - Very Loose
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MD - Medium Dense
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Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

CARDNO 2.01.6 LIB.GLB Log CARDNO NON-CORED 8202118201_CONTAMLOGS.GPJ <<DrawingFile>> 13/07/2021 15:00 10.00.01.07 Datgel AGS RTA, Photo, Monitoring Tools

TEST PIT LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: TP09

Job No: 8202118201 **Sheet:** 1 of 1

Position: **Angle from Horizontal:** 90° **Surface Elevation:**

Machine Type: Backhoe **Excavation Method:** Excavator Bucket

Excavation Dimensions: 1.50m LONG AND 0.50m WIDE **Contractor:** Lynch Civil

Date Excavated: 17/6/21 **Logged By:** BA **Checked By:** DR

Excavation			Water	Sampling & Testing		Depth (m)	Material Description					
Method	Resistance	Stability		Sample or Field Test	(blows per 150 mm) 1 3 6 12		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
EX	E	Stable	Not Encountered	ES 0.10 m PID 0.10 m 0.1 ppm		0		SM	FILL: Silty SAND: fine to coarse grained, dark brown, trace fine to coarse sub-rounded gravel, trace fine to coarse sub-rounded cobbles, no odour observed	M		FILL 0.00 m: Organic matter (grass and rootlets) Trace lawn mat, plastic and aluminium foil observed
				D 0.40 - 0.50 m		0.5			0.80m			
				ES 0.50 m PID 0.50 m 0.4 ppm								
	F			D 1.00 - 1.20 m ES 1.00 m PID 1.00 m 0.3 ppm		1.0		Cl	Sandy CLAY: pale brown to orange-brown, fine to coarse grained, sub-rounded to sub-angular sand, trace fine to coarse, sub-rounded to sub-angular gravel, no odour observed	M (>PL)	St	RESIDUAL SOIL
									1.30m			
	H			D 1.50 - 1.70 m ES 1.50 m PID 1.50 m 0.3 ppm		1.5		SC	Clayey Gravelly SAND: fine to coarse grained, sub-rounded to sub-angular, mottled red-brown and grey, fine to coarse, sub-angular to sub-rounded gravel, no odour observed	M	D - VD	EXTREMELY WEATHERED
	VH								1.70m			
					Refusal	2.0			TERMINATED AT 1.70 m Refusal Backhoe Bucket Refusal			
						2.5						
						3.0						
						3.5						

METHOD
- EX Excavator bucket
- R Ripper
- HA Hand auger
- PT Push tube
- SON Sonic drilling
- AH Air hammer
- PS Percussion sampler
- AS Short spiral auger
- AD/V Solid flight auger: V-Bit
- AD/T Solid flight auger: TC-Bit
- HFA Hollow flight auger
- WB Washbore drilling
- RR Rock roller

PENETRATION
- VE Very Easy (No Resistance)
- E Easy
- F Firm
- H Hard
- VH Very Hard (Refusal)

WATER
- Water Level on Date shown
- water inflow
- water outflow

FIELD TESTS
- SPT - Standard Penetration Test
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- DCP - Dynamic Cone Penetrometer
- PSP - Perth Sand Penetrometer
- MC - Moisture Content
- PBT - Plate Bearing Test
- IMP - Borehole Impression Test
- PID - Photoionisation Detector
- VS - Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES
- B - Bulk disturbed sample
- D - Disturbed sample
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- U - Thin wall tube 'undisturbed'

MOISTURE
- D - Dry
- M - Moist
- W - Wet
- PL - Plastic limit
- LL - Liquid limit
- *w* - Moisture content

SOIL CONSISTENCY
- VS - Very Soft
- S - Soft
- F - Firm
- St - Stiff
- VSt - Very Stiff
- H - Hard

RELATIVE DENSITY
- VL - Very Loose
- L - Loose
- MD - Medium Dense
- D - Dense
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Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

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TEST PIT LOG SHEET

Client: NSW Health Infrastructure
Project: Shoalhaven Hospital
Location: Scenic Drive, Nowra NSW 2541

Hole No: TP10

Job No: 8202118201 **Sheet:** 1 of 1

Position: **Angle from Horizontal:** 90° **Surface Elevation:**

Machine Type: Backhoe **Excavation Method:** Excavator Bucket

Excavation Dimensions: 1.50m LONG AND 0.50m WIDE **Contractor:** Lynch Civil

Date Excavated: 17/6/21 **Logged By:** CL **Checked By:** CC

Excavation			Water	Sampling & Testing	Depth (m)	Material Description					
Method	Resistance	Stability		Sample or Field Test		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
EX		Stable	Not Encountered	ES 0.10 m QA/QC100 PID 0.10 m 0.2 ppm ES 0.30 m PID 0.30 m 0.7 ppm ES 1.00 m PID 1.00 m 0.3 ppm	0.5 1.0		SP-SC	0.05m ASPHALT: 0.05m thick, no odour observed FILL: Gravelly SAND: fine to coarse grained, gap graded, sub-rounded to sub-angular, orange / brown, fine to coarse grained, sub-rounded to sub-angular gravel, with fine to coarse grained, sub-rounded to sub-angular cobbles, no odour observed	D D to M		PAVEMENT FILL 0.05 m: Organic matter (grass and rootlets)
							SC	0.25m FILL: Clayey SAND: fine to coarse grained, well graded, sub-rounded to sub-angular, light brown, low to medium plasticity clay, trace fine to coarse grained, sub-rounded to sub-angular gravel, no odour observed	M		0.25 m: Organic matter (grass and rootlets)
							CL-CI	0.60m Sandy CLAY: low to medium plasticity, orange / brown, fine to coarse grained, sub-rounded to sub-angular sand, trace fine to coarse grained, sub-rounded to sub-angular gravel, no odour observed	M		RESIDUAL SOIL 0.60 m: Organic matter (rootlets) observed
					1.5 2.0 2.5 3.0 3.5			1.20m TERMINATED AT 1.20 m Target depth Target Depth Reached			

METHOD

EX	Excavator bucket
R	Ripper
HA	Hand auger
PT	Push tube
SON	Sonic drilling
AH	Air hammer
PS	Percussion sampler
AS	Short spiral auger
AD/V	Solid flight auger: V-Bit
AD/T	Solid flight auger: TC-Bit
HFA	Hollow flight auger
WB	Washbore drilling
RR	Rock roller

PENETRATION

VE	Very Easy (No Resistance)
E	Easy
F	Firm
H	Hard
VH	Very Hard (Refusal)

WATER

Water Level on Date shown
water inflow
water outflow

FIELD TESTS

SPT	-	Standard Penetration Test
HP	-	Hand/Pocket Penetrometer
DCP	-	Dynamic Cone Penetrometer
PSP	-	Perth Sand Penetrometer
MC	-	Moisture Content
PBT	-	Plate Bearing Test
IMP	-	Borehole Impression Test
PID	-	Photoionisation Detector
VS	-	Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES

B	-	Bulk disturbed sample
D	-	Disturbed sample
ES	-	Environmental sample
U	-	Thin wall tube 'undisturbed'

MOISTURE

D	-	Dry
M	-	Moist
W	-	Wet
PL	-	Plastic limit
LL	-	Liquid limit
w	-	Moisture content

SOIL CONSISTENCY

VS	-	Very Soft
S	-	Soft
F	-	Firm
St	-	Stiff
VSt	-	Very Stiff
H	-	Hard

RELATIVE DENSITY

VL	-	Very Loose
L	-	Loose
MD	-	Medium Dense
D	-	Dense
VD	-	Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

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APPENDIX D

DATA SUMMARY TABLES

					CRC Care TPH Fractions							TPH						BTEX					
					C6-C10	C10-C16	C16-C34	C34-C40	C10 - C40 (Sum of total)	F1: C6-C10 less BTEX	F2: >C10-C16 less Naphthalene	C6 - C9	C10 - C14	C15 - C28	C29-C36	>C10 - C36 (Sum of total)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					20	50	100	100	100	20	50	20	20	50	50	50	0.1	0.1	0.1	0.2	0.1	0.3
CRCCARE 2011 Soil HSL for Direct Contact, HSL-B Residential																						
0-1m					5600	4200	5800	8100									140	21000	5900			17000
NEPM 2013 HIL, Residential B																						
NEPM 2013 Soil HSL Residential A&B, for Vapour Intrusion, Sand																						
0-1m										45	110						0.5	160	55			40
1-2m										70	240						0.5	220	NL			60
CRCCARE 2011 Soil HSL for Direct Contact, HSL-C Rec/OP																						
0-1m					5100	3800	5300	7400									120	18000	5300			15000
NEPM 2013 HIL, Recreational C																						
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand																						
0-1m										NL	NL						NL	NL	NL			NL
1-2m										NL	NL						NL	NL	NL			NL
Sample ID	**Location Code**	**Sampled Depth**	**Sampled Date**	**Strata Description**																		
BH01_0.1	BH01	0.1	22/06/2021	Topsoil / Fill	<20	<500	<1000	1300	1300	<20	<500	<20	<200	<500	<500	<500	<0.1	<0.1	0.3	1.5	0.7	2.2
BH01_0.5	BH01	0.5	22/06/2021	Residual	<20	<50	160	660	820	<20	<50	<20	<20	51	220	271	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH02_0.1	BH02	0.1	21/06/2021	Topsoil / Fill	<20	<50	880	570	1450	<20	<50	<20	<20	750	240	990	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH03_0.1	BH03	0.1	21/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH04_0.1	BH04	0.1	22/06/2021	Topsoil / Fill	<20	<50	<100	320	320	<20	<50	<20	38	<50	73	111	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH05_0.1	BH05	0.1	21/06/2021	Topsoil / Fill	<20	<50	310	650	960	<20	<50	<20	<20	110	210	320	<0.1	<0.1	<0.1	0.6	0.3	0.9
BH05_0.5	BH05	0.5	21/06/2021	Topsoil / Fill	<20	<50	<100	230	230	<20	<50	<20	<20	<50	53	53	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH06_0.1	BH06	0.1	22/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA01_0.1	HA01	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA01_0.5	HA01	0.5	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA02_0.1	HA02	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA02_0.9	HA02	0.9	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA03_0.1	HA03	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA03_0.5	HA03	0.5	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA04_0.1	HA04	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	61	53	114	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA04_0.5	HA04	0.5	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP02_0.1	TP02	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP02_1	TP02	1	17/06/2021	Residual	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP03_0.1	TP03	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP04_0.5	TP04	0.5	17/06/2021	Possible Fill / Residual	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP05_0.1	TP05	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP05_0.5	TP05	0.5	17/06/2021	Possible Fill / Residual	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP06_0.1	TP06	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP07_0.1	TP07	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP07_0.5	TP07	0.5	17/06/2021	Residual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08_0.1	TP08	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP09_0.5	TP09	0.5	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP09_1.5	TP09	1.5	17/06/2021	Residual	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP10_0.1	TP10	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP10_0.5	TP10	0.5	17/06/2021	Possible Fill / Residual	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
QA100	TP10	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
QA101	HA03	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
QC100	TP10	0.1	17/06/2021	Topsoil / Fill	<25	<50	<100	<100	<50	<25	<50	<25	<50	<100	<100	-	<0.2	<0.5	<1	<2	<1	<3
QC101	HA03	0.1	17/06/2021	Topsoil / Fill	<25	<50	<100	<100	<50	<25	<50	<25	<50	<100	<100	-	<0.2	<0.5	<1	<2	<1	<3
Statistical Summary																						
Number of Results					33	33	33	33	33	33	33	33	33	33	33	31	33	33	33	33	33	33
Number of Detects					0	0	3	6	6	0	0	0	1	4	6	6	0	0	1	2	2	2
Minimum Concentration					<20	<50	<100	<100	<50	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
Minimum Detect					ND	ND	160	230	230	ND	ND	ND	38	51	53	53	ND	ND	0.3	0.6	0.3	0.9
Maximum Concentration					<25	<500	<1000	1300	1450	<25	<500	<25	<200	750	<500	990	<0.2	<0.5	<1	<2	<1	<3
Maximum Detect					ND	ND	880	1300	1450	ND	ND	ND	38	750	240	990	ND	ND	0.3	1.5	0.7	2.2
Number of Guideline Exceedances					1	1	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0
Number of Guideline Exceedances(Detects Only)					1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0
% of Results at or above the Detect Limit					0	0	9	18	18	0	0	0	3	12	18	19	0	0	3	6	6	6
% of Results below the Detect Limit					100	100	91	82	82	100	100	100	97	88	82	81	100	100	97	94	94	94
% of Detects at or above Guidelines					3	3	3	3	0	0	0	0	0	0	0	0	0	0	3	0	0	0
% of Results Below Guidelines or Non-Detect					97	97	97	97	100	100	100	100	100	100	100	100	100	100	97	100	100	100

					Metals										Organics	Inorganics						Asbestos
					Arsenic	Cadmium	Chromium (III+VI)	Copper	Iron	Iron (%)	Lead	Mercury	Nickel	Zinc	TOC	Moisture Content	% Clay*	Conductivity (1:5 aqueous extract)	CEC	Moisture Content (dried @ 103°C)	pH (Lab)	Asbestos Reported Result
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	US/CM	meq/100g	%	pH_Units	Comment
EQL					2	0.4	5	5	20	0.01	5	0.1	5	5	0.1	0.1	1	10	0.05	1	0.1	0.01%w/w
CRCCARE 2011 Soil HSL for Direct Contact, HSL-B Residential																						-
0-1m																						-
NEPM 2013 HIL, Residential B					500	150		30000			1200	120	1200	60000								0.04 w / w asbestos in ACM / No visible asbestos at surface
NEPM 2013 Soil HSL Residential A&B, for Vapour Intrusion, Sand																						-
0-1m																						-
1-2m																						-
CRCCARE 2011 Soil HSL for Direct Contact, HSL-C Rec/OP																						-
0-1m																						-
NEPM 2013 HIL, Recreational C					300	90		17000			600	80	1200	30000								0.02% w / w asbestos in ACM / No visible asbestos at surface
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand																						-
0-1m																						-
1-2m																						-
Sample ID	**Location Code**	**Sampled Depth**	**Sampled Date**	**Strata Description**																		
BH01_0.1	BH01	0.1	22/06/2021	Topsoil / Fill	2.1	<0.4	7.1	160	-	-	6.4	<0.1	12	63	-	-	-	-	-	4.8	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH01_0.5	BH01	0.5	22/06/2021	Residual	6.9	<0.4	42	<5	-	-	7.9	<0.1	12	13	-	-	-	-	-	16	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH02_0.1	BH02	0.1	21/06/2021	Topsoil / Fill	2.2	<0.4	10	<5	-	-	5.6	<0.1	5.9	<5	-	-	-	-	-	17	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH03_0.1	BH03	0.1	21/06/2021	Topsoil / Fill	2.4	<0.4	15	<5	-	-	7.7	<0.1	6.9	7.6	-	-	-	-	-	15	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH04_0.1	BH04	0.1	22/06/2021	Topsoil / Fill	2.4	<0.4	15	<5	-	-	<5	<0.1	5.5	<5	-	-	-	-	-	11	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH05_0.1	BH05	0.1	21/06/2021	Topsoil / Fill	<2	<0.4	<5	150	-	-	<5	<0.1	6.7	41	-	-	-	-	-	4.6	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH05_0.5	BH05	0.5	21/06/2021	Topsoil / Fill	12	<0.4	44	20	-	-	10	<0.1	<5	14	-	-	-	-	-	9.9	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH06_0.1	BH06	0.1	22/06/2021	Topsoil / Fill	<2	<0.4	21	200	-	-	5.2	<0.1	8.5	58	-	-	-	-	-	4.2	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
HA01_0.1	HA01	0.1	17/06/2021	Topsoil / Fill	5.2	<0.4	15	9.7	-	-	19	<0.1	10	32	-	-	-	-	-	17	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
HA01_0.5	HA01	0.5	17/06/2021	Topsoil / Fill	<2	<0.4	9.5	<5	-	-	<5	<0.1	<5	<5	-	-	-	-	-	10	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
HA02_0.1	HA02	0.1	17/06/2021	Topsoil / Fill	13	<0.4	23	19	-	-	23	<0.1	23	62	-	-	-	-	-	20	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
HA02_0.9	HA02	0.9	17/06/2021	Topsoil / Fill	2.9	<0.4	12	<5	-	-	12	<0.1	5.5	14	-	-	-	-	-	12	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
HA03_0.1	HA03	0.1	17/06/2021	Topsoil / Fill	12	<0.4	23	18	-	-	23	<0.1	23	63	-	-	-	-	-	22	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
HA03_0.5	HA03	0.5	17/06/2021	Topsoil / Fill	3.8	<0.4	11	17	-	-	8.9	<0.1	11	48	-	-	-	-	-	15	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
HA04_0.1	HA04	0.1	17/06/2021	Topsoil / Fill	2.5	<0.4	11	12	-	-	41	<0.1	<5	38	-	-	-	-	-	7.2	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
HA04_0.5	HA04	0.5	17/06/2021	Topsoil / Fill	3	<0.4	18	5.1	-	-	16	<0.1	<5	13	-	-	-	-	-	4.7	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP02_0.1	TP02	0.1	17/06/2021	Topsoil / Fill	3.7	<0.4	11	7.6	-	-	10	<0.1	<5	16	-	-	-	-	-	16	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP02_1	TP02	1	17/06/2021	Residual	6.8	<0.4	28	<5	-	-	6.8	<0.1	<5	<5	-	-	-	-	-	16	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP03_0.1	TP03	0.1	17/06/2021	Topsoil / Fill	<2	<0.4	8.3	<5	-	-	14	<0.1	<5	14	-	-	-	-	-	12	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP04_0.5	TP04	0.5	17/06/2021	Possible Fill / Residual	6.9	<0.4	46	<5	26,000	2.6	8.8	<0.1	8.5	<5	0.6	-	12	12	4.8	18	5.5	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP05_0.1	TP05	0.1	17/06/2021	Topsoil / Fill	7.2	<0.4	14	12	-	-	11	<0.1	13	34	-	-	-	-	-	11	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP05_0.5	TP05	0.5	17/06/2021	Possible Fill / Residual	<2	<0.4	5.3	<5	-	-	<5	<0.1	<5	<5	-	-	-	-	-	9.5	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP06_0.1	TP06	0.1	17/06/2021	Topsoil / Fill	2.8	<0.4	14	<5	9100	0.91	13	<0.1	5.1	13	2.2	-	6	36	1.2	12	4.6	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP07_0.1	TP07	0.1	17/06/2021	Topsoil / Fill	<2	<0.4	<5	<5	-	-	<5	<0.1	<5	<5	-	-	-	-	-	7.9	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP07_0.5	TP07	0.5	17/06/2021	Residual	-	-	-	-	26,000	2.6	-	-	-	-	0.5	-	19	26	4.5	17	5.1	-
TP08_0.1	TP08	0.1	17/06/2021	Topsoil / Fill	3.7	<0.4	9.3	5.5	-	-	10	<0.1	<5	12	-	-	-	-	-	8.3	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP09_0.5	TP09	0.5	17/06/2021	Topsoil / Fill	3.9	<0.4	15	<5	-	-	11	<0.1	<5	12	-	-	-	-	-	9.6	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP09_1.5	TP09	1.5	17/06/2021	Residual	5.7	<0.4	35	<5	-	-	8.6	<0.1	7.2	<5	-	-	-	-	-	14	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP10_0.1	TP10	0.1	17/06/2021	Topsoil / Fill	13	<0.4	60	<5	-	-	8.5	<0.1	<5	<5	-	-	-	-	-	10	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP10_0.5	TP10	0.5	17/06/2021	Possible Fill / Residual	3.5	<0.4	21	<5	-	-	5.6	<0.1	<5	<5	-	-	-	-	-	11	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
QA100	TP10	0.1	17/06/2021	Topsoil / Fill	20	<0.4	82	<5	-	-	10	<0.1	<5	<5	-	-	-	-	-	11	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
QA101	HA03	0.1	17/06/2021	Topsoil / Fill	15	<0.4	25	19	-	-	24	<0.1	23	64	-	-	-	-	-	22	-	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
QC100	TP10	0.1	17/06/2021	Topsoil / Fill	10	<0.4	50	<1	-	-	8	<0.1	<1	<1	-	11	-	-	-	-	-	-
QC101	HA03	0.1	17/06/2021	Topsoil / Fill	11	<0.4	18	16	-	-	19	<0.1	17	49	-	23	-	-	-	-	-	-
Statistical Summary																						
Number of Results					33	33	33	33	3	3	33	33	33	33	3	2	3	3	3	32	3	-
Number of Detects					27	0	31	15	3	3	28	0	18	21	3	2	3	3	3	32	3	-
Minimum Concentration					<2	<0.4	<5	<1	9100	0.91	<5	<0.1	<1	<1	0.5	11	6	12	1.2	4.2	4.6	-
Minimum Detect					2.1	ND	5.3	5.1	9100	0.91	5.2	ND	5.1	7.6	0.5	11	6	12	1.2	4.2	4.6	-
Maximum Concentration					20	<0.4	82	200	26000	2.6	41	<0.1	23	64	2.2	23	19	36	4.8	22	5.5	-
Maximum Detect					20	ND	82	200	26000	2.6	41	ND	23	64	2.2	23	19	36	4.8	22	5.5	-
Number of Guideline Exceedances					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Number of Guideline Exceedances(Detects Only)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
% of Results at or above the Detect Limit					82	0	94	45	100	100	85	0	55	64	100	100	100	100	100	100	100	-
% of Results below the Detect Limit					18	100	6	55	0	0	15	100	45	36	0	0	0	0	0	0	0	-
% of Detects at or above Guidelines					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
% of Results Below Guidelines or Non-Detect					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	-

																											SVOCs
					PAH																						
					Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	BaP TEQ (zero)	Benzo(a)pyrene	Benzo(b+j)fluoranthene	Benzo(b,j+k)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (upper bound)	2PAHs (Sum of total)	Total PAH (NEPM/WHO 16)	EPN
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.2
CRCCARE 2011 Soil HSL for Direct Contact, HSL-B Residential																											
0-1m																				2200							
NEPM 2013 HIL, Residential B																							4		400		
NEPM 2013 Soil HSL Residential A&B, for Vapour Intrusion, Sand																											
0-1m																				3							
1-2m																				NL							
CRCCARE 2011 Soil HSL for Direct Contact, HSL-C Rec/OP																											
0-1m																				1900							
NEPM 2013 HIL, Recreational C																							3		300		
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand																											
0-1m																				NL							
1-2m																				NL							
Sample ID	**Location Code**	**Sampled Depth**	**Sampled Date**	**Strata Description**																							
BH01_0.1	BH01	0.1	22/06/2021	Topsoil / Fill	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	<0.5	<5	<5	6.1	12	<5	-	<5
BH01_0.5	BH01	0.5	22/06/2021	Residual	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
BH02_0.1	BH02	0.1	21/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
BH03_0.1	BH03	0.1	21/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
BH04_0.1	BH04	0.1	22/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
BH05_0.1	BH05	0.1	21/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5
BH05_0.5	BH05	0.5	21/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
BH06_0.1	BH06	0.1	22/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA01_0.1	HA01	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA01_0.5	HA01	0.5	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA02_0.1	HA02	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA02_0.9	HA02	0.9	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA03_0.1	HA03	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA03_0.5	HA03	0.5	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA04_0.1	HA04	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA04_0.5	HA04	0.5	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP02_0.1	TP02	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP02_1	TP02	1	17/06/2021	Residual	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP03_0.1	TP03	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP04_0.5	TP04	0.5	17/06/2021	Possible Fill / Residual	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP05_0.1	TP05	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP05_0.5	TP05	0.5	17/06/2021	Possible Fill / Residual	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP06_0.1	TP06	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP07_0.1	TP07	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP07_0.5	TP07	0.5	17/06/2021	Residual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08_0.1	TP08	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP09_0.5	TP09	0.5	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP09_1.5	TP09	1.5	17/06/2021	Residual	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP10_0.1	TP10	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP10_0.5	TP10	0.5	17/06/2021	Possible Fill / Residual	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
QA100	TP10	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
QA101	HA03	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
QC100	TP10	0.1	17/06/2021	Topsoil / Fill	<0.1	<0.1	<0.1	<0.1	<0.5	<0.05	-	<0.2	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	-	<0.05	-
QC101	HA03	0.1	17/06/2021	Topsoil / Fill	<0.1	<0.1	<0.1	<0.1	<0.5	<0.05	-	<0.2	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	-	<0.05	-
Statistical Summary																											
Number of Results					33	33	33	33	33	33	31	2	31	33	33	33	33	33	33	33	33	33	33	33	31	2	31
Number of Detects					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	31	0	0	0
Minimum Concentration					<0.1	<0.1	<0.1	<0.1	<0.5	<0.05	<0.5	<0.2	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	<0.2
Minimum Detect					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6	1.2	ND	ND	ND
Maximum Concentration					<5	<5	<5	<5	<5	<5	<5	<0.2	<5	<5	<5	<5	<5	<5	<5	<0.5	<5	<5	6.1	12	<5	<0.05	<5
Maximum Detect					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.1	12	ND	ND	ND
Number of Guideline Exceedances					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
Number of Guideline Exceedances(Detects Only)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
% of Results at or above the Detect Limit					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94	94	0	0	0
% of Results below the Detect Limit					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	6	6	100	100	100
% of Detects at or above Guidelines					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0
% of Results Below Guidelines or Non-Detect					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	97	100	100	97	100	100	100	100

					Organochlorine Pesticides																										
					Vic EPA IWRG 621 OCP (Total)	Vic EPA IWRG 621 Other OCP (Total)	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene
					MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	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	0.2	0.1
CRCCARE 2011 Soil HSL for Direct Contact, HSL-B Residential																															
0-1m																															
NEPM 2013 HIL, Residential B										10		90						600					20				10		15	500	30
NEPM 2013 Soil HSL Residential A&B, for Vapour Intrusion, Sand																															
0-1m																															
1-2m																															
CRCCARE 2011 Soil HSL for Direct Contact, HSL-C Rec/OP																															
0-1m																															
NEPM 2013 HIL, Recreational C										10		70						400					20				10		10	400	30
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand																															
0-1m																															
1-2m																															
Sample ID	**Location Code**	**Sampled Depth**	**Sampled Date**	**Strata Description**																											
BH01_0.1	BH01	0.1	22/06/2021	Topsoil / Fill	<10	<10	<5	<5	<5	<5	<5	<10	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<100
BH01_0.5	BH01	0.5	22/06/2021	Residual	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
BH02_0.1	BH02	0.1	21/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
BH03_0.1	BH03	0.1	21/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
BH04_0.1	BH04	0.1	22/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
BH05_0.1	BH05	0.1	21/06/2021	Topsoil / Fill	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	10
BH05_0.5	BH05	0.5	21/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
BH06_0.1	BH06	0.1	22/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA01_0.1	HA01	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA01_0.5	HA01	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA02_0.1	HA02	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA02_0.9	HA02	0.9	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA03_0.1	HA03	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA03_0.5	HA03	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA04_0.1	HA04	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA04_0.5	HA04	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP02_0.1	TP02	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP02_1	TP02	1	17/06/2021	Residual	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP03_0.1	TP03	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP04_0.5	TP04	0.5	17/06/2021	Possible Fill / Residual	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP05_0.1	TP05	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP05_0.5	TP05	0.5	17/06/2021	Possible Fill / Residual	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP06_0.1	TP06	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP07_0.1	TP07	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP07_0.5	TP07	0.5	17/06/2021	Residual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08_0.1	TP08	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP09_0.5	TP09	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP09_1.5	TP09	1.5	17/06/2021	Residual	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP10_0.1	TP10	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP10_0.5	TP10	0.5	17/06/2021	Possible Fill / Residual	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
QA100	TP10	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
QA101	HA03	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
QC100	TP10	0.1	17/06/2021	Topsoil / Fill	-	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC101	HA03	0.1	17/06/2021	Topsoil / Fill	-	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-
Statistical Summary																															
Number of Results					31	31	33	33	33	31	33	31	2	2	33	33	33	33	33	33	33	33	33	33	31	33	33	33	33	33	31
Number of Detects					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Minimum Concentration					<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<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	<0.1	<0.1
Minimum Detect					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
Maximum Concentration					<10	<10	<5	<5	<5	<5	<5	<10	<0.1	<0.1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<100
Maximum Detect					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
Number of Guideline Exceedances					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	1
Number of Guideline Exceedances(Detects Only)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% of Results at or above the Detect Limit					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	3
% of Results below the Detect Limit					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	97
% of Detects at or above Guidelines					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
% of Results Below Guidelines or Non-Detect					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

					Organophosphorous Pesticides																																Pesticides	
					Tokuthion	Azinophos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethion	Ethoprop	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	Parathion	Pirimiphos-methyl
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.2	0.2	0.2	0.1	0.2	0.2	0.2	2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	2	0.2	2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
CRCCARE 2011 Soil HSL for Direct Contact, HSL-B Residential																																						
0-1m																																						
NEPM 2013 HIL, Residential B										340																												
NEPM 2013 Soil HSL Residential A&B, for Vapour Intrusion, Sand																																						
0-1m																																						
1-2m																																						
CRCCARE 2011 Soil HSL for Direct Contact, HSL-C Rec/OP																																						
0-1m																																						
NEPM 2013 HIL, Recreational C										250																												
NEPM 2013 Soil HSL Recreational C, for Vapour Intrusion, Sand																																						
0-1m																																						
1-2m																																						
Sample ID	**Location Code**	**Sampled Depth**	**Sampled Date**	**Strata Description**																																		
BH01_0.1	BH01	0.1	22/06/2021	Topsoil / Fill	<5	<5	<5	-	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5
BH01_0.5	BH01	0.5	22/06/2021	Residual	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
BH02_0.1	BH02	0.1	21/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
BH03_0.1	BH03	0.1	21/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
BH04_0.1	BH04	0.1	22/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
BH05_0.1	BH05	0.1	21/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<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	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH05_0.5	BH05	0.5	21/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
BH06_0.1	BH06	0.1	22/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA01_0.1	HA01	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA01_0.5	HA01	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA02_0.1	HA02	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA02_0.9	HA02	0.9	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA03_0.1	HA03	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA03_0.5	HA03	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA04_0.1	HA04	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA04_0.5	HA04	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP02_0.1	TP02	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP02_1	TP02	1	17/06/2021	Residual	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP03_0.1	TP03	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP04_0.5	TP04	0.5	17/06/2021	Possible Fill / Residual	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP05_0.1	TP05	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP05_0.5	TP05	0.5	17/06/2021	Possible Fill / Residual	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP06_0.1	TP06	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP07_0.1	TP07	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP07_0.5	TP07	0.5	17/06/2021	Residual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08_0.1	TP08	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP09_0.5	TP09	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP09_1.5	TP09	1.5	17/06/2021	Residual	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP10_0.1	TP10	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP10_0.5	TP10	0.5	17/06/2021	Possible Fill / Residual	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
QA100	TP10	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
QA101	HA03	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
QC100	TP10	0.1	17/06/2021	Topsoil / Fill	-	<0.1	-	<0.1	-	<0.1	<0.1	-	-	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	-	<0.1	-	-	-	-	-	-	-	-	<0.1	-	-	-	<0.1	-
QC101	HA03	0.1	17/06/2021	Topsoil / Fill	-	<0.1	-	<0.1	-	<0.1	<0.1	-	-	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	-	<0.1	-	-	-	-	-	-	-	-	<0.1	-	-	-	<0.1	-

Statistical Summary

Statistical Summary	Tokuthion	Azinophos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethion	Ethoprop	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	Parathion	Pirimiphos-methyl
Number of Results	31	33	31	2	31	33	33	31	31	31	33	33	33	31	33	31	33	31	31	33	31	31	31	31	31	31	31	31	33	31	31	31	33	31
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<5	<5	<5	<0.1	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% of Results at or above the Detect Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% of Results below the Detect Limit	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% of Detects at or above Guidelines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% of Results Below Guidelines or Non-Detect	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

	CRC Care TPH Fractions							TPH					BTEX					
	C6-C10	C10-C16	C16-C34	C34-C40	C10 - C40 (Sum of total)	F1: C6-C10 less BTEX	F2: >C10-C16 less Naphthalene	C6 - C9	C10 - C14	C15 - C28	C29-C36	>C10 - C36 (Sum of total)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	20	50	100	100	100	20	50	20	20	50	50	50	0.1	0.1	0.1	0.2	0.1	0.3
NEPM 2013 EIL UR/POS, low pH, CEC, clay content - aged																		
0-2m																		
Coarse Topsoil / Fill Strata (Silty SAND)																		
Possible Fill / Residual Strata (Clayey SAND)																		
Residual Strata (Sandy CLAY)																		
NEPM 2013 ESL UR/POS, Coarse Soil																		
0-2m		120	300	2800		180			120				50	85	70			105
NEPM 2013 Management Limits, R/P&POS, Coarse Soil	700	1000	2500	10000				700	1000									
Sample ID	**Location Code**	**Sampled Depth**	**Sampled Date**	**Strata Description**																
BH01_0.1	BH01	0.1	22/06/2021	Topsoil / Fill	<20	<500	<1000	1300	1300	<20	<500	<20	<200	<500	<500	<500	<0.1	<0.1	0.3	1.5	0.7	2.2
BH01_0.5	BH01	0.5	22/06/2021	Residual	<20	<50	160	660	820	<20	<50	<20	<20	51	220	271	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH02_0.1	BH02	0.1	21/06/2021	Topsoil / Fill	<20	<50	880	570	1450	<20	<50	<20	<20	750	240	990	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH03_0.1	BH03	0.1	21/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH04_0.1	BH04	0.1	22/06/2021	Topsoil / Fill	<20	<50	<100	320	320	<20	<50	<20	38	<50	73	111	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH05_0.1	BH05	0.1	21/06/2021	Topsoil / Fill	<20	<50	310	650	960	<20	<50	<20	<20	110	210	320	<0.1	<0.1	<0.1	0.6	0.3	0.9
BH05_0.5	BH05	0.5	21/06/2021	Topsoil / Fill	<20	<50	<100	230	230	<20	<50	<20	<20	<50	53	53	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
BH06_0.1	BH06	0.1	22/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA01_0.1	HA01	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA01_0.5	HA01	0.5	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA02_0.1	HA02	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA02_0.9	HA02	0.9	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA03_0.1	HA03	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA03_0.5	HA03	0.5	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA04_0.1	HA04	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	61	53	114	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
HA04_0.5	HA04	0.5	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP02_0.1	TP02	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP02_1	TP02	1	17/06/2021	Residual	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP03_0.1	TP03	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP04_0.5	TP04	0.5	17/06/2021	Possible Fill / Residual	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP05_0.1	TP05	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP05_0.5	TP05	0.5	17/06/2021	Possible Fill / Residual	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP06_0.1	TP06	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP07_0.1	TP07	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP07_0.5	TP07	0.5	17/06/2021	Residual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08_0.1	TP08	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP09_0.5	TP09	0.5	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP09_1.5	TP09	1.5	17/06/2021	Residual	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP10_0.1	TP10	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
TP10_0.5	TP10	0.5	17/06/2021	Possible Fill / Residual	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
QA100	TP10	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
QA101	HA03	0.1	17/06/2021	Topsoil / Fill	<20	<50	<100	<100	<100	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
QC100	TP10	0.1	17/06/2021	Topsoil / Fill	<25	<50	<100	<100	<50	<25	<50	<25	<50	<100	<100	-	<0.2	<0.5	<1	<2	<1	<3
QC101	HA03	0.1	17/06/2021	Topsoil / Fill	<25	<50	<100	<100	<50	<25	<50	<25	<50	<100	<100	-	<0.2	<0.5	<1	<2	<1	<3
Statistical Summary																				
Number of Results					33	33	33	33	33	33	33	33	33	33	33	31	33	33	33	33	33	33
Number of Detects					0	0	3	6	6	0	0	0	1	4	6	6	0	0	1	2	2	2
Minimum Concentration					<20	<50	<100	<100	<50	<20	<50	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3
Minimum Detect					ND	ND	160	230	230	ND	ND	ND	38	51	53	53	ND	ND	0.3	0.6	0.3	0.9
Maximum Concentration					<25	<500	<1000	1300	1450	<25	<500	<25	<200	750	<500	990	<0.2	<0.5	<1	<2	<1	<3
Maximum Detect					ND	ND	880	1300	1450	ND	ND	ND	38	750	240	990	ND	ND	0.3	1.5	0.7	2.2
Number of Guideline Exceedances					0	1	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)					0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% of Results at or above the Detect Limit					0	0	9	18	18	0	0	0	3	12	18	19	0	0	3	6	6	6
% of Results below the Detect Limit					100	100	91	82	82	100	100	100	97	88	82	81	100	100	97	94	94	94
% of Detects at or above Guidelines					0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% of Results Below Guidelines or Non-Detect					100	100	94	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

					Metals										Organics	Inorganics						
					Arsenic	Cadmium	Chromium (III+VI)	Copper	Iron	Iron (%)	Lead	Mercury	Nickel	Zinc	TOC	Moisture Content	% Clay*	Conductivity (1:5 aqueous extract)	CEC	Moisture Content (dried @ 103°C)	pH (Lab)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	US/CM	meq/100g	%	pH_Units
EQL					2	0.4	5	5	20	0.01	5	0.1	5	5	0.1	0.1	1	10	0.05	1	0.1
NEPM 2013 EIL UR/POS, low pH, CEC, clay content - aged																					
0-2m					100		190	60			1100		30	70							
Coarse Topsoil / Fill Strata (Silty SAND)					100		540	110			1100		36	230							
Possible Fill / Residual Strata (Clayey SAND)					100		630	170			1100		65	370							
Residual Strata (Sandy CLAY)					100		700	135			1100		60	320							
NEPM 2013 ESL UR/POS, Coarse Soil																					
0-2m																					
NEPM 2013 Management Limits, R/P&POS, Coarse Soil																					
Sample ID	**Location Code**	**Sampled Depth**	**Sampled Date**	**Strata Description**																	
BH01_0.1	BH01	0.1	22/06/2021	Topsoil / Fill	2.1	<0.4	7.1	160	-	-	6.4	<0.1	12	63	-	-	-	-	-	4.8	-
BH01_0.5	BH01	0.5	22/06/2021	Residual	6.9	<0.4	42	<5	-	-	7.9	<0.1	12	13	-	-	-	-	-	16	-
BH02_0.1	BH02	0.1	21/06/2021	Topsoil / Fill	2.2	<0.4	10	<5	-	-	5.6	<0.1	5.9	<5	-	-	-	-	-	17	-
BH03_0.1	BH03	0.1	21/06/2021	Topsoil / Fill	2.4	<0.4	15	<5	-	-	7.7	<0.1	6.9	7.6	-	-	-	-	-	15	-
BH04_0.1	BH04	0.1	22/06/2021	Topsoil / Fill	2.4	<0.4	15	<5	-	-	<5	<0.1	5.5	<5	-	-	-	-	-	11	-
BH05_0.1	BH05	0.1	21/06/2021	Topsoil / Fill	<2	<0.4	<5	150	-	-	<5	<0.1	6.7	41	-	-	-	-	-	4.6	-
BH05_0.5	BH05	0.5	21/06/2021	Topsoil / Fill	12	<0.4	44	20	-	-	10	<0.1	<5	14	-	-	-	-	-	9.9	-
BH06_0.1	BH06	0.1	22/06/2021	Topsoil / Fill	<2	<0.4	21	200	-	-	5.2	<0.1	8.5	58	-	-	-	-	-	4.2	-
HA01_0.1	HA01	0.1	17/06/2021	Topsoil / Fill	5.2	<0.4	15	9.7	-	-	19	<0.1	10	32	-	-	-	-	-	17	-
HA01_0.5	HA01	0.5	17/06/2021	Topsoil / Fill	<2	<0.4	9.5	<5	-	-	<5	<0.1	<5	<5	-	-	-	-	-	10	-
HA02_0.1	HA02	0.1	17/06/2021	Topsoil / Fill	13	<0.4	23	19	-	-	23	<0.1	23	62	-	-	-	-	-	20	-
HA02_0.9	HA02	0.9	17/06/2021	Topsoil / Fill	2.9	<0.4	12	<5	-	-	12	<0.1	5.5	14	-	-	-	-	-	12	-
HA03_0.1	HA03	0.1	17/06/2021	Topsoil / Fill	12	<0.4	23	18	-	-	23	<0.1	23	63	-	-	-	-	-	22	-
HA03_0.5	HA03	0.5	17/06/2021	Topsoil / Fill	3.8	<0.4	11	17	-	-	8.9	<0.1	11	48	-	-	-	-	-	15	-
HA04_0.1	HA04	0.1	17/06/2021	Topsoil / Fill	2.5	<0.4	11	12	-	-	41	<0.1	<5	38	-	-	-	-	-	7.2	-
HA04_0.5	HA04	0.5	17/06/2021	Topsoil / Fill	3	<0.4	18	5.1	-	-	16	<0.1	<5	13	-	-	-	-	-	4.7	-
TP02_0.1	TP02	0.1	17/06/2021	Topsoil / Fill	3.7	<0.4	11	7.6	-	-	10	<0.1	<5	16	-	-	-	-	-	16	-
TP02_1	TP02	1	17/06/2021	Residual	6.8	<0.4	28	<5	-	-	6.8	<0.1	<5	<5	-	-	-	-	-	16	-
TP03_0.1	TP03	0.1	17/06/2021	Topsoil / Fill	<2	<0.4	8.3	<5	-	-	14	<0.1	<5	14	-	-	-	-	-	12	-
TP04_0.5	TP04	0.5	17/06/2021	Possible Fill / Residual	6.9	<0.4	46	<5	26,000	2.6	8.8	<0.1	8.5	<5	0.6	-	12	12	4.8	18	5.5
TP05_0.1	TP05	0.1	17/06/2021	Topsoil / Fill	7.2	<0.4	14	12	-	-	11	<0.1	13	34	-	-	-	-	-	11	-
TP05_0.5	TP05	0.5	17/06/2021	Possible Fill / Residual	<2	<0.4	5.3	<5	-	-	<5	<0.1	<5	<5	-	-	-	-	-	9.5	-
TP06_0.1	TP06	0.1	17/06/2021	Topsoil / Fill	2.8	<0.4	14	<5	9100	0.91	13	<0.1	5.1	13	2.2	-	6	36	1.2	12	4.6
TP07_0.1	TP07	0.1	17/06/2021	Topsoil / Fill	<2	<0.4	<5	<5	-	-	<5	<0.1	<5	<5	-	-	-	-	-	7.9	-
TP07_0.5	TP07	0.5	17/06/2021	Residual	-	-	-	-	26,000	2.6	-	-	-	-	0.5	-	19	26	4.5	17	5.1
TP08_0.1	TP08	0.1	17/06/2021	Topsoil / Fill	3.7	<0.4	9.3	5.5	-	-	10	<0.1	<5	12	-	-	-	-	-	8.3	-
TP09_0.5	TP09	0.5	17/06/2021	Topsoil / Fill	3.9	<0.4	15	<5	-	-	11	<0.1	<5	12	-	-	-	-	-	9.6	-
TP09_1.5	TP09	1.5	17/06/2021	Residual	5.7	<0.4	35	<5	-	-	8.6	<0.1	7.2	<5	-	-	-	-	-	14	-
TP10_0.1	TP10	0.1	17/06/2021	Topsoil / Fill	13	<0.4	60	<5	-	-	8.5	<0.1	<5	<5	-	-	-	-	-	10	-
TP10_0.5	TP10	0.5	17/06/2021	Possible Fill / Residual	3.5	<0.4	21	<5	-	-	5.6	<0.1	<5	<5	-	-	-	-	-	11	-
QA100	TP10	0.1	17/06/2021	Topsoil / Fill	20	<0.4	82	<5	-	-	10	<0.1	<5	<5	-	-	-	-	-	11	-
QA101	HA03	0.1	17/06/2021	Topsoil / Fill	15	<0.4	25	19	-	-	24	<0.1	23	64	-	-	-	-	-	22	-
QC100	TP10	0.1	17/06/2021	Topsoil / Fill	10	<0.4	50	<1	-	-	8	<0.1	<1	<1	-	11	-	-	-	-	-
QC101	HA03	0.1	17/06/2021	Topsoil / Fill	11	<0.4	18	16	-	-	19	<0.1	17	49	-	23	-	-	-	-	-
Statistical Summary																					
Number of Results					33	33	33	33	3	3	33	33	33	33	3	2	3	3	3	32	3
Number of Detects					27	0	31	15	3	3	28	0	18	21	3	2	3	3	3	32	3
Minimum Concentration					<2	<0.4	<5	<1	9100	0.91	<5	<0.1	<1	<1	0.5	11	6	12	1.2	4.2	4.6
Minimum Detect					2.1	ND	5.3	5.1	9100	0.91	5.2	ND	5.1	7.6	0.5	11	6	12	1.2	4.2	4.6
Maximum Concentration					20	<0.4	82	200	26000	2.6	41	<0.1	23	64	2.2	23	19	36	4.8	22	5.5
Maximum Detect					20	ND	82	200	26000	2.6	41	ND	23	64	2.2	23	19	36	4.8	22	5.5
Number of Guideline Exceedances					0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)					0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
% of Results at or above the Detect Limit					82	0	94	45	100	100	85	0	55	64	100	100	100	100	100	100	100
% of Results below the Detect Limit					18	100	6	55	0	0	15	100	45	36	0	0	0	0	0	0	0
% of Detects at or above Guidelines					0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0
% of Results Below Guidelines or Non-Detect					100	100	100	91	100	100	100	100	100	100	100	100	100	100	100	100	100

	PAH																							SVOCs
	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	BaP TEQ (zero)	Benzo(a)pyrene	Benzo(b+j)fluoranthene	Benzo(b,j+k)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ (half LOR)_	Benzo(a)pyrene TEQ (upper bound) *	PAHs (Sum of total)	Total PAH (NEPM/WHO 16)	EPN
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.2
NEPM 2013 EIL UR/POS, low pH, CEC, clay content - aged																							
0-2m																170							
Coarse Topsoil / Fill Strata (Silty SAND)																							
Possible Fill / Residual Strata (Clayey SAND)																							
Residual Strata (Sandy CLAY)																							
NEPM 2013 ESL UR/POS, Coarse Soil																							
0-2m						0.7																	
NEPM 2013 Management Limits, R/P&POS, Coarse Soil																							

Sample ID	Location Code	Sampled Depth	Sampled Date	Strata Description																						
BH01_0.1	BH01	0.1	22/06/2021	Topsoil / Fill	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	<0.5	<5	<5	6.1	12	<5	-	<5
BH01_0.5	BH01	0.5	22/06/2021	Residual	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
BH02_0.1	BH02	0.1	21/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
BH03_0.1	BH03	0.1	21/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
BH04_0.1	BH04	0.1	22/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
BH05_0.1	BH05	0.1	21/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5
BH05_0.5	BH05	0.5	21/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
BH06_0.1	BH06	0.1	22/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA01_0.1	HA01	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA01_0.5	HA01	0.5	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA02_0.1	HA02	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA02_0.9	HA02	0.9	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA03_0.1	HA03	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA03_0.5	HA03	0.5	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA04_0.1	HA04	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
HA04_0.5	HA04	0.5	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP02_0.1	TP02	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP02_1	TP02	1	17/06/2021	Residual	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP03_0.1	TP03	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP04_0.5	TP04	0.5	17/06/2021	Possible Fill / Residual	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP05_0.1	TP05	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP05_0.5	TP05	0.5	17/06/2021	Possible Fill / Residual	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP06_0.1	TP06	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP07_0.1	TP07	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP07_0.5	TP07	0.5	17/06/2021	Residual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08_0.1	TP08	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP09_0.5	TP09	0.5	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP09_1.5	TP09	1.5	17/06/2021	Residual	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP10_0.1	TP10	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
TP10_0.5	TP10	0.5	17/06/2021	Possible Fill / Residual	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
QA100	TP10	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
QA101	HA03	0.1	17/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.2
QC100	TP10	0.1	17/06/2021	Topsoil / Fill	<0.1	<0.1	<0.1	<0.1	<0.5	<0.05	-	<0.2	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	-	<0.05	-
QC101	HA03	0.1	17/06/2021	Topsoil / Fill	<0.1	<0.1	<0.1	<0.1	<0.5	<0.05	-	<0.2	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	-	<0.05	-

Statistical Summary																								
Number of Results	33	33	33	33	33	33	31	2	31	33	33	33	33	33	33	33	33	33	33	33	31	2	31
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	31	0	0	0
Minimum Concentration	<0.1	<0.1	<0.1	<0.1	<0.5	<0.05	<0.5	<0.2	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	<0.2
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6	1.2	ND	ND	ND
Maximum Concentration	<5	<5	<5	<5	<5	<5	<5	<0.2	<5	<5	<5	<5	<5	<5	<5	<0.5	<5	<5	6.1	12	<5	<0.05	<5
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.1	12	ND	ND	ND
Number of Guideline Exceedances	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% of Results at or above the Detect Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94	94	0	0	0
% of Results below the Detect Limit	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	6	6	100	100	100
% of Detects at or above Guidelines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% of Results Below Guidelines or Non-Detect	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

	Organochlorine Pesticides																											
	Vic EPA IWRG 621 OCP (Total)*	Vic EPA IWRG 621 Other OCP (Total)*	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene
	MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	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	0.2	0.1
NEPM 2013 EIL UR/POS, low pH, CEC, clay content - aged																											
0-2m													180														
Coarse Topsoil / Fill Strata (Silty SAND)																											
Possible Fill / Residual Strata (Clayey SAND)																											
Residual Strata (Sandy CLAY)																											
NEPM 2013 ESL UR/POS, Coarse Soil																											
0-2m																											
NEPM 2013 Management Limits, R/P&POS, Coarse Soil																											
Sample ID	**Location Code**	**Sampled Depth**	**Sampled Date**	**Strata Description**																								
BH01_0.1	BH01	0.1	22/06/2021	Topsoil / Fill	<10	<10	<5	<5	<5	<5	<5	<10	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<100
BH01_0.5	BH01	0.5	22/06/2021	Residual	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
BH02_0.1	BH02	0.1	21/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
BH03_0.1	BH03	0.1	21/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
BH04_0.1	BH04	0.1	22/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
BH05_0.1	BH05	0.1	21/06/2021	Topsoil / Fill	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	10
BH05_0.5	BH05	0.5	21/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
BH06_0.1	BH06	0.1	22/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA01_0.1	HA01	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA01_0.5	HA01	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA02_0.1	HA02	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA02_0.9	HA02	0.9	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA03_0.1	HA03	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA03_0.5	HA03	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA04_0.1	HA04	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
HA04_0.5	HA04	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP02_0.1	TP02	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP02_1	TP02	1	17/06/2021	Residual	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP03_0.1	TP03	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP04_0.5	TP04	0.5	17/06/2021	Possible Fill / Residual	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP05_0.1	TP05	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP05_0.5	TP05	0.5	17/06/2021	Possible Fill / Residual	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP06_0.1	TP06	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP07_0.1	TP07	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP07_0.5	TP07	0.5	17/06/2021	Residual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08_0.1	TP08	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP09_0.5	TP09	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP09_1.5	TP09	1.5	17/06/2021	Residual	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP10_0.1	TP10	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
TP10_0.5	TP10	0.5	17/06/2021	Possible Fill / Residual	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
QA100	TP10	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
QA101	HA03	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<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	<0.2	<0.1
QC100	TP10	0.1	17/06/2021	Topsoil / Fill	-	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC101	HA03	0.1	17/06/2021	Topsoil / Fill	-	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-
Statistical Summary																												
Number of Results					31	31	33	33	33	31	33	31	2	2	33	33	33	33	33	33	33	33	33	31	33	33	33	33	33	31
Number of Detects					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Minimum Concentration					<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<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	<0.1	<0.1
Minimum Detect					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
Maximum Concentration					<10	<10	<5	<5	<5	<5	<5	<10	<0.1	<0.1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<100
Maximum Detect					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
Number of Guideline Exceedances					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% of Results at or above the Detect Limit					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	3
% of Results below the Detect Limit					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	97
% of Detects at or above Guidelines					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
% of Results Below Guidelines or Non-Detect					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

					Organophosphorous Pesticides																											Pesticides	
					Tokuthion	Azinophos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethion	Ethoprop	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	Parathion	Pirimiphos-methyl
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.2	0.2	0.2	0.1	0.2	0.2	0.2	2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	2	0.2	2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
NEPM 2013 EIL UR/POS, low pH, CEC, clay content - aged																																				
0-2m																																				
Coarse Topsoil / Fill Strata (Silty SAND)																																				
Possible Fill / Residual Strata (Clayey SAND)																																				
Residual Strata (Sandy CLAY)																																				
NEPM 2013 ESL UR/POS, Coarse Soil																																				
0-2m																																				
NEPM 2013 Management Limits, R/P&POS, Coarse Soil																																				
Sample ID	**Location Code**	**Sampled Depth**	**Sampled Date**	**Strata Description**																																
BH01_0.1	BH01	0.1	22/06/2021	Topsoil / Fill	<5	<5	<5	-	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5
BH01_0.5	BH01	0.5	22/06/2021	Residual	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
BH02_0.1	BH02	0.1	21/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
BH03_0.1	BH03	0.1	21/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
BH04_0.1	BH04	0.1	22/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
BH05_0.1	BH05	0.1	21/06/2021	Topsoil / Fill	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<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	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH05_0.5	BH05	0.5	21/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
BH06_0.1	BH06	0.1	22/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA01_0.1	HA01	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA01_0.5	HA01	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA02_0.1	HA02	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA02_0.9	HA02	0.9	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA03_0.1	HA03	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA03_0.5	HA03	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA04_0.1	HA04	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
HA04_0.5	HA04	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP02_0.1	TP02	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP02_1	TP02	1	17/06/2021	Residual	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP03_0.1	TP03	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP04_0.5	TP04	0.5	17/06/2021	Possible Fill / Residual	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP05_0.1	TP05	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP05_0.5	TP05	0.5	17/06/2021	Possible Fill / Residual	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP06_0.1	TP06	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP07_0.1	TP07	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP07_0.5	TP07	0.5	17/06/2021	Residual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08_0.1	TP08	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP09_0.5	TP09	0.5	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP09_1.5	TP09	1.5	17/06/2021	Residual	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP10_0.1	TP10	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TP10_0.5	TP10	0.5	17/06/2021	Possible Fill / Residual	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
QA100	TP10	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
QA101	HA03	0.1	17/06/2021	Topsoil / Fill	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
QC100	TP10	0.1	17/06/2021	Topsoil / Fill	-	<0.1	-	<0.1	-	<0.1	<0.1	-	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	-	<0.1	-	-	-	-	-	-	-	<0.1	-	-	-	<0.1	-
QC101	HA03	0.1	17/06/2021	Topsoil / Fill	-	<0.1	-	<0.1	-	<0.1	<0.1	-	-	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-	-	<0.1	-	-	-	-	-	-	-	-	<0.1	-	-	-	<0.1	-
Statistical Summary																																				
Number of Results					31	33	31	2	31	33	33	31	31	31	33	33	33	31	33	31	33	31	31	33	31	31	31	31	31	31	33	31	31	31	33	31
Number of Detects					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration					<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.2
Minimum Detect					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration					<5	<5	<5	<0.1	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5
Maximum Detect					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Number of Guideline Exceedances					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% of Results at or above the Detect Limit					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% of Results below the Detect Limit					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% of Detects at or above Guidelines					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% of Results Below Guidelines or Non-Detect					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Lab Report Number	806804	806804		806804	806804		806804	272975		806804	272975	
Field ID	TP10_0.1	QA100	RPD	HA03_0.1	QA101	RPD	TP10_0.1	QC100	RPD	HA03_0.1	QC101	RPD
Sampled Date	17/06/2021	17/06/2021		17/06/2021	17/06/2021		17/06/2021	17/06/2021		17/06/2021	17/06/2021	
Chemical Group	**Chemical Name**	**Units**	**EQL**									
BTEX	Benzene	mg/kg	0.1 : 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.2	0	<0.1	<0.2	0
	Toluene	mg/kg	0.1 : 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.5	0
	Ethylbenzene	mg/kg	0.1 : 1 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<1	0	<0.1	<1	0
	Xylene (m & p)	mg/kg	0.2 : 2 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<2	0	<0.2	<2	0
	Xylene (o)	mg/kg	0.1 : 1 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<1	0	<0.1	<1	0
	Xylene Total	mg/kg	0.3 : 3 (Interlab)	<0.3	<0.3	0	<0.3	<0.3	0	<0.3	<3	0	<0.3	<3	0
TPH	C6 - C9	mg/kg	20 : 25 (Interlab)	<20	<20	0	<20	<20	0	<20	<25	0	<20	<25	0
	C10 - C14	mg/kg	20 : 50 (Interlab)	<20	<20	0	<20	<20	0	<20	<50	0	<20	<50	0
	C15 - C28	mg/kg	50 : 100 (Interlab)	<50	<50	0	<50	<50	0	<50	<100	0	<50	<100	0
	C29-C36	mg/kg	50 : 100 (Interlab)	<50	<50	0	<50	<50	0	<50	<100	0	<50	<100	0
	+C10 - C36 (Sum of total)	mg/kg	50	<50	<50	0	<50	<50	0	<50			<50		
CRC Care TPH Fractions	C6-C10	mg/kg	20 : 25 (Interlab)	<20	<20	0	<20	<20	0	<20	<25	0	<20	<25	0
	C10-C16	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
	C16-C34	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0
	C34-C40	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0
	C10 - C40 (Sum of total)	mg/kg	100 : 50 (Interlab)	<100	<100	0	<100	<100	0	<100	<50	0	<100	<50	0
	F1: C6-C10 less BTEX	mg/kg	20 : 25 (Interlab)	<20	<20	0	<20	<20	0	<20	<25	0	<20	<25	0
	F2: >C10-C16 less Naphthalene	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
PAH	Benzo(a)pyrene TEQ (half LOR)_	mg/kg	0.5	0.6	0.6	0	0.6	0.6	0	0.6	<0.5	18	0.6	<0.5	18
	Benzo(a)pyrene TEQ (upper bound) *	mg/kg	0.5	1.2	1.2	0	1.2	1.2	0	**1.2**	**<0.5**	**82**	**1.2**	**<0.5**	**82**
	Acenaphthene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Acenaphthylene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Anthracene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Benz(a)anthracene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	BaP TEQ (zero)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)pyrene	mg/kg	0.5 : 0.05 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.05	0	<0.5	<0.05	0
	Benzo(b+j)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5			<0.5		
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5			<0.5		
	Benzo(g,h,i)perylene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Chrysene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Dibenz(a,h)anthracene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Fluoranthene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Fluorene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Naphthalene	mg/kg	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Naphthalene	mg/kg	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	PAHs (Sum of total)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5			<0.5		
	Phenanthrene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
	Pyrene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.1	0
Metals	Arsenic	mg/kg	2 : 4 (Interlab)	13	20	42	12	15	22	13	10	26	12	11	9
	Cadmium	mg/kg	0.4	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0
	Chromium (III+VI)	mg/kg	5 : 1 (Interlab)	60	82	31	23	25	8	60	50	18	23	18	24
	Copper	mg/kg	5 : 1 (Interlab)	<5	<5	0	18	19	5	<5	<1	0	18	16	12
	Lead	mg/kg	5 : 1 (Interlab)	8.5	10	16	23	24	4	8.5	8	6	23	19	19
	Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
	Nickel	mg/kg	5 : 1 (Interlab)	<5	<5	0	23	23	0	<5	<1	0	23	17	30
	Zinc	mg/kg	5 : 1 (Interlab)	<5	<5	0	63	64	2	<5	<1	0	63	49	25
Inorganics	Moisture Content (dried @ 103°C)	%	1	10	11	10	22	22	0	10			22		
SVOCs	EPN	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		

Lab Report Number				806804	806804		806804	806804		806804	272975		806804	272975	
Field ID				TP10_0.1	QA100	**RPD**	HA03_0.1	QA101	**RPD**	TP10_0.1	QC100	**RPD**	HA03_0.1	QC101	**RPD**
Sampled Date				17/06/2021	17/06/2021		17/06/2021	17/06/2021		17/06/2021	17/06/2021		17/06/2021	17/06/2021	
Organochlorine Pesticides	Vic EPA IWRG 621 OCP (Total)*	mg/kg	0.1	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Vic EPA IWRG 621 Other OCP (Total)*	mg/kg	0.1	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	4,4-DDE	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	a-BHC	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Aldrin	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Aldrin + Dieldrin	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05			<0.05		
	b-BHC	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Chlordane	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1			<0.1		
	d-BHC	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	DDD	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	DDT	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	DDT+DDE+DDD	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Dieldrin	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Endosulfan I	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Endosulfan II	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Endosulfan sulphate	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Endrin	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Endrin aldehyde	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Endrin ketone	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05			<0.05		
	g-BHC (Lindane)	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Heptachlor	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Heptachlor epoxide	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Hexachlorobenzene	mg/kg	0.05 : 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.1	0
	Methoxychlor	mg/kg	0.2 : 0.1 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.1	0
	Toxaphene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1			<0.1		
Organophosphorous Pesticides	Tokuthion	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Azinophos methyl	mg/kg	0.2 : 0.1 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.1	0
	Bolstar (Sulprofos)	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Chlorfenvinphos	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Chlorpyrifos	mg/kg	0.2 : 0.1 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.1	0
	Chlorpyrifos-methyl	mg/kg	0.2 : 0.1 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.1	0
	Coumaphos	mg/kg	2	<2	<2	0	<2	<2	0	<2			<2		
	Demeton-O	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Demeton-S	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Diazinon	mg/kg	0.2 : 0.1 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.1	0
	Dichlorvos	mg/kg	0.2 : 0.1 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.1	0
	Dimethoate	mg/kg	0.2 : 0.1 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.1	0
	Disulfoton	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Ethion	mg/kg	0.2 : 0.1 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.1	0
	Ethoprop	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Fenitrothion	mg/kg	0.2 : 0.1 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.1	0
	Fensulfothion	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Fenthion	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Malathion	mg/kg	0.2 : 0.1 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.1	0
	Merphos	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Methyl parathion	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Mevinphos (Phosdrin)	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Monocrotophos	mg/kg	2	<2	<2	0	<2	<2	0	<2			<2		
	Naled (Dibrom)	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Omethoate	mg/kg	2	<2	<2	0	<2	<2	0	<2			<2		
	Phorate	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Pyrazophos	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Ronnel	mg/kg	0.2 : 0.1 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.1	0
	Terbufos	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Trichloronate	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
	Tetrachlorvinphos	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		
Pesticides	Parathion	mg/kg	0.2 : 0.1 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.1	0
	Pirimiphos-methyl	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2			<0.2		

APPENDIX

E

LAB ANALYTICAL REPORTS

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CERTIFICATE OF ANALYSIS 272975

Client Details

Client	Cardno (NSW/ACT) Pty Ltd
Attention	Christopher Cook, Callum Laker
Address	PO Box 19, St Leonards, NSW, 1590

Sample Details

Your Reference	**8202118201, Shoalhaven Hospital**
Number of Samples	2 soil
Date samples received	30/06/2021
Date completed instructions received	30/06/2021

Analysis Details

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

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

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

Report Details

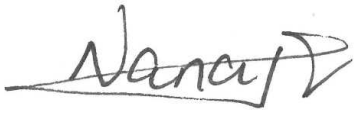
Date results requested by	07/07/2021
Date of Issue	05/07/2021

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

Results Approved By
Giovanni Agosti, Group Technical Manager
Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		272975-1	272975-2
Your Reference	UNITS	QC100	QC101
Date Sampled		17/06/2021	17/06/2021
Type of sample		soil	soil
Date extracted	-	01/07/2021	01/07/2021
Date analysed	-	02/07/2021	02/07/2021
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<3	<3
Surrogate aaa-Trifluorotoluene	%	98	92

svTRH (C10-C40) in Soil			
Our Reference		272975-1	272975-2
Your Reference	UNITS	QC100	QC101
Date Sampled		17/06/2021	17/06/2021
Type of sample		soil	soil
Date extracted	-	01/07/2021	01/07/2021
Date analysed	-	02/07/2021	02/07/2021
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	75	81

PAHs in Soil			
Our Reference		272975-1	272975-2
Your Reference	UNITS	QC100	QC101
Date Sampled		17/06/2021	17/06/2021
Type of sample		soil	soil
Date extracted	-	01/07/2021	01/07/2021
Date analysed	-	02/07/2021	02/07/2021
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	103	101

Organochlorine Pesticides in soil			
Our Reference		272975-1	272975-2
Your Reference	UNITS	QC100	QC101
Date Sampled		17/06/2021	17/06/2021
Type of sample		soil	soil
Date extracted	-	01/07/2021	01/07/2021
Date analysed	-	02/07/2021	02/07/2021
alpha-BHC	mg/kg	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1
Surrogate TCMX	%	76	87

Organophosphorus Pesticides in Soil			
Our Reference		272975-1	272975-2
Your Reference	UNITS	QC100	QC101
Date Sampled		17/06/2021	17/06/2021
Type of sample		soil	soil
Date extracted	-	01/07/2021	01/07/2021
Date analysed	-	02/07/2021	02/07/2021
Dichlorvos	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	76	87

Acid Extractable metals in soil			
Our Reference	UNITS	272975-1	272975-2
Your Reference		QC100	QC101
Date Sampled		17/06/2021	17/06/2021
Type of sample		soil	soil
Date prepared	-	01/07/2021	01/07/2021
Date analysed	-	01/07/2021	01/07/2021
Arsenic	mg/kg	10	11
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	50	18
Copper	mg/kg	<1	16
Lead	mg/kg	8	19
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	<1	17
Zinc	mg/kg	<1	49

Moisture			
Our Reference		272975-1	272975-2
Your Reference	UNITS	QC100	QC101
Date Sampled		17/06/2021	17/06/2021
Type of sample		soil	soil
Date prepared	-	01/07/2021	01/07/2021
Date analysed	-	02/07/2021	02/07/2021
Moisture	%	11	23

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-022	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. 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.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			01/07/2021	[NT]	[NT]	[NT]	[NT]	01/07/2021	[NT]
Date analysed	-			02/07/2021	[NT]	[NT]	[NT]	[NT]	02/07/2021	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	103	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	103	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	101	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	98	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	104	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	100	[NT]	[NT]	[NT]	[NT]	101	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			01/07/2021	[NT]	[NT]	[NT]	[NT]	01/07/2021	[NT]
Date analysed	-			01/07/2021	[NT]	[NT]	[NT]	[NT]	01/07/2021	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	122	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	107	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	83	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	122	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	107	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	83	[NT]
Surrogate o-Terphenyl	%		Org-020	79	[NT]	[NT]	[NT]	[NT]	100	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			01/07/2021	[NT]	[NT]	[NT]	[NT]	01/07/2021	[NT]
Date analysed	-			02/07/2021	[NT]	[NT]	[NT]	[NT]	02/07/2021	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	79	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	75	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	80	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	71	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	73	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	106	[NT]	[NT]	[NT]	[NT]	106	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			01/07/2021	[NT]	[NT]	[NT]	[NT]	01/07/2021	[NT]
Date analysed	-			02/07/2021	[NT]	[NT]	[NT]	[NT]	02/07/2021	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	83	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	87	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	79	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	84	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	87	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	72	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	79	[NT]	[NT]	[NT]	[NT]	80	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			01/07/2021	[NT]	[NT]	[NT]	[NT]	01/07/2021	[NT]
Date analysed	-			02/07/2021	[NT]	[NT]	[NT]	[NT]	02/07/2021	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	73	[NT]
Malathion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	69	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	84	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	67	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	79	[NT]	[NT]	[NT]	[NT]	80	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			01/07/2021	[NT]	[NT]	[NT]	[NT]	01/07/2021	[NT]
Date analysed	-			01/07/2021	[NT]	[NT]	[NT]	[NT]	01/07/2021	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	98	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	93	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	97	[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.

Chain of Custody

Cardno

From: Cardno - Sydney
Address: Level 9, The Forum
203 Pacific Hwy
St Leonards 2065
Phone: (02) 9496 7700
Attention: **Callum Laker/ Chris Cook**
Email: callum.laker@cardno.com.au; christopher.cook@cardno.com.au
Mobile: **0417 493 692**

To: Eurofins | mgt
Address: Unit F3, Building F
16 Mars Road
LANE COVE WEST NSW 2066
Phone: (02) 9900 8400
Email: EnviroSampleNSW@eurofins.com.au

Date: 25/06/2021
TAT: Standard
Purchase Order: 8202118201
Eurofins | mgt Quote ID: 180626CAR
Project number: 8202118201
Project name: Shoalhaven Hospital
Data output format: PDF, Esdat

Attempt to chill evident: (Y / N)

Sample Temperature on Arrival: 11.0

Notes: Please include Contam.NSW@Cardno.com.au on all deliverables.

Eurofins Sample Number	Cardno Sample Number	Sample Date	Matrix	Container (Plastic Tube – PT, Bag – B, Petri Dish – PD, Plastic Bottle – PB, Plastic Jar - PJ, Glass Jar – GJ, Glass Bottle – GB, Glass Vial - GV)	Analytes: Single Analytes: TRH	TRH w/ Silica Gel	BTEXN	PAHS	OCP	OPP	PCB	1 Metal	Metals (exc. Hg)	Metals (inc. Hg)	Metals (inc Hg & Cr6)	Total Phenols	VOCs	Hold	B21 Suite - pH, CEC, Clay, TOC, %FE	Asbestos in Soil (NEPM)	EC	[illegible]	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Applicable Suites	Sample Comments	
	BH01_0.1	22/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Relinquished By: Callum Laker
	BH01_0.5	22/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	
	BH02_0.1	21/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Company: Date: 25/06/2021
	BH02_0.5	21/06/2021	Soil	1 x J / B														1										
	BH03_0.1	21/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Received By:
	BH03_0.5	21/06/2021	Soil	1 x J / B														1										
	BH04_0.1	22/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Company: Time: Date:
	BH04_0.5	22/06/2021	Soil	1 x J / B														1										
	BH05_0.1	21/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Relinquished By:
	BH05_0.5	21/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	
	BH06_0.1	22/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Company: Time: Date:
	BH06_0.5	22/06/2021	Soil	1 x J / B														1										
	HA01_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Received By:
	HA01_0.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	
	HA02_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Company: Time: Date:
				Total	11		11	11	11	11				11				4		11									

Hannah M
Eurofins

25/06/21
3:15PM

Temperature: 0.9°C

Report Number: 806804

272975

Chain of Custody

From: Cardno - Sydney
Address: Level 9, The Forum
203 Pacific Hwy
St Leonards 2065
Phone: (02) 9496 7700
Attention: **Callum Laker/ Chris Cook**
Email: callum.laker@cardno.com.au; christopher.cook@cardno.com.au
Mobile: **0417 493 692**

To: Eurofins | mgt
Address: Unit F3, Building F
16 Mars Road
LANE COVE WEST NSW 2066
Phone: (02) 9900 8400
Email: EnviroSampleNSW@eurofins.com.au

Date: 25/06/2021
TAT: Standard
Purchase Order: 8202118201
Eurofins | mgt Quote ID: 180626CAR
Project number: 8202118201
Project name: Shoalhaven Hospital
Data output format: PDF, Esdat

Attempt to chill evident: Y / N Sample Temperature on Arrival: _____

Notes: Please include Contam.NSW@Cardno.com.au on all deliverables.

Eurofins Sample Number	Cardno Sample Number	Sample Date	Matrix	Container (Plastic Tube – PT, Bag – B, Petri Dish – PD, Plastic Bottle – PB, Plastic Jar - PJ, Glass Jar – GJ, Glass Bottle – GB, Glass Vial - GV)	Analytes: Single Analytes: TRH	TRH w/ Silica Gel	BTEXN	PAHS	OCP	OPP	PCB	1 Metal	Metals (exc. Hg)	Metals (inc. Hg)	Metals (inc Hg & Cr6)	Total Phenols	VOCs	Hold	R21 Suite - pH, CEC, Clay, TOC, %FE	Asbestos in Soil (NEPM)	EC	[illegible]	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Applicable Suites	Sample Comments
	HA02_0.5	17/06/2021	Soil	1 x J / B														1										
	HA02_0.9	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1							B7 B14	STD 8 METALS
	HA03_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1							B7 B14	STD 8 METALS
	HA03_0.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1							B7 B14	STD 8 METALS
	HA04_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1							B7 B14	STD 8 METALS
	HA04_0.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1							B7 B14	STD 8 METALS
	TP02_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1							B7 B14	STD 8 METALS
	TP02_0.5	17/06/2021	Soil	1 x J / B														1										
	TP02_1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1							B7 B14	STD 8 METALS
	TP03_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1							B7 B14	STD 8 METALS
	TP03_0.5	17/06/2021	Soil	1 x J / B														1										
	TP03_1	17/06/2021	Soil	1 x J / B														1										
	TP04_0.1	17/06/2021	Soil	1 x J / B														1										
	TP04_0.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1					1	1								B7 B14	STD 8 METALS
	TP04_1	17/06/2021	Soil	1 x J / B														1										
				Total	9		9	9	9	9				9				6	1	9									

Hannah M 25/06/21 Temperature: 0.9oc
Eurofins 3:15PM Report Number: 806804

272975

Chain of Custody

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Project name: Shoalhaven Hospital
Data output format: PDF, Esdat

Attempt to chill evident: Y / N Sample Temperature on Arrival: _____

Notes: Please include Contam.NSW@Cardno.com.au on all deliverables.

Eurofins Sample Number	Cardno Sample Number	Sample Date	Matrix	Container Plastic Tube – PT Bag – B Petri Dish – PD Plastic Bottle – PB Plastic Jar - PJ Glass Jar – GJ Glass Bottle – GB Glass Vial - GV	Analytes: Single Analytes: TRH	TRH w/ Silica Gel	BTEXN	PAHS	OCP	OPP	PCB	1 Metal	Metals (exc. Hg)	Metals (inc. Hg)	Metals (inc Hg & Cr6)	Total Phenols	VOCs	Hold	P21 Suite - pH, CEC, Clay, TOC, %FE	Asbestos in Soil (NEPM)	EC	[illegible]	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Applicable Suites	Sample Comments
	TP05_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
	TP05_0.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
	TP05_1	17/06/2021	Soil	1 x J / B														1										
	TP06_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1					1	1							B7 B14	STD 8 METALS
	TP06_0.5	17/06/2021	Soil	1 x J / B														1										
	TP06_1	17/06/2021	Soil	1 x J / B														1										
	TP07_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
	TP07_0.5	17/06/2021	Soil	1 x J / B															1									
	TP08_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
	TP08_0.5	17/06/2021	Soil	1 x J / B														1										
	TP08_1	17/06/2021	Soil	1 x J / B														1										
	TP09_0.1	17/06/2021	Soil	1 x J / B														1										
	TP09_0.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
	TP09_1	17/06/2021	Soil	1 x J / B														1										
	TP09_1.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
				Total	7		7	7	7	7				7				7	2	7								

Hannah M
Eurofins
25/06/21
3:15pm
Temp: 0.9°C
Report Number: 806804

272975

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Address: Unit F3, Building F
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Phone: (02) 9900 8400
Email: EnviroSampleNSW@eurofins.com.au

Date: 25/06/2021
TAT: Standard
Purchase Order: 8202118201
Eurofins | mgt Quote ID: 180626CAR
Project number: 8202118201
Project name: Shoalhaven Hospital
Data output format: PDF, Esdat

Attempt to chill evident: (Y) / N

Sample Temperature on Arrival: 11.0

Notes: Please include Contam.NSW@Cardno.com.au on all deliverables.

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

Job No: 272475
Date Received: 30/6/21
Time Received:
Received by: CM 1340
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Eurofins Sample Number	Cardno Sample Number	Sample Date	Matrix	Container (Plastic Tube – PT; Bag – B; Petri Dish – PD; Plastic Bottle – PB; Plastic Jar - PJ; Glass Jar – GJ; Glass Bottle – GB; Glass Vial - GV)	Analytes: Single Analytes: TRH	TRH w/ Silica Gel	BTEXN	PAHS	OCP	OPP	PCB	1 Metal	Metals (exc. Hg)	Metals (inc. Hg)	Metals (inc Hg & Cr6)	Total Phenols	VOCs	Hold	R21 Suite - pH, CEC, Clay, TOC, %FE	Asbestos in Soil (NEPM)	EC	[illegible]	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Applicable Suites	Sample Comments
	TP10_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
	TP10_0.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
	TP10_1	17/06/2021	Soil	1 x J / B														1										
(1)	QA100	17/06/2021	Soil	1 x J	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
	QC100	17/06/2021	Soil	1 x J	1		1	1	1	1				1						1							B7 B14	PLEASE FORWARD TO ENVIROLAB FOR ANALYSIS
(2)	QA101	17/06/2021	Soil	1 x J	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
	QC101	17/06/2021	Soil	1 x J	1		1	1	1	1				1						1							B7 B14	PLEASE FORWARD TO ENVIROLAB FOR ANALYSIS
				Total	6		6	6	6	6				6				1		6								

Hannah M 25/06/21 3:15PM Eurofins

Temperature: 0.9°c

Report Number: 806804

Chain of Custody

Cardno

From: Cardno - Sydney
Address: Level 9, The Forum
203 Pacific Hwy
St Leonards 2065
Phone: (02) 9496 7700
Attention: **Callum Laker/ Chris Cook**
Email: callum.laker@cardno.com.au; christopher.cook@cardno.com.au
Mobile: **0417 493 692**

To: Eurofins | mgt
Address: Unit F3, Building F
16 Mars Road
LANE COVE WEST NSW 2066
Phone: (02) 9900 8400
Email: EnviroSampleNSW@eurofins.com.au

Date: 25/06/2021
TAT: Standard
Purchase Order: 8202118201
Eurofins | mgt Quote ID: 180626CAR
Project number: 8202118201
Project name: Shoalhaven Hospital
Data output format: PDF, Esdat

Attempt to chill evident: Y / N Sample Temperature on Arrival: _____

Notes: Please include Contam.NSW@Cardno.com.au on all deliverables.

Eurofins Sample Number	Cardno Sample Number	Sample Date	Matrix	Container (Plastic Tube – PT; Bag – B; Petri Dish – PD; Plastic Bottle – PB; Plastic Jar - PJ; Glass Jar – GJ; Glass Bottle – GB; Glass Vial - GV)	Analytes: Single Analytes: TRH	TRH w/ Silica Gel	BTEXN	PAHS	OCP	OPP	PCB	1 Metal	Metals (exc. Hg)	Metals (inc. Hg)	Metals (inc Hg & Cr6)	Total Phenols	VOCs	Hold	21 Suite - pH, CEC, Clay, TOC, %FE	Asbestos in Soil (NEPM)	EC	[illegible]	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Applicable Suites	Sample Comments	
	BH01_0.1	22/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Relinquished By: Callum Laker
	BH01_0.5	22/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	
	BH02_0.1	21/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Company: Date: 25/06/2021
	BH02_0.5	21/06/2021	Soil	1 x J / B														1										
	BH03_0.1	21/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Received By:
	BH03_0.5	21/06/2021	Soil	1 x J / B														1										
	BH04_0.1	22/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Company: Time: Date:
	BH04_0.5	22/06/2021	Soil	1 x J / B														1										
	BH05_0.1	21/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Relinquished By:
	BH05_0.5	21/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	
	BH06_0.1	22/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Company: Time: Date:
	BH06_0.5	22/06/2021	Soil	1 x J / B														1										
	HA01_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Received By:
	HA01_0.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	
	HA02_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	Company: Time: Date:
				Total	11		11	11	11	11				11				4		11									

Hannah M
Eurofins
25/06/21
3:15PM
Temperature: 0.9°C
Report Number: 806804

Chain of Custody

From: Cardno - Sydney
Address: Level 9, The Forum
203 Pacific Hwy
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Attention: **Callum Laker/ Chris Cook**
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Date: 25/06/2021
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Eurofins | mgt Quote ID: 180626CAR
Project number: 8202118201
Project name: Shoalhaven Hospital
Data output format: PDF, Esdat

Attempt to chill evident: Y / N Sample Temperature on Arrival: _____

Notes: Please include Contam.NSW@Cardno.com.au on all deliverables.

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	HA02_0.5	17/06/2021	Soil	1 x J / B														1									
	HA02_0.9	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1						B7 B14	STD 8 METALS
	HA03_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1						B7 B14	STD 8 METALS
	HA03_0.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1						B7 B14	STD 8 METALS
	HA04_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1						B7 B14	STD 8 METALS
	HA04_0.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1						B7 B14	STD 8 METALS
	TP02_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1						B7 B14	STD 8 METALS
	TP02_0.5	17/06/2021	Soil	1 x J / B														1									
	TP02_1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1						B7 B14	STD 8 METALS
	TP03_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1							1						B7 B14	STD 8 METALS
	TP03_0.5	17/06/2021	Soil	1 x J / B														1									
	TP03_1	17/06/2021	Soil	1 x J / B														1									
	TP04_0.1	17/06/2021	Soil	1 x J / B														1									
	TP04_0.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1					1	1							B7 B14	STD 8 METALS
	TP04_1	17/06/2021	Soil	1 x J / B														1									
				Total	9		9	9	9	9				9				6	1	9								

Hannah M 25/06/21 Temperature: 0.9oc

Eurofins 3:15PM Report Number: 806804

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Data output format: PDF, Esdat

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Sample Temperature on Arrival: _____

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Eurofins Sample Number	Cardno Sample Number	Sample Date	Matrix	Container (Plastic Tube – PT, Bag – B, Petri Dish – PD, Plastic Bottle – PB, Plastic Jar - PJ, Glass Jar – GJ, Glass Bottle – GB, Glass Vial - GV)	Analytes: Single Analytes: TRH	TRH w/ Silica Gel	BTEXN	PAHS	OCP	OPP	PCB	1 Metal	Metals (exc. Hg)	Metals (inc. Hg)	Metals (inc Hg & Cr6)	Total Phenols	VOCs	Hold	F21 Suite - pH, CEC, Clay, TOC, %FE	Asbestos in Soil (NEPM)	EC	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Applicable Suites	Sample Comments
	TP05_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
	TP05_0.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
	TP05_1	17/06/2021	Soil	1 x J / B														1										
	TP06_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1					1	1							B7 B14	STD 8 METALS
	TP06_0.5	17/06/2021	Soil	1 x J / B														1										
	TP06_1	17/06/2021	Soil	1 x J / B														1										
	TP07_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
	TP07_0.5	17/06/2021	Soil	1 x J / B															1									
	TP08_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
	TP08_0.5	17/06/2021	Soil	1 x J / B														1										
	TP08_1	17/06/2021	Soil	1 x J / B														1										
	TP09_0.1	17/06/2021	Soil	1 x J / B														1										
	TP09_0.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
	TP09_1	17/06/2021	Soil	1 x J / B														1										
	TP09_1.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS
				Total	7		7	7	7	7				7				7	2	7								

Hannah M
Eurofins

25/06/21
3:15pm

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Data output format: PDF, Esdat

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Eurofins Sample Number	Cardno Sample Number	Sample Date	Matrix	Container (Plastic Tube – PT, Bag – B, Petri Dish – PD, Plastic Bottle – PB, Plastic Jar - PJ, Glass Jar – GJ, Glass Bottle – GB, Glass Vial - GV)	Analytes: Single Analytes: TRH	TRH w/ Silica Gel	BTEXN	PAHS	OCP	OPP	PCB	1 Metal	Metals (exc. Hg)	Metals (inc. Hg)	Metals (inc Hg & Cr6)	Total Phenols	VOCs	Hold	21 Suite - pH, CEC, Clay, TOC, %FE	Asbestos in Soil (NEPM)	EC	Agronomy suite (subs 15 (pH, EC, CL, Ammonia, SO4))	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Select Analyte or Delete to Clear	Applicable Suites	Sample Comments	
	TP10_0.1	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	
	TP10_0.5	17/06/2021	Soil	1 x J / B	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	
	TP10_1	17/06/2021	Soil	1 x J / B														1											
	QA100	17/06/2021	Soil	1 x J	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	
	QC100	17/06/2021	Soil	1 x J	1		1	1	1	1				1						1							B7 B14	PLEASE FORWARD TO ENVIROLAB FOR ANALYSIS	
	QA101	17/06/2021	Soil	1 x J	1		1	1	1	1				1						1							B7 B14	STD 8 METALS	
	QC101	17/06/2021	Soil	1 x J	1		1	1	1	1				1						1							B7 B14	PLEASE FORWARD TO ENVIROLAB FOR ANALYSIS	
				Total	6		6	6	6	6				6				1		6									

Hannah M 25/06/21 Temperature: 0.9°C

Eurofins 3:15PM Report Number: 806804

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Sample Receipt Advice

Company name:	Cardno Pty Ltd (WOLL)
Contact name:	Callum Laker
Project name:	SHOALHAVEN HOSPITAL
Project ID:	8202118201
Turnaround time:	5 Day
Date/Time received	Jun 25, 2021 3:15 PM
Eurofins reference	806804

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Callum Laker - callum.laker@cardno.com.au.

Note: A copy of these results will also be delivered to the general Cardno Pty Ltd (WOLL) email address.

Global Leader - Results you can trust

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NSW 2500

Project Name: SHOALHAVEN HOSPITAL
Project ID: 8202118201

Order No.: 8202118201
Report #: 806804
Phone: 02 4231 9672
Fax:

Received: Jun 25, 2021 3:15 PM
Due: Jul 2, 2021
Priority: 5 Day
Contact Name: Callum Laker

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	HOLD	Suite B14: OCP/OPP	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7
Melbourne Laboratory - NATA Site # 1254											X	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											X	
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	BH01_0.1	Jun 22, 2021		Soil	S21-Jn60212		X		X	X		X
2	BH01_0.5	Jun 22, 2021		Soil	S21-Jn60213		X		X	X		X
3	BH02_0.1	Jun 21, 2021		Soil	S21-Jn60214	X			X	X		X
4	BH03_0.1	Jun 21, 2021		Soil	S21-Jn60215	X			X	X		X
5	BH04_0.1	Jun 22, 2021		Soil	S21-Jn60216		X		X	X		X
6	BH05_0.1	Jun 21, 2021		Soil	S21-Jn60217		X		X	X		X
7	BH05_0.5	Jun 21, 2021		Soil	S21-Jn60218		X		X	X		X
8	BH06_0.1	Jun 22, 2021		Soil	S21-Jn60219		X		X	X		X
9	HA01_0.1	Jun 17, 2021		Soil	S21-Jn60220	X			X	X		X

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NSW 2500

Project Name: SHOALHAVEN HOSPITAL
Project ID: 8202118201

Order No.: 8202118201
Report #: 806804
Phone: 02 4231 9672
Fax:

Received: Jun 25, 2021 3:15 PM
Due: Jul 2, 2021
Priority: 5 Day
Contact Name: Callum Laker

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	HOLD	Suite B14: OCP/OPP	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7
Melbourne Laboratory - NATA Site # 1254											X	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											X	
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
10	HA01_0.5	Jun 17, 2021		Soil	S21-Jn60221	X			X	X		X
11	HA02_0.1	Jun 17, 2021		Soil	S21-Jn60222	X			X	X		X
12	HA02_0.9	Jun 17, 2021		Soil	S21-Jn60223	X			X	X		X
13	HA03_0.1	Jun 17, 2021		Soil	S21-Jn60224	X			X	X		X
14	HA03_0.5	Jun 17, 2021		Soil	S21-Jn60225	X			X	X		X
15	HA04_0.1	Jun 17, 2021		Soil	S21-Jn60226		X		X	X		X
16	HA04_0.5	Jun 17, 2021		Soil	S21-Jn60227		X		X	X		X
17	TP02_0.1	Jun 17, 2021		Soil	S21-Jn60228		X		X	X		X
18	TP02_1	Jun 17, 2021		Soil	S21-Jn60229		X		X	X		X
19	TP03_0.1	Jun 17, 2021		Soil	S21-Jn60230		X		X	X		X
20	TP04_0.5	Jun 17, 2021		Soil	S21-Jn60231		X		X	X	X	X

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Melbourne Laboratory - NATA Site # 1254											X	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											X	
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
21	TP05_0.1	Jun 17, 2021		Soil	S21-Jn60232		X		X	X		X
22	TP05_0.5	Jun 17, 2021		Soil	S21-Jn60233		X		X	X		X
23	TP06_0.1	Jun 17, 2021		Soil	S21-Jn60234		X		X	X	X	X
24	TP07_0.1	Jun 17, 2021		Soil	S21-Jn60235		X		X	X		X
25	TP07_0.5	Jun 17, 2021		Soil	S21-Jn60236					X	X	
26	TP08_0.1	Jun 17, 2021		Soil	S21-Jn60237		X		X	X		X
27	TP09_0.5	Jun 17, 2021		Soil	S21-Jn60238		X		X	X		X
28	TP09_1.5	Jun 17, 2021		Soil	S21-Jn60239		X		X	X		X
29	TP10_0.1	Jun 17, 2021		Soil	S21-Jn60240		X		X	X		X
30	TP10_0.5	Jun 17, 2021		Soil	S21-Jn60241		X		X	X		X
31	QA100	Jun 17, 2021		Soil	S21-Jn60242	X			X	X		X

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Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	HOLD	Suite B14: OCP/OPP	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7
Melbourne Laboratory - NATA Site # 1254											X	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											X	
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
32	QA101	Jun 17, 2021		Soil	S21-Jn60243	X			X	X		X
33	BH02_0.5	Jun 21, 2021		Soil	S21-Jn60244			X				
34	BH03_0.5	Jun 21, 2021		Soil	S21-Jn60245			X				
35	BH04_0.5	Jun 22, 2021		Soil	S21-Jn60246			X				
36	BH06_0.5	Jun 22, 2021		Soil	S21-Jn60247			X				
37	HA02_0.5	Jun 17, 2021		Soil	S21-Jn60248			X				
38	TP02_0.5	Jun 17, 2021		Soil	S21-Jn60249			X				
39	TP03_0.5	Jun 17, 2021		Soil	S21-Jn60250			X				
40	TP03_1	Jun 17, 2021		Soil	S21-Jn60251			X				
41	TP04_0.1	Jun 17, 2021		Soil	S21-Jn60252			X				
42	TP04_1	Jun 17, 2021		Soil	S21-Jn60253			X				

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Received: Jun 25, 2021 3:15 PM
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Priority: 5 Day
Contact Name: Callum Laker

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	HOLD	Suite B14: OCP/OPP	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7
Melbourne Laboratory - NATA Site # 1254											X	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											X	
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
43	TP05_1	Jun 17, 2021		Soil	S21-Jn60254			X				
44	TP06_0.5	Jun 17, 2021		Soil	S21-Jn60255			X				
45	TP06_1	Jun 17, 2021		Soil	S21-Jn60256			X				
46	TP08_0.5	Jun 17, 2021		Soil	S21-Jn60257			X				
47	TP08_1	Jun 17, 2021		Soil	S21-Jn60258			X				
48	TP09_0.1	Jun 17, 2021		Soil	S21-Jn60259			X				
49	TP09_1	Jun 17, 2021		Soil	S21-Jn60260			X				
50	TP10_1	Jun 17, 2021		Soil	S21-Jn60261			X				
Test Counts						10	21	18	31	32	3	31

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
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Cardno Pty Ltd (WOLL)
Groung Floor, 16 Burelli Street
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NSW 2500

Attention:	Callum Laker
Report	806804-AID
Project Name	SHOALHAVEN HOSPITAL
Project ID	8202118201
Received Date	Jun 25, 2021
Date Reported	Jul 08, 2021

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Accredited for compliance with ISO/IEC 17025–Testing
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Project Name SHOALHAVEN HOSPITAL
Project ID 8202118201
Date Sampled Jun 17, 2021 to Jun 22, 2021
Report 806804-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH01_0.1	21-Jn60212	Jun 22, 2021	Approximate Sample 256g Sample consisted of: Brown coarse-grained soil, brick, bitumen, cement and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH01_0.5	21-Jn60213	Jun 22, 2021	Approximate Sample 366g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH02_0.1	21-Jn60214	Jun 21, 2021	Approximate Sample 246g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH03_0.1	21-Jn60215	Jun 21, 2021	Approximate Sample 146g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH04_0.1	21-Jn60216	Jun 22, 2021	Approximate Sample 319g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH05_0.1	21-Jn60217	Jun 21, 2021	Approximate Sample 282g Sample consisted of: Brown coarse-grained soil, bitumen and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH05_0.5	21-Jn60218	Jun 21, 2021	Approximate Sample 301g Sample consisted of: Brown coarse-grained soil, bitumen and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH06_0.1	21-Jn60219	Jun 22, 2021	Approximate Sample 293g Sample consisted of: Brown fine-grained clayey soil, bitumen and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

NATA Accredited
Accreditation Number 1261
Site Number 18217

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Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
HA01_0.1	21-Jn60220	Jun 17, 2021	Approximate Sample 192g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
HA01_0.5	21-Jn60221	Jun 17, 2021	Approximate Sample 210g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
HA02_0.1	21-Jn60222	Jun 17, 2021	Approximate Sample 161g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
HA02_0.9	21-Jn60223	Jun 17, 2021	Approximate Sample 225g Sample consisted of: Brown coarse-grained soil, plaster and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
HA03_0.1	21-Jn60224	Jun 17, 2021	Approximate Sample 233g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
HA03_0.5	21-Jn60225	Jun 17, 2021	Approximate Sample 194g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
HA04_0.1	21-Jn60226	Jun 17, 2021	Approximate Sample 438g Sample consisted of: Brown coarse-grained sandy soil, bitumen and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA04_0.5	21-Jn60227	Jun 17, 2021	Approximate Sample 402g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP02_0.1	21-Jn60228	Jun 17, 2021	Approximate Sample 374g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP02_1	21-Jn60229	Jun 17, 2021	Approximate Sample 351g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP03_0.1	21-Jn60230	Jun 17, 2021	Approximate Sample 401g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP04_0.5	21-Jn60231	Jun 17, 2021	Approximate Sample 394g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP05_0.1	21-Jn60232	Jun 17, 2021	Approximate Sample 438g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

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Site Number 18217

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Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP05_0.5	21-Jn60233	Jun 17, 2021	Approximate Sample 409g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP06_0.1	21-Jn60234	Jun 17, 2021	Approximate Sample 416g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP07_0.1	21-Jn60235	Jun 17, 2021	Approximate Sample 442g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP08_0.1	21-Jn60237	Jun 17, 2021	Approximate Sample 321g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP09_0.5	21-Jn60238	Jun 17, 2021	Approximate Sample 482g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP09_1.5	21-Jn60239	Jun 17, 2021	Approximate Sample 374g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP10_0.1	21-Jn60240	Jun 17, 2021	Approximate Sample 534g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP10_0.5	21-Jn60241	Jun 17, 2021	Approximate Sample 468g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
QA100	21-Jn60242	Jun 17, 2021	Approximate Sample 51g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
QA101	21-Jn60243	Jun 17, 2021	Approximate Sample 45g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Jul 02, 2021	Indefinite
Asbestos - LTM-ASB-8020	Sydney	Jul 02, 2021	Indefinite

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Company Name: Cardno Pty Ltd (WOLL)
Address: Groung Floor, 16 Burelli Street
Wollongong
NSW 2500

Project Name: SHOALHAVEN HOSPITAL
Project ID: 8202118201

Order No.: 8202118201
Report #: 806804
Phone: 02 4231 9672
Fax:

Received: Jun 25, 2021 3:15 PM
Due: Jul 2, 2021
Priority: 5 Day
Contact Name: Callum Laker

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	HOLD	Suite B14: OCP/OPP	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7
Melbourne Laboratory - NATA Site # 1254											X	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											X	
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	BH01_0.1	Jun 22, 2021		Soil	S21-Jn60212		X		X	X		X
2	BH01_0.5	Jun 22, 2021		Soil	S21-Jn60213		X		X	X		X
3	BH02_0.1	Jun 21, 2021		Soil	S21-Jn60214	X			X	X		X
4	BH03_0.1	Jun 21, 2021		Soil	S21-Jn60215	X			X	X		X
5	BH04_0.1	Jun 22, 2021		Soil	S21-Jn60216		X		X	X		X
6	BH05_0.1	Jun 21, 2021		Soil	S21-Jn60217		X		X	X		X
7	BH05_0.5	Jun 21, 2021		Soil	S21-Jn60218		X		X	X		X
8	BH06_0.1	Jun 22, 2021		Soil	S21-Jn60219		X		X	X		X
9	HA01_0.1	Jun 17, 2021		Soil	S21-Jn60220	X			X	X		X

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Melbourne Laboratory - NATA Site # 1254											X	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											X	
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
10	HA01_0.5	Jun 17, 2021		Soil	S21-Jn60221	X			X	X		X
11	HA02_0.1	Jun 17, 2021		Soil	S21-Jn60222	X			X	X		X
12	HA02_0.9	Jun 17, 2021		Soil	S21-Jn60223	X			X	X		X
13	HA03_0.1	Jun 17, 2021		Soil	S21-Jn60224	X			X	X		X
14	HA03_0.5	Jun 17, 2021		Soil	S21-Jn60225	X			X	X		X
15	HA04_0.1	Jun 17, 2021		Soil	S21-Jn60226		X		X	X		X
16	HA04_0.5	Jun 17, 2021		Soil	S21-Jn60227		X		X	X		X
17	TP02_0.1	Jun 17, 2021		Soil	S21-Jn60228		X		X	X		X
18	TP02_1	Jun 17, 2021		Soil	S21-Jn60229		X		X	X		X
19	TP03_0.1	Jun 17, 2021		Soil	S21-Jn60230		X		X	X		X
20	TP04_0.5	Jun 17, 2021		Soil	S21-Jn60231		X		X	X	X	X

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Melbourne Laboratory - NATA Site # 1254											X	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											X	
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
21	TP05_0.1	Jun 17, 2021		Soil	S21-Jn60232		X		X	X		X
22	TP05_0.5	Jun 17, 2021		Soil	S21-Jn60233		X		X	X		X
23	TP06_0.1	Jun 17, 2021		Soil	S21-Jn60234		X		X	X	X	X
24	TP07_0.1	Jun 17, 2021		Soil	S21-Jn60235		X		X	X		X
25	TP07_0.5	Jun 17, 2021		Soil	S21-Jn60236					X	X	
26	TP08_0.1	Jun 17, 2021		Soil	S21-Jn60237		X		X	X		X
27	TP09_0.5	Jun 17, 2021		Soil	S21-Jn60238		X		X	X		X
28	TP09_1.5	Jun 17, 2021		Soil	S21-Jn60239		X		X	X		X
29	TP10_0.1	Jun 17, 2021		Soil	S21-Jn60240		X		X	X		X
30	TP10_0.5	Jun 17, 2021		Soil	S21-Jn60241		X		X	X		X
31	QA100	Jun 17, 2021		Soil	S21-Jn60242	X			X	X		X

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Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	HOLD	Suite B14: OCP/OPP	Moisture Set	NEPM Screen for Soil Classification	Eurofins Suite B7
Melbourne Laboratory - NATA Site # 1254											X	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											X	
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
32	QA101	Jun 17, 2021		Soil	S21-Jn60243	X			X	X		X
33	BH02_0.5	Jun 21, 2021		Soil	S21-Jn60244			X				
34	BH03_0.5	Jun 21, 2021		Soil	S21-Jn60245			X				
35	BH04_0.5	Jun 22, 2021		Soil	S21-Jn60246			X				
36	BH06_0.5	Jun 22, 2021		Soil	S21-Jn60247			X				
37	HA02_0.5	Jun 17, 2021		Soil	S21-Jn60248			X				
38	TP02_0.5	Jun 17, 2021		Soil	S21-Jn60249			X				
39	TP03_0.5	Jun 17, 2021		Soil	S21-Jn60250			X				
40	TP03_1	Jun 17, 2021		Soil	S21-Jn60251			X				
41	TP04_0.1	Jun 17, 2021		Soil	S21-Jn60252			X				
42	TP04_1	Jun 17, 2021		Soil	S21-Jn60253			X				

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Melbourne Laboratory - NATA Site # 1254											X	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											X	
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
43	TP05_1	Jun 17, 2021		Soil	S21-Jn60254			X				
44	TP06_0.5	Jun 17, 2021		Soil	S21-Jn60255			X				
45	TP06_1	Jun 17, 2021		Soil	S21-Jn60256			X				
46	TP08_0.5	Jun 17, 2021		Soil	S21-Jn60257			X				
47	TP08_1	Jun 17, 2021		Soil	S21-Jn60258			X				
48	TP09_0.1	Jun 17, 2021		Soil	S21-Jn60259			X				
49	TP09_1	Jun 17, 2021		Soil	S21-Jn60260			X				
50	TP10_1	Jun 17, 2021		Soil	S21-Jn60261			X				
Test Counts						10	21	18	31	32	3	31

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
5. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Sample is dried by heating prior to analysis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Reference document for the NEPM. Government of Western Australia, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2009), including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil (2011)
NEPM	National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended)
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded and/or sound condition. For the purposes of the NEPM, ACM is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
AF	Asbestos Fines. Asbestos containing materials, including friable, weathered and bonded materials, able to pass a 7mm x 7mm sieve. Considered under the NEPM as equivalent to “non-bonded / friable”.
FA	Fibrous Asbestos. Asbestos containing materials in a friable and/or severely weathered condition. For the purposes of the NEPM, FA is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory’s remit to assess degree of friability.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres in the matrix.

Comments

Jn60212, Jn60213, Jn60216, Jn60217, Jn60218, Jn60219, Jn60226, Jn60227, Jn60228, Jn60229, Jn60230, Jn60231, Jn60232, Jn60233, Jn60234, Jn60235, Jn60237, Jn60238, Jn60239, Jn60241: Samples received were less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

Jn60242, Jn60243: The samples received were not collected in an approved asbestos bag and was therefore sub-sampled from the 250mL glass jar. Valid sub-sampling procedures were applied so as to ensure that the sub-samples to be analysed accurately represented the samples received.

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos (NSW)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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Attention: **Callum Laker**

Report **806804-S**
Project name SHOALHAVEN HOSPITAL
Project ID 8202118201
Received Date Jun 25, 2021

Client Sample ID			[G01]**BH01_0.1**	**BH01_0.5**	**BH02_0.1**	**BH03_0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S21-Jn60212**	**S21-Jn60213**	**S21-Jn60214**	**S21-Jn60215**
Date Sampled			**Jun 22, 2021**	**Jun 22, 2021**	**Jun 21, 2021**	**Jun 21, 2021**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 200	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 500	51	750	< 50
TRH C29-C36	50	mg/kg	< 500	220	240	< 50
TRH C10-C36 (Total)	50	mg/kg	< 500	271	990	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 500	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 500	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 1000	160	880	< 100
TRH >C34-C40	100	mg/kg	1300	660	570	< 100
TRH >C10-C40 (total)*	100	mg/kg	1300	820	1450	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	0.3	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	1.5	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	0.7	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	2.2	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	116	126	104	114
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	6.1	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	12	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5

Client Sample ID			[G01]BH01_0.1	BH01_0.5	BH02_0.1	BH03_0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60212	S21-Jn60213	S21-Jn60214	S21-Jn60215
Date Sampled			Jun 22, 2021	Jun 22, 2021	Jun 21, 2021	Jun 21, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	67	92	92	109
p-Terphenyl-d14 (surr.)	1	%	INT	90	89	105
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 10	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Toxaphene	0.1	mg/kg	< 100	< 0.1	< 0.1	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 5	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 10	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 10	< 0.2	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	INT	92	132	140
Tetrachloro-m-xylene (surr.)	1	%	54	92	91	111
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 50	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2

Client Sample ID			[G01]BH01_0.1	BH01_0.5	BH02_0.1	BH03_0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60212	S21-Jn60213	S21-Jn60214	S21-Jn60215
Date Sampled			Jun 22, 2021	Jun 22, 2021	Jun 21, 2021	Jun 21, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Disulfoton	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 50	< 2	< 2	< 2
Naled	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 50	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 5	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	INT	94	111	136
Heavy Metals						
Arsenic	2	mg/kg	2.1	6.9	2.2	2.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	7.1	42	10	15
Copper	5	mg/kg	160	< 5	< 5	< 5
Lead	5	mg/kg	6.4	7.9	5.6	7.7
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	12	12	5.9	6.9
Zinc	5	mg/kg	63	13	< 5	7.6
% Moisture	1	%	4.8	16	17	15

Client Sample ID			BH04_0.1	[G01]BH05_0.1	BH05_0.5	BH06_0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60216	S21-Jn60217	S21-Jn60218	S21-Jn60219
Date Sampled			Jun 22, 2021	Jun 21, 2021	Jun 21, 2021	Jun 22, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	38	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	110	< 50	< 50
TRH C29-C36	50	mg/kg	73	210	53	< 50
TRH C10-C36 (Total)	50	mg/kg	111	320	53	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			BH04_0.1	[G01]BH05_0.1	BH05_0.5	BH06_0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60216	S21-Jn60217	S21-Jn60218	S21-Jn60219
Date Sampled			Jun 22, 2021	Jun 21, 2021	Jun 21, 2021	Jun 22, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	310	< 100	< 100
TRH >C34-C40	100	mg/kg	320	650	230	< 100
TRH >C10-C40 (total)*	100	mg/kg	320	960	230	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	0.6	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	0.3	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	0.9	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	118	148	92	148
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	100	94	107	108
p-Terphenyl-d14 (surr.)	1	%	99	73	92	93
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05

Client Sample ID			BH04_0.1	[G01]BH05_0.1	BH05_0.5	BH06_0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60216	S21-Jn60217	S21-Jn60218	S21-Jn60219
Date Sampled			Jun 22, 2021	Jun 21, 2021	Jun 21, 2021	Jun 22, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endosulfan II	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Toxaphene	0.1	mg/kg	< 0.1	10	< 0.1	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 1	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 1	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	121	66	65	65
Tetrachloro-m-xylene (surr.)	1	%	103	94	109	113
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 5	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 5	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 5	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2

Client Sample ID			BH04_0.1	[G01]BH05_0.1	BH05_0.5	BH06_0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60216	S21-Jn60217	S21-Jn60218	S21-Jn60219
Date Sampled			Jun 22, 2021	Jun 21, 2021	Jun 21, 2021	Jun 22, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	116	INT	64	53
Heavy Metals						
Arsenic	2	mg/kg	2.4	< 2	12	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	15	< 5	44	21
Copper	5	mg/kg	< 5	150	20	200
Lead	5	mg/kg	< 5	< 5	10	5.2
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	5.5	6.7	< 5	8.5
Zinc	5	mg/kg	< 5	41	14	58
% Moisture	1	%	11	4.6	9.9	4.2

Client Sample ID			HA01_0.1	HA01_0.5	HA02_0.1	HA02_0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60220	S21-Jn60221	S21-Jn60222	S21-Jn60223
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	145	144	99	116
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HA01_0.1	HA01_0.5	HA02_0.1	HA02_0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60220	S21-Jn60221	S21-Jn60222	S21-Jn60223
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	109	69	76	76
p-Terphenyl-d14 (surr.)	1	%	113	70	80	80
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	INT	123	133	132
Tetrachloro-m-xylene (surr.)	1	%	105	74	81	82

Client Sample ID			HA01_0.1	HA01_0.5	HA02_0.1	HA02_0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60220	S21-Jn60221	S21-Jn60222	S21-Jn60223
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	INT	117	136	133
Heavy Metals						
Arsenic	2	mg/kg	5.2	< 2	13	2.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	15	9.5	23	12
Copper	5	mg/kg	9.7	< 5	19	< 5
Lead	5	mg/kg	19	< 5	23	12
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	10.0	< 5	23	5.5
Zinc	5	mg/kg	32	< 5	62	14
% Moisture	1	%	17	10	20	12

Client Sample ID			HA03_0.1	HA03_0.5	HA04_0.1	HA04_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60224	S21-Jn60225	S21-Jn60226	S21-Jn60227
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	61	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	53	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	114	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	100	119	109	101
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	77	82	114	84
p-Terphenyl-d14 (surr.)	1	%	80	83	104	74
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			HA03_0.1	HA03_0.5	HA04_0.1	HA04_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60224	S21-Jn60225	S21-Jn60226	S21-Jn60227
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	136	148	99	65
Tetrachloro-m-xylene (surr.)	1	%	78	86	118	70
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			HA03_0.1	HA03_0.5	HA04_0.1	HA04_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60224	S21-Jn60225	S21-Jn60226	S21-Jn60227
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	139	144	81	69
Heavy Metals						
Arsenic	2	mg/kg	12	3.8	2.5	3.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	23	11	11	18
Copper	5	mg/kg	18	17	12	5.1
Lead	5	mg/kg	23	8.9	41	16
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	23	11	< 5	< 5
Zinc	5	mg/kg	63	48	38	13
% Moisture	1	%	22	15	7.2	4.7

Client Sample ID			TP02_0.1	TP02_1	TP03_0.1	TP04_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60228	S21-Jn60229	S21-Jn60230	S21-Jn60231
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	126	112	108	119

Client Sample ID			TP02_0.1	TP02_1	TP03_0.1	TP04_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60228	S21-Jn60229	S21-Jn60230	S21-Jn60231
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	82	85	99	99
p-Terphenyl-d14 (surr.)	1	%	88	84	87	99
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	132	125	54	84
Tetrachloro-m-xylene (surr.)	1	%	74	71	100	103

Client Sample ID			TP02_0.1	TP02_1	TP03_0.1	TP04_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60228	S21-Jn60229	S21-Jn60230	S21-Jn60231
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	115	112	51	88
Heavy Metals						
Arsenic	2	mg/kg	3.7	6.8	< 2	6.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	11	28	8.3	46
Copper	5	mg/kg	7.6	< 5	< 5	< 5
Iron	20	mg/kg	-	-	-	26000
Lead	5	mg/kg	10	6.8	14	8.8
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	8.5
Zinc	5	mg/kg	16	< 5	14	< 5

Client Sample ID			TP02_0.1	TP02_1	TP03_0.1	TP04_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60228	S21-Jn60229	S21-Jn60230	S21-Jn60231
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
% Moisture	1	%	16	16	12	18
% Clay	1	%	-	-	-	12
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	-	12
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	-	-	-	5.5
Total Organic Carbon	0.1	%	-	-	-	0.6
Heavy Metals						
Iron (%)	0.01	%	-	-	-	2.6
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	-	-	4.8

Client Sample ID			TP05_0.1	TP05_0.5	TP06_0.1	TP07_0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60232	S21-Jn60233	S21-Jn60234	S21-Jn60235
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	106	108	106	102
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP05_0.1	TP05_0.5	TP06_0.1	TP07_0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60232	S21-Jn60233	S21-Jn60234	S21-Jn60235
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	108	111	103	107
p-Terphenyl-d14 (surr.)	1	%	109	112	101	106
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	109	114	118	119
Tetrachloro-m-xylene (surr.)	1	%	115	118	107	112
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP05_0.1	TP05_0.5	TP06_0.1	TP07_0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60232	S21-Jn60233	S21-Jn60234	S21-Jn60235
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	115	116	116	121
Heavy Metals						
Arsenic	2	mg/kg	7.2	< 2	2.8	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	14	5.3	14	< 5
Copper	5	mg/kg	12	< 5	< 5	< 5
Iron	20	mg/kg	-	-	9100	-
Lead	5	mg/kg	11	< 5	13	< 5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	13	< 5	5.1	< 5
Zinc	5	mg/kg	34	< 5	13	< 5
% Moisture	1	%	11	9.5	12	7.9
% Clay	1	%	-	-	6.0	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	36	-
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	-	-	4.6	-
Total Organic Carbon	0.1	%	-	-	2.2	-
Heavy Metals						
Iron (%)	0.01	%	-	-	0.91	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	-	1.2	-

Client Sample ID			TP07_0.5	TP08_0.1	TP09_0.5	TP09_1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60236	S21-Jn60237	S21-Jn60238	S21-Jn60239
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	-	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	-	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	-	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	-	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	-	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	-	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	-	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	114	98	123
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	131	109	85
p-Terphenyl-d14 (surr.)	1	%	-	143	95	92
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05

Client Sample ID			TP07_0.5	TP08_0.1	TP09_0.5	TP09_1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60236	S21-Jn60237	S21-Jn60238	S21-Jn60239
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Toxaphene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.2	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	-	INT	63	97
Tetrachloro-m-xylene (surr.)	1	%	-	126	113	96
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	-	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	-	< 2	< 2	< 2
Naled	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2

Client Sample ID			TP07_0.5	TP08_0.1	TP09_0.5	TP09_1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60236	S21-Jn60237	S21-Jn60238	S21-Jn60239
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Omethoate	2	mg/kg	-	< 2	< 2	< 2
Phorate	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	-	INT	64	108
Heavy Metals						
Arsenic	2	mg/kg	-	3.7	3.9	5.7
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	-	9.3	15	35
Copper	5	mg/kg	-	5.5	< 5	< 5
Iron	20	mg/kg	26000	-	-	-
Lead	5	mg/kg	-	10	11	8.6
Mercury	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	-	< 5	< 5	7.2
Zinc	5	mg/kg	-	12	12	< 5
% Moisture	1	%	17	8.3	9.6	14
% Clay	1	%	19	-	-	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	26	-	-	-
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	0.1	pH Units	5.1	-	-	-
Total Organic Carbon	0.1	%	0.5	-	-	-
Heavy Metals						
Iron (%)	0.01	%	2.6	-	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	4.5	-	-	-

Client Sample ID			TP10_0.1	TP10_0.5	QA100	QA101
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60240	S21-Jn60241	S21-Jn60242	S21-Jn60243
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			TP10_0.1	TP10_0.5	QA100	QA101
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60240	S21-Jn60241	S21-Jn60242	S21-Jn60243
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	112	117	77	101
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	84	87	81	80
p-Terphenyl-d14 (surr.)	1	%	86	92	86	87
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			TP10_0.1	TP10_0.5	QA100	QA101
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn60240	S21-Jn60241	S21-Jn60242	S21-Jn60243
Date Sampled			Jun 17, 2021	Jun 17, 2021	Jun 17, 2021	Jun 17, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	90	94	90	97
Tetrachloro-m-xylene (surr.)	1	%	89	99	90	80
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	104	115	106	116

Client Sample ID			TP10_0.1	TP10_0.5	QA100	QA101
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S21-Jn60240**	**S21-Jn60241**	**S21-Jn60242**	**S21-Jn60243**
Date Sampled			**Jun 17, 2021**	**Jun 17, 2021**	**Jun 17, 2021**	**Jun 17, 2021**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	13	3.5	20	15
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	60	21	82	25
Copper	5	mg/kg	< 5	< 5	< 5	19
Lead	5	mg/kg	8.5	5.6	10	24
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	23
Zinc	5	mg/kg	< 5	< 5	< 5	64
% Moisture	1	%	10	11	11	22

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jun 30, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 30, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 30, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jun 30, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 30, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Jun 30, 2021	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Organochlorine Pesticides	Sydney	Jun 30, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Jun 30, 2021	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
NEPM Screen for Soil Classification			
Heavy Metals	Sydney	Jun 30, 2021	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Clay	Brisbane	Jul 05, 2021	14 Days
- Method: LTM-GEN-7040			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Sydney	Jun 30, 2021	7 Days
- Method: LTM-INO-4030 Conductivity			
pH (units)(1:5 soil:CaCl2 extract at 25°C as rec.)	Sydney	Jun 30, 2021	7 Days
- Method: LTM-GEN-7090 pH in soil by ISE			
Total Organic Carbon	Melbourne	Jul 08, 2021	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Cation Exchange Capacity	Melbourne	Jul 05, 2021	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
% Moisture	Sydney	Jun 30, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			

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NSW 2500

Project Name: SHOALHAVEN HOSPITAL
Project ID: 8202118201

Order No.: 8202118201
Report #: 806804
Phone: 02 4231 9672
Fax:

Received: Jun 25, 2021 3:15 PM
Due: Jul 2, 2021
Priority: 5 Day
Contact Name: Callum Laker

Eurofins Analytical Services Manager : Ursula Long

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Melbourne Laboratory - NATA Site # 1254											X	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											X	
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	BH01_0.1	Jun 22, 2021		Soil	S21-Jn60212		X		X	X		X
2	BH01_0.5	Jun 22, 2021		Soil	S21-Jn60213		X		X	X		X
3	BH02_0.1	Jun 21, 2021		Soil	S21-Jn60214	X			X	X		X
4	BH03_0.1	Jun 21, 2021		Soil	S21-Jn60215	X			X	X		X
5	BH04_0.1	Jun 22, 2021		Soil	S21-Jn60216		X		X	X		X
6	BH05_0.1	Jun 21, 2021		Soil	S21-Jn60217		X		X	X		X
7	BH05_0.5	Jun 21, 2021		Soil	S21-Jn60218		X		X	X		X
8	BH06_0.1	Jun 22, 2021		Soil	S21-Jn60219		X		X	X		X
9	HA01_0.1	Jun 17, 2021		Soil	S21-Jn60220	X			X	X		X

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Melbourne Laboratory - NATA Site # 1254											X	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											X	
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
10	HA01_0.5	Jun 17, 2021		Soil	S21-Jn60221	X			X	X		X
11	HA02_0.1	Jun 17, 2021		Soil	S21-Jn60222	X			X	X		X
12	HA02_0.9	Jun 17, 2021		Soil	S21-Jn60223	X			X	X		X
13	HA03_0.1	Jun 17, 2021		Soil	S21-Jn60224	X			X	X		X
14	HA03_0.5	Jun 17, 2021		Soil	S21-Jn60225	X			X	X		X
15	HA04_0.1	Jun 17, 2021		Soil	S21-Jn60226		X		X	X		X
16	HA04_0.5	Jun 17, 2021		Soil	S21-Jn60227		X		X	X		X
17	TP02_0.1	Jun 17, 2021		Soil	S21-Jn60228		X		X	X		X
18	TP02_1	Jun 17, 2021		Soil	S21-Jn60229		X		X	X		X
19	TP03_0.1	Jun 17, 2021		Soil	S21-Jn60230		X		X	X		X
20	TP04_0.5	Jun 17, 2021		Soil	S21-Jn60231		X		X	X	X	X

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Melbourne Laboratory - NATA Site # 1254											X	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											X	
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
21	TP05_0.1	Jun 17, 2021		Soil	S21-Jn60232		X		X	X		X
22	TP05_0.5	Jun 17, 2021		Soil	S21-Jn60233		X		X	X		X
23	TP06_0.1	Jun 17, 2021		Soil	S21-Jn60234		X		X	X	X	X
24	TP07_0.1	Jun 17, 2021		Soil	S21-Jn60235		X		X	X		X
25	TP07_0.5	Jun 17, 2021		Soil	S21-Jn60236					X	X	
26	TP08_0.1	Jun 17, 2021		Soil	S21-Jn60237		X		X	X		X
27	TP09_0.5	Jun 17, 2021		Soil	S21-Jn60238		X		X	X		X
28	TP09_1.5	Jun 17, 2021		Soil	S21-Jn60239		X		X	X		X
29	TP10_0.1	Jun 17, 2021		Soil	S21-Jn60240		X		X	X		X
30	TP10_0.5	Jun 17, 2021		Soil	S21-Jn60241		X		X	X		X
31	QA100	Jun 17, 2021		Soil	S21-Jn60242	X			X	X		X

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Melbourne Laboratory - NATA Site # 1254											X	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											X	
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
32	QA101	Jun 17, 2021		Soil	S21-Jn60243	X			X	X		X
33	BH02_0.5	Jun 21, 2021		Soil	S21-Jn60244			X				
34	BH03_0.5	Jun 21, 2021		Soil	S21-Jn60245			X				
35	BH04_0.5	Jun 22, 2021		Soil	S21-Jn60246			X				
36	BH06_0.5	Jun 22, 2021		Soil	S21-Jn60247			X				
37	HA02_0.5	Jun 17, 2021		Soil	S21-Jn60248			X				
38	TP02_0.5	Jun 17, 2021		Soil	S21-Jn60249			X				
39	TP03_0.5	Jun 17, 2021		Soil	S21-Jn60250			X				
40	TP03_1	Jun 17, 2021		Soil	S21-Jn60251			X				
41	TP04_0.1	Jun 17, 2021		Soil	S21-Jn60252			X				
42	TP04_1	Jun 17, 2021		Soil	S21-Jn60253			X				

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Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											X	
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory - NATA Site # 25079												
External Laboratory												
43	TP05_1	Jun 17, 2021		Soil	S21-Jn60254			X				
44	TP06_0.5	Jun 17, 2021		Soil	S21-Jn60255			X				
45	TP06_1	Jun 17, 2021		Soil	S21-Jn60256			X				
46	TP08_0.5	Jun 17, 2021		Soil	S21-Jn60257			X				
47	TP08_1	Jun 17, 2021		Soil	S21-Jn60258			X				
48	TP09_0.1	Jun 17, 2021		Soil	S21-Jn60259			X				
49	TP09_1	Jun 17, 2021		Soil	S21-Jn60260			X				
50	TP10_1	Jun 17, 2021		Soil	S21-Jn60261			X				
Test Counts						10	21	18	31	32	3	31

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

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

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

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

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Iron	mg/kg	< 20			20	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
Total Organic Carbon	%	< 0.1			0.1	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	129			70-130	Pass	
TRH C10-C14	%	87			70-130	Pass	
Naphthalene	%	103			70-130	Pass	
TRH C6-C10	%	128			70-130	Pass	
TRH >C10-C16	%	85			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	101			70-130	Pass	
Toluene	%	107			70-130	Pass	
Ethylbenzene	%	110			70-130	Pass	
m&p-Xylenes	%	112			70-130	Pass	
o-Xylene	%	112			70-130	Pass	
Xylenes - Total*	%	112			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	105			70-130	Pass	
Acenaphthylene	%	105			70-130	Pass	
Anthracene	%	107			70-130	Pass	
Benz(a)anthracene	%	104			70-130	Pass	
Benzo(a)pyrene	%	109			70-130	Pass	
Benzo(b&j)fluoranthene	%	103			70-130	Pass	
Benzo(g.h.i)perylene	%	114			70-130	Pass	
Benzo(k)fluoranthene	%	110			70-130	Pass	
Chrysene	%	101			70-130	Pass	
Dibenz(a.h)anthracene	%	123			70-130	Pass	
Fluoranthene	%	103			70-130	Pass	
Fluorene	%	110			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	116			70-130	Pass	
Naphthalene	%	103			70-130	Pass	
Phenanthrene	%	105			70-130	Pass	
Pyrene	%	103			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	86			70-130	Pass	
4.4'-DDD	%	79			70-130	Pass	
4.4'-DDE	%	91			70-130	Pass	
4.4'-DDT	%	93			70-130	Pass	
a-BHC	%	81			70-130	Pass	
Aldrin	%	89			70-130	Pass	
b-BHC	%	96			70-130	Pass	
d-BHC	%	85			70-130	Pass	
Dieldrin	%	84			70-130	Pass	
Endosulfan I	%	84			70-130	Pass	
Endosulfan II	%	81			70-130	Pass	
Endosulfan sulphate	%	82			70-130	Pass	
Endrin	%	102			70-130	Pass	
Endrin aldehyde	%	90			70-130	Pass	
Endrin ketone	%	75			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
g-BHC (Lindane)	%	88			70-130	Pass	
Heptachlor	%	99			70-130	Pass	
Heptachlor epoxide	%	85			70-130	Pass	
Hexachlorobenzene	%	88			70-130	Pass	
Methoxychlor	%	88			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	117			70-130	Pass	
Dimethoate	%	81			70-130	Pass	
Ethion	%	91			70-130	Pass	
Fenitrothion	%	129			70-130	Pass	
Methyl parathion	%	121			70-130	Pass	
Mevinphos	%	99			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	92			80-120	Pass	
Cadmium	%	97			80-120	Pass	
Chromium	%	103			80-120	Pass	
Copper	%	104			80-120	Pass	
Iron	%	104			80-120	Pass	
Lead	%	104			80-120	Pass	
Mercury	%	111			80-120	Pass	
Nickel	%	105			80-120	Pass	
Zinc	%	103			80-120	Pass	
LCS - % Recovery							
Conductivity (1:5 aqueous extract at 25°C as rec.)	%	87			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S21-Jn60212	CP	%	88			70-130	Pass	
TRH >C10-C16	S21-Jn60212	CP	%	120			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S21-Jn54618	NCP	%	102			70-130	Pass	
Acenaphthylene	S21-Jn54618	NCP	%	101			70-130	Pass	
Anthracene	S21-Jn54618	NCP	%	103			70-130	Pass	
Benz(a)anthracene	S21-Jn54618	NCP	%	101			70-130	Pass	
Benzo(a)pyrene	S21-Jn54618	NCP	%	104			70-130	Pass	
Benzo(b&j)fluoranthene	S21-Jn54618	NCP	%	105			70-130	Pass	
Benzo(g.h.i)perylene	S21-Jn54618	NCP	%	97			70-130	Pass	
Benzo(k)fluoranthene	S21-Jn54618	NCP	%	103			70-130	Pass	
Chrysene	S21-Jn54618	NCP	%	98			70-130	Pass	
Dibenz(a.h)anthracene	S21-Jn54618	NCP	%	103			70-130	Pass	
Fluoranthene	S21-Jn54618	NCP	%	100			70-130	Pass	
Fluorene	S21-Jn54618	NCP	%	106			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S21-Jn54618	NCP	%	100			70-130	Pass	
Naphthalene	S21-Jn54618	NCP	%	100			70-130	Pass	
Phenanthrene	S21-Jn54618	NCP	%	103			70-130	Pass	
Pyrene	S21-Jn54618	NCP	%	100			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	N21-Jn55071	NCP	%	81			70-130	Pass	
4.4'-DDD	N21-Jn55071	NCP	%	75			70-130	Pass	
4.4'-DDE	N21-Jn55071	NCP	%	86			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDT	N21-Jn55071	NCP	%	80			70-130	Pass	
a-BHC	N21-Jn55071	NCP	%	78			70-130	Pass	
Aldrin	N21-Jn55071	NCP	%	83			70-130	Pass	
b-BHC	N21-Jn55071	NCP	%	88			70-130	Pass	
d-BHC	N21-Jn55071	NCP	%	82			70-130	Pass	
Dieldrin	N21-Jn55071	NCP	%	79			70-130	Pass	
Endosulfan I	N21-Jn55071	NCP	%	79			70-130	Pass	
Endosulfan II	N21-Jn55071	NCP	%	77			70-130	Pass	
Endosulfan sulphate	N21-Jn55071	NCP	%	73			70-130	Pass	
Endrin	N21-Jn55071	NCP	%	78			70-130	Pass	
Endrin aldehyde	N21-Jn55071	NCP	%	77			70-130	Pass	
Endrin ketone	N21-Jn55071	NCP	%	73			70-130	Pass	
g-BHC (Lindane)	N21-Jn55071	NCP	%	81			70-130	Pass	
Heptachlor	N21-Jn55071	NCP	%	86			70-130	Pass	
Heptachlor epoxide	N21-Jn55071	NCP	%	75			70-130	Pass	
Hexachlorobenzene	N21-Jn55071	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S21-Jn60213	CP	%	104			75-125	Pass	
Cadmium	S21-Jn60213	CP	%	108			75-125	Pass	
Chromium	S21-Jn60213	CP	%	107			75-125	Pass	
Copper	S21-Jn60213	CP	%	98			75-125	Pass	
Lead	S21-Jn60213	CP	%	106			75-125	Pass	
Mercury	S21-Jn60213	CP	%	110			75-125	Pass	
Nickel	S21-Jn60213	CP	%	93			75-125	Pass	
Zinc	S21-Jn60213	CP	%	85			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S21-Jn60223	CP	%	93			75-125	Pass	
Cadmium	S21-Jn60223	CP	%	101			75-125	Pass	
Chromium	S21-Jn60223	CP	%	104			75-125	Pass	
Copper	S21-Jn60223	CP	%	104			75-125	Pass	
Lead	S21-Jn60223	CP	%	99			75-125	Pass	
Mercury	S21-Jn60223	CP	%	114			75-125	Pass	
Nickel	S21-Jn60223	CP	%	105			75-125	Pass	
Zinc	S21-Jn60223	CP	%	98			75-125	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Methoxychlor	S21-Jn61333	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S21-Jn61333	NCP	%	108			70-130	Pass	
Dimethoate	S21-Jn61333	NCP	%	71			70-130	Pass	
Ethion	S21-Jn61333	NCP	%	130			70-130	Pass	
Fenitrothion	S21-Jn61333	NCP	%	121			70-130	Pass	
Mevinphos	S21-Jn61333	NCP	%	121			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S21-Jn60231	CP	%	98			70-130	Pass	
Naphthalene	S21-Jn60231	CP	%	86			70-130	Pass	
TRH C6-C10	S21-Jn60231	CP	%	96			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S21-Jn60231	CP	%	86			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	S21-Jn60231	CP	%	91			70-130	Pass	
Ethylbenzene	S21-Jn60231	CP	%	92			70-130	Pass	
m&p-Xylenes	S21-Jn60231	CP	%	93			70-130	Pass	
o-Xylene	S21-Jn60231	CP	%	92			70-130	Pass	
Xylenes - Total*	S21-Jn60231	CP	%	93			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S21-Jn60232	CP	%	89			70-130	Pass	
TRH >C10-C16	S21-Jn60232	CP	%	82			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S21-Jn60243	CP	%	104			75-125	Pass	
Cadmium	S21-Jn60243	CP	%	101			75-125	Pass	
Chromium	S21-Jn60243	CP	%	98			75-125	Pass	
Copper	S21-Jn60243	CP	%	97			75-125	Pass	
Lead	S21-Jn60243	CP	%	102			75-125	Pass	
Mercury	S21-Jn60243	CP	%	104			75-125	Pass	
Nickel	S21-Jn60243	CP	%	97			75-125	Pass	
Zinc	S21-Jn60243	CP	%	95			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Toxaphene	S21-Jl00145	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Jn60212	CP	mg/kg	2.1	2.2	6.0	30%	Pass	
Cadmium	S21-Jn60212	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-Jn60212	CP	mg/kg	7.1	6.9	3.0	30%	Pass	
Copper	S21-Jn60212	CP	mg/kg	160	140	12	30%	Pass	
Lead	S21-Jn60212	CP	mg/kg	6.4	7.6	18	30%	Pass	
Mercury	S21-Jn60212	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-Jn60212	CP	mg/kg	12	11	6.0	30%	Pass	
Zinc	S21-Jn60212	CP	mg/kg	63	56	11	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S21-Jn60214	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Naphthalene	S21-Jn60214	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S21-Jn60214	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S21-Jn60214	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S21-Jn60214	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S21-Jn60214	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S21-Jn60214	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S21-Jn60214	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S21-Jn60214	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	S21-Jn60218	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S21-Jn60218	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S21-Jn60218	CP	mg/kg	53	< 50	32	30%	Fail	Q15
TRH >C10-C16	S21-Jn60218	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S21-Jn60218	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S21-Jn60218	CP	mg/kg	230	140	47	30%	Fail	Q15

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S21-Jn60218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Jn60218	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-Jn60218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-Jn60218	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Ethoprop	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S21-Jn60218	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-Jn60218	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-Jn60218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	S21-Jn60219	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S21-Jn60219	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S21-Jn60219	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C10-C16	S21-Jn60219	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S21-Jn60219	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S21-Jn60219	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S21-Jn60219	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Jn60219	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
b-BHC	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-Jn60219	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-Jn60219	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S21-Jn60219	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-Jn60219	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-Jn60219	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S21-Jn60219	CP	%	4.2	4.4	3.0	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S21-Jn60220	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Naphthalene	S21-Jn60220	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S21-Jn60220	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S21-Jn60220	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S21-Jn60220	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S21-Jn60220	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S21-Jn60220	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S21-Jn60220	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S21-Jn60220	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Jn60222	CP	mg/kg	13	13	1.0	30%	Pass	
Cadmium	S21-Jn60222	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-Jn60222	CP	mg/kg	23	23	1.0	30%	Pass	
Copper	S21-Jn60222	CP	mg/kg	19	19	1.0	30%	Pass	
Lead	S21-Jn60222	CP	mg/kg	23	23	<1	30%	Pass	
Mercury	S21-Jn60222	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-Jn60222	CP	mg/kg	23	22	2.0	30%	Pass	
Zinc	S21-Jn60222	CP	mg/kg	62	63	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S21-Jn60229	CP	%	16	15	6.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S21-Jn60230	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S21-Jn60230	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S21-Jn60230	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S21-Jn60230	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Naphthalene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S21-Jn60230	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S21-Jn60230	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S21-Jn60230	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S21-Jn60230	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S21-Jn60230	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S21-Jn60230	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S21-Jn60230	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S21-Jn60230	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S21-Jn60230	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Dibenz(a.h)anthracene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S21-Jn60230	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Jn60230	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-Jn60230	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-Jn60230	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Monocrotophos	S21-Jn60230	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-Jn60230	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-Jn60230	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	S21-Jn60231	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S21-Jn60231	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S21-Jn60231	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C10-C16	S21-Jn60231	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S21-Jn60231	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S21-Jn60231	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S21-Jn60231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Jn60231	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
g-BHC (Lindane)	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-Jn60231	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-Jn60231	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S21-Jn60231	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-Jn60231	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-Jn60231	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron	S21-Jn57300	NCP	mg/kg	3500	3500	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	S21-Jn57305	NCP	uS/cm	120	120	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Jn60232	CP	mg/kg	7.2	5.8	22	30%	Pass	
Cadmium	S21-Jn60232	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-Jn60232	CP	mg/kg	14	12	10	30%	Pass	
Copper	S21-Jn60232	CP	mg/kg	12	9.5	23	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Lead	S21-Jn60232	CP	mg/kg	11	9.5	13	30%	Pass	
Mercury	S21-Jn60232	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-Jn60232	CP	mg/kg	13	10	23	30%	Pass	
Zinc	S21-Jn60232	CP	mg/kg	34	28	19	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Cation Exchange Capacity	S21-Jn60234	CP	meq/100g	1.2	1.0	17	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S21-Jn60239	CP	%	14	14	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Jn60242	CP	mg/kg	20	15	29	30%	Pass	
Cadmium	S21-Jn60242	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-Jn60242	CP	mg/kg	82	71	15	30%	Pass	
Copper	S21-Jn60242	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S21-Jn60242	CP	mg/kg	10	9.2	10	30%	Pass	
Mercury	S21-Jn60242	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-Jn60242	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S21-Jn60242	CP	mg/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Charl Du Preez	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
John Nguyen	Senior Analyst-Metal (NSW)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)
Scott Beddoes	Senior Analyst-Inorganic (VIC)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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APPENDIX

F

PREVIOUS REPORT EXTRACTS

JK Geotechnics
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

Borehole No. 102
1 / 2

BOREHOLE LOG

Client: HEALTH INFRASTRUCTURE NSW
Project: PROPOSED CARPARKS
Location: SHOALHAVEN HOSPITAL, SCENIC DRIVE, SHOALHAVEN, NSW

Job No.: 30760Z **Method:** SPIRAL AUGER **R.L. Surface:** ~26.6 m
Date: 17/8/17 **Datum:** AHD
Plant Type: JK305 **Logged/Checked By:** D.A.F./A.Z.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
						26	1			FILL: Silty sand, fine to coarse grained, dark brown, trace of clay and roots.	M			GRASS COVER
					N = 11 5,5,6					FILL: Silty clay, low to medium plasticity, brown and light brown, with sand, trace of fine to medium grained igneous gravel.	MC>PL			APPEARS MODERATELY COMPACTED
ON COMPLETION OF CORING					N = 8 2,4,4	25	2		CL	SILTY CLAY: low to medium plasticity, orange brown, trace of fine to medium grained sandstone and quartz gravel.	MC>PL	F - St	100 100 90	RESIDUAL
						24				SANDSTONE: fine to coarse grained, orange brown, with low strength iron indurated bands and quartz gravel inclusions.	XW - DW	EL - VL		VERY LOW 'TC' BIT RESISTANCE WITH LOW BANDS
											DW	L		LOW RESISTANCE
						23	3			REFER TO CORED BOREHOLE LOG				
						22	4							
						21	5							
						20	6							

JK_LIB_CURRENT - V8.00.GLB Log J & K AUGERHOLE - MASTER 30760Z SHOALHAVEN.GPJ <<DrawingFile>> 05/09/2017 10:23 Produced by gINT Professional. Developed by Datgel

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JK Geotechnics
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

Borehole No. 102
2 / 2

CORED BOREHOLE LOG

Client: HEALTH INFRASTRUCTURE NSW
Project: PROPOSED CARPARKS
Location: SHOALHAVEN HOSPITAL, SCENIC DRIVE, SHOALHAVEN, NSW

Job No.: 30760Z | **Core Size:** NMLC | **R.L. Surface:** ~26.6 m
Date: 17/8/17 | **Inclination:** VERTICAL | **Datum:** AHD
Plant Type: JK305 | **Bearing:** N/A | **Logged/Checked By:** D.A.F./A.Z.

Water Loss\Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, structure, minor components.	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_s(50)$ EL -0.03, VL -0.1, L -0.3, M -1, H -3, VH -10, EH	DEFECT DETAILS DEFECT SPACING (mm) 500, 300, 100, 50, 30, 10 DESCRIPTION Type, inclination, thickness, planarity, roughness, coating. Specific / General
ON COMPLETION OF CORING		24			START CORING AT 2.80m				
					CORE LOSS 1.45m				
		23	3						
			4		SANDSTONE: fine to coarse grained, red brown, orange brown and light grey, with quartz inclusions.	DW	M		(4.48m) XWS, 0°, 120 mm.t (4.57m) J, SUBVERTICAL, P,S (4.60m) CS, 0°, 10 mm.t
		22					H		
			5		as above, but light grey and light orange brown.	SW			(5.10m) J, 25°, Un, R
100% RETURN		21			SANDSTONE: fine to coarse grained, grey.				(5.58m) Be, 5°
			6		as above, but light orange brown and light grey.				
		20							(6.82m) J, 70°, P, R
			7						
		19							(7.86m) Cr, 0°, 20 mm.t
			8						
		18			END OF BOREHOLE AT 8.85 m				

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JK Geotechnics
307602 BH102 START CORING AT 2.80m
3
CORE LOSS 1.45m
4
5
6
7
8
END OF BH AT
8.85m

JK Geotechnics
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

Borehole No. 103
1 / 2

BOREHOLE LOG

Client: HEALTH INFRASTRUCTURE NSW
Project: PROPOSED CARPARKS
Location: SHOALHAVEN HOSPITAL, SCENIC DRIVE, SHOALHAVEN, NSW

Job No.: 30760Z **Method:** SPIRAL AUGER **R.L. Surface:** ~28.3 m
Date: 17/8/17 **Datum:** AHD
Plant Type: JK305 **Logged/Checked By:** D.A.F./A.Z.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION OF AUGERING						28				FILL: Clayey sand, fine to coarse grained, light orange brown, with silt, trace of fine to coarse grained igneous gravel.	M			GRASS COVER
											MC<PL			APPEARS MODERATELY COMPACTED
					N = 12 5,6,6		1			FILL: Silty clay, low plasticity, light brown, with sand, trace of fine to medium grained igneous and ironstone gravel and concrete fragments.				
						27								
					N = 16 7,9,7					FILL: Silty sand, fine to medium grained, light brown.	M			
ON COMPLETION OF CORING							2							
						26			CL	SANDY CLAY: low to medium plasticity, orange brown and red brown, with silt, trace of fine to coarse grained ironstone gravel.	MC~PL	(F - St)		RESIDUAL
										SANDSTONE: fine to coarse grained, red brown and orange brown, with low to medium strength iron indurated bands.	DW	VL - L		VERY LOW TO LOW 'TC' BIT RESISTANCE
							3			REFER TO CORED BOREHOLE LOG				
						25								
							4							
						24								
							5							
						23								
							6							
						22								

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GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

Borehole No.
103
2 / 2

CORED BOREHOLE LOG

Client: HEALTH INFRASTRUCTURE NSW
Project: PROPOSED CARPARKS
Location: SHOALHAVEN HOSPITAL, SCENIC DRIVE, SHOALHAVEN, NSW

Job No.: 30760Z
Core Size: NMLC
R.L. Surface: ~28.3 m
Date: 17/8/17
Inclination: VERTICAL
Datum: AHD
Plant Type: JK305
Bearing: N/A
Logged/Checked By: D.A.F./A.Z.

Water Loss\Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, structure, minor components.	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_s(50)$ EL .03 VL .1 L .3 M 1 H 3 VH 10 EH	DEFECT DETAILS DEFECT SPACING (mm) 500 300 100 50 30 10	DESCRIPTION Type, inclination, thickness, planarity, roughness, coating. Specific / General
		26			START CORING AT 2.95m					
			3		CORE LOSS 0.98m					
		25								
100% RETURN			4		SANDSTONE: fine to coarse grained, red brown and orange brown, with quartz inclusions.	XW DW	EL H			(4.20m) J, 60°, P, R
		24								(4.48m) XWS, 0°, 110 mm.t
							L			(4.73m) XWS, 0°, 50 mm.t (4.81m) CS, 0°, 60 mm.t
			5				H			
		23					M - H			(5.21m) XWS, 0°, 60 mm.t
			6							(5.77m) J, 30°, P, R
		22								(5.96m) XWS, 10°, 5 mm.t
			7							
		21			END OF BOREHOLE AT 7.22 m					
			8							
		20								

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307602 BH103 START CORING AT 2.95m
3 CORE LOSS 0.98m
4
5
6
7
END OF BH AT 7.22m

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GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

Borehole No. 104
1 / 1

BOREHOLE LOG

Client: HEALTH INFRASTRUCTURE NSW
Project: PROPOSED CARPARKS
Location: SHOALHAVEN HOSPITAL, SCENIC DRIVE, SHOALHAVEN, NSW

Job No.: 30760Z **Method:** SPIRAL AUGER **R.L. Surface:** ~25.5 m
Date: 16/8/17 **Datum:** AHD
Plant Type: JK305 **Logged/Checked By:** D.A.F./A.Z.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION & AFTER 2 HRS						25				FILL: Silty sand, fine to coarse grained, brown and red brown, with fine to medium grained igneous gravel, trace of clay.				GRASS COVER
					N = 7 5,4,3		1		SC	CLAYEY SAND: fine to coarse grained, light brown and red brown, trace of fine to coarse grained ironstone gravel.		(L)		RESIDUAL
					N > 24 5,11,13/ 100mm REFUSAL	24								
						23	2			SANDSTONE: fine to coarse grained, light grey, red brown and orange brown, with low to medium strength iron indurated bands.	DW	VL - L		VERY LOW TO LOW 'TC' BIT RESISTANCE
						22	3							
						21	4					L - M		LOW RESISTANCE
AFTER 40 HRS						20	5							GROUNDWATER MONITORING WELL INSTALLED TO 7.0m, MACHINE SLOTTED 50mm PVC STANDPIPE 7.0m TO 0.1m, CASING 1.0m TO 0.1m, 2mm SAND FILTER PACK 7.0m TO 0.5m, BENTONITE SEAL 0.5m TO 0.1m, COMPLETED WITH A CONCRETED GATIC COVER
AFTER 24 HRS						19	6							

END OF BOREHOLE AT 7.00 m

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Borehole No. 105
1 / 1

BOREHOLE LOG

Client: HEALTH INFRASTRUCTURE NSW
Project: PROPOSED CARPARKS
Location: SHOALHAVEN HOSPITAL, SCENIC DRIVE, SHOALHAVEN, NSW

Job No.: 30760Z **Method:** SPIRAL AUGER **R.L. Surface:** ~27.9 m
Date: 17/8/17 **Datum:** AHD
Plant Type: JK305 **Logged/Checked By:** D.A.F./A.Z.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION										FILL: Silty sand, fine to medium grained, brown and dark brown, trace of fine to medium grained igneous gravel and roots.	M			GRASS COVER APPEARS POORLY TO MODERATELY COMPACTED
					N = 7 3,4,3	27	1			as above, but trace of clay and fine to coarse grained sandstone gravel.				
					N = 14 5,7,7	26	2							
									CL	SILTY CLAY: low to medium plasticity, orange brown and light orange brown.	MC>PL	F - St		RESIDUAL
					N > 6 5,6/ 150mm REFUSAL	25	3						120 80	
AFTER 24 HRS										SANDSTONE: fine to coarse grained, light orange brown and light grey.	DW	L - M		MODERATE 'TC' BIT RESISTANCE
						24	4							
						23	5				SW	H		HIGH RESISTANCE
						22	6			END OF BOREHOLE AT 5.50 m				'TC' BIT REFUSAL GROUNDWATER MONITORING WELL INSTALLED TO 5.5m, MACHINE SLOTTED 50mm PVC STANDPIPE 5.5m TO 2.5m, CASING 2.5m TO 0.1m, 2mm SAND FILTER PACK 5.5m TO 2.0m, BENTONITE SEAL 2.0m TO 0.1m, COMPLETED WITH A CONCRETED GATIC COVER
						21								

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Title: **SITE LOCATION PLAN**

Location: SHOALHAVEN HOSPITAL CAMPUS
SHOALHAVEN, NSW

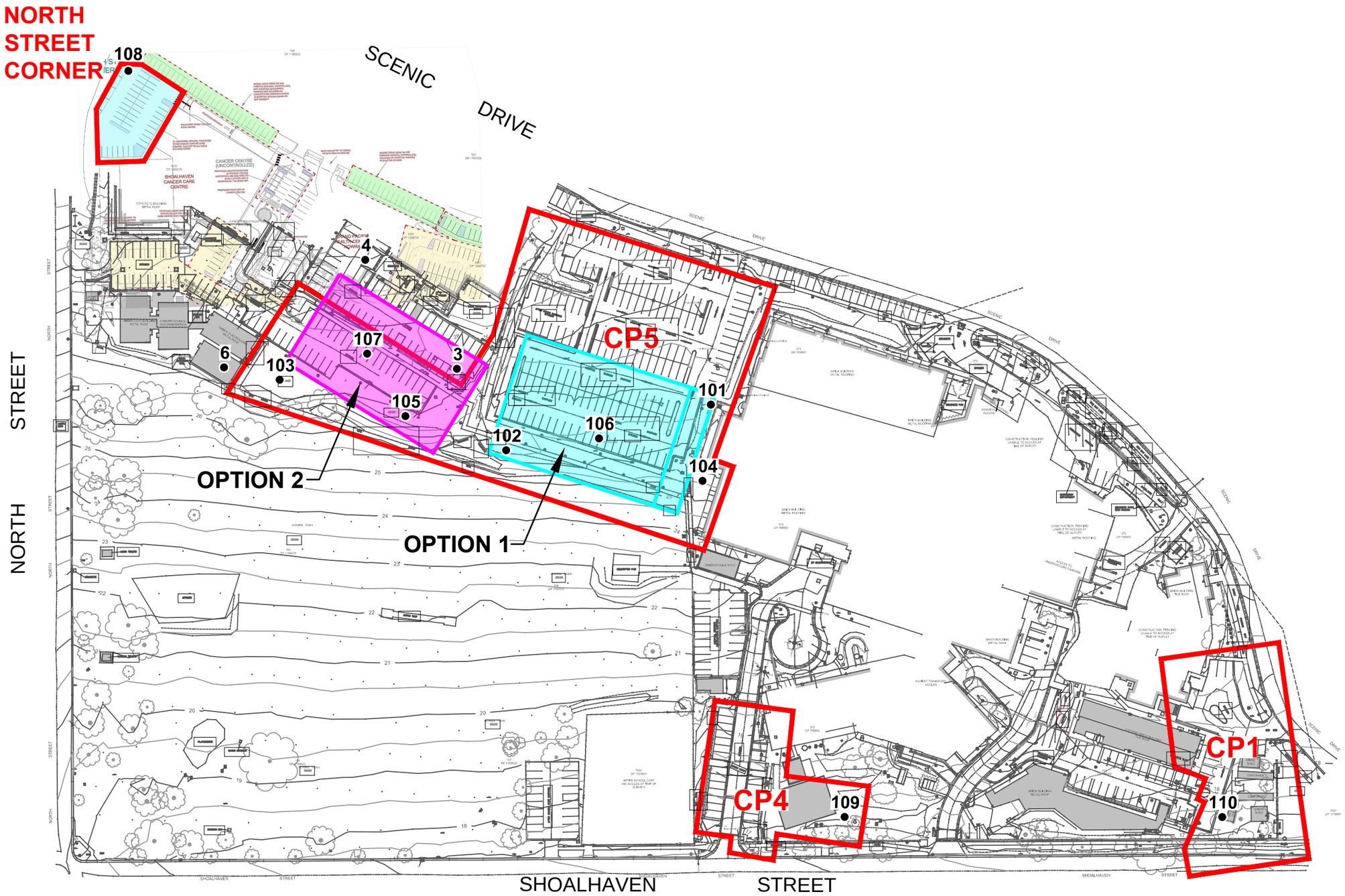
Report No: 30760Z

Figure No: 1

JK **Geotechnics**

PLOT DATE: 30/08/2017 11:59:06 AM DWG FILE: S:\6 GEOTECHNICAL\6F GEOTECHNICAL JOBS\30000'S\30760Z SHOALHAVEN\CAD\30760Z.DWG

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LEGEND

- BOREHOLE
- APPROXIMATE OUTLINE OF PROPOSED CAR PARK

0 14 28 42 56 70
SCALE 1:1400 @A3 METRES

This plan should be read in conjunction with the JK Geotechnics report.

Title: **BOREHOLE LOCATION PLAN**

Location: SHOALHAVEN HOSPITAL CAMPUS SHOALHAVEN, NSW

Report No: 30760Z

Figure No: 2

J K **Geotechnics**

PLOT DATE: 31/08/2017 12:21:10 PM DWG FILE: S:\6 GEOTECHNICAL\6F GEOTECHNICAL JOBS\30000'S\30760Z SHOALHAVEN\CAD\30760Z.DWG

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