

## DETAILED SITE INVESTIGATION

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**Sandhills Wetland Project, Cowper Street, Byron Bay  
NSW**

ENV Job Number: 216010

For:

Byron Shire Council

By:

ENV Solutions

Date:

6 November 2023

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## SCOPE OF ENGAGEMENT AND LIMITATIONS

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## LIST OF ACRONYMS

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Below is a list of commonly used acronyms in this report:

COC	Chain of Custody
COPC	Chemical of Potential Concern
EILs	Ecological Investigation Levels
ENV	ENV Solutions
ESLs	Ecological Screening Levels
HILs	Health Investigation Levels
HSLs	Health Screening Levels
LOR	Limit of Reporting
NEPC	National Environment Protection Council
NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)
NSW EPA	New South Wales Environment Protection Authority
PID	Photo Ionisation Detector
ppm	Parts Per Million (by volume)
QA/QC	Quality Assurance and Quality Control

## EXECUTIVE SUMMARY

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ENV Services Pty Ltd (ENV) was engaged by Byron Shire Council to undertake a Detailed Site Investigation (DSI) at the parcel of land identified as Lot 383 DP728202 (herein referred to as the 'site'). The site is located at Cowper Street, Byron Bay NSW.

ENV understands that Council intends to develop the site as a constructed wetland with walking tracks for public recreation use. The constructed wetland is to be situated in the eastern part of the site and will comprise three (3) cells (W1, W2 and W3) with trafficable spillways connecting each cell and walking tracks shall be constructed across the site area to facilitate recreational use of the site. This DSI has been updated to reflect the updated wetland design (Revision E).

The objective of the DSI was to assess the potential for contamination to exist at the site as a result of historical or current land uses; and determine if further investigation and/or remediation is required for the area to be considered suitable for proposed recreational land use.

The DSI comprised the following scope of work:

- A desktop review of the site conditions, history and surrounding environment;
- An inspection of the site and adjacent areas of land;
- Identification of past and present potentially contaminating activities and chemicals of potential concern (COPC);
- A preliminary conceptual site model (CSM) based on a desktop study and site inspection;
- Collection of soil samples from surface soils at 38 discrete sampling locations;
- Drilling and/or hand auguring of 12 boreholes to identify if fill materials occur at the site;
- Collection of soil samples from three (3) of these boreholes where possible fill materials were encountered;
- Radiological survey of walking tracks and select wetland cell locations;
- Assessment of the soil analytical results against relevant Tier 1 investigation and screening levels presented in the *National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999, as amended 2013* (NEPC, 2013); and
- Assessment of the environmental suitability of the site for the proposed land use, from a chemical perspective.

The desktop study identified that the site remains undeveloped with exception of Cowper Street road corridor, featuring an unsealed track through the center of the site, drainage lines, and several underground services (sewer, stormwater and recycled water main). Sand extraction activities occurred through the 1950's and early 1960's (discontinued by 1966). The potential exists for uncontrolled fill materials to have been imported to rehabilitate the site, these materials may include radioactive mineral sand processing tailings. Landfilling appears to have occurred along the site perimeter, particularly along Lawson Street and adjoining residential properties, which may have extended into the site area.

Demolition waste identified in the south-eastern portion of the site (at the location of sample S-28) indicates that illegal dumping has occurred, and the potential exists for further illegal dumping to have occurred.

In summary, considering the current and past land use of the site, possible contamination sources include:

- Importation of uncontrolled fill material to rehabilitate the site and during development of the surrounding areas (extending into the site area);
- Illegal dumping (e.g. demolition waste and contaminated soil); and,
- Radioactive mineral sand processing tailings.

Based on the identified potential contamination sources, COPC were deemed to include:

- Metals (e.g. arsenic and lead);
- Organo-chlorine pesticides (OCPs);
- Radiation; and,
- Asbestos.

Select samples were scheduled for a broadscale analysis suite to address the potential for a wide range of contaminants to occur in uncontrolled fill materials and illegally dumped waste.

A site and soil investigation and radiological survey were completed on 29-30 June 2021. The investigations were conducted concurrent with an acid sulfate soil investigation and included a total of 11 investigative boreholes to identify if fill materials exist at the site. While fill materials were identified at BH1 and BH2 (undertaken as part of the acid sulfate soils investigation, and located outside of the wetland envelope), fill material was not encountered in any of the boreholes undertaken in the proposed excavation area.

A total of 41 primary soil samples were collected and analysed for the COPC associated with plausible contamination sources. Ten of these samples were additionally scheduled for a broadscale analysis suite to consider the potential for a wide range of contaminants to occur in uncontrolled fill materials and illegally dumped waste. Anthropogenic refuse was identified to occur in the south-eastern portion of the site. Refuse materials included fibrous cement board which was sampled and analysed for asbestos.

Reported sample analysis results indicated concentrations of all targeted analytes well below the adopted assessment criteria, with exception of F3 Fraction hydrocarbons supported by sample S-25 (680 mg/kg exceeding the adopted ESL of 300 mg/kg). Additional Total Recoverable Hydrocarbon (TRH) analysis of samples collected from adjacent sample points and the results of a silica gel clean-up analysis indicated that hydrocarbons supported by S-25 were attributable to naturally occurring hydrocarbons, and thus, have not been considered a concern.

Radiological survey results were compared to calculated screening criteria for public and recreational landuse. All radiation readings across the site were less than the assessment criteria and were recorded at levels relatively consistent with offsite background levels.

**On the basis of the information presented in this report, the site is considered suitable from a contamination perspective for the proposed wetland development (i.e. recreational landuse).**

# 1 INTRODUCTION

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## 1.1 Site Identification and Background

ENV Services Pty Ltd (ENV) was engaged by Byron Shire Council ('Council' or 'the client') to undertake a Detailed Site Investigation (DSI) at the parcel of land identified as Lot 383 DP728202 (herein referred to as the 'site'). The site is located at Cowper Street, Byron Bay NSW. Regional location of the site is shown as Figure 1, Appendix A. This DSI has been updated to reflect the updated wetland design (Revision E).

The site is currently undeveloped with the exception of Cowper Street road reserve (walking track) and several underground services (sewer, storm water, and recycled water main).

ENV understands that Council intends to develop the site as a constructed wetland with walking tracks for public recreation use. The constructed wetland is to be situated in the eastern part of the site and will comprise three (3) cells (W1, W2 and W3) with trafficable spillways connecting each cell with walking tracks across the site area to facilitate recreational use of the site. Preliminary design drawings provided by the client are overlain on site plans presented as Figure 3, Appendix A.

In accordance with the requirements under the State Environmental Planning Policy (Resilience and Hazards 2021, formerly known as SEPP No 55, change of land use) at the site (from undeveloped to recreational) triggers the requirement for a contamination assessment.

## 1.2 Objectives

The primary objective of the DSI was to assess the potential for contamination to exist at the site as a result of historical or current land uses; and determine if further investigation and/or remediation is required for the area to be considered suitable for proposed development.

## 1.3 Scope of Works

The DSI comprised the following scope of work:

- A desktop review of the site conditions, history and surrounding environment;
- An inspection of the site and adjacent areas of land;
- Identification of past and present potentially contaminating activities and chemicals of potential concern (COPC);
- A preliminary conceptual site model (CSM) based on a desktop study and site inspection;
- Collection of soil samples from surface soils at 38 discrete sampling locations;
- Drilling and/or hand auguring of 12 boreholes to identify if fill materials occur at the site;
- Collection of soil samples from three (3) of these boreholes where possible fill materials were encountered;
- Radiological survey of walking tracks and select wetland cell locations;

- Assessment of the soil analytical results against relevant Tier 1 investigation and screening levels presented in the *National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999, as amended 2013* (NEPC, 2013); and
- Assessment of the environmental suitability of the site for the proposed land use, from a chemical perspective.

## 1.4 Technical and Regulatory Framework

The following technical and regulatory framework has been considered in preparing this DSI:

- Contaminated Land Management Act 1997 (CLM Act);
- Environmental Planning and Assessment Act 1979;
- *Managing Land Contamination Planning Guidelines SEPP 55 – Remediation of Land* (Department of Urban Affairs and Planning & NSW Environment Protection Authority [EPA], 1998);
- *Sampling Design Guidelines* (NSW EPA, 1995);
- *National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999, as amended 2013* (NEPC, 2013);
- *Consultants Reporting on Contaminated Land (Contaminated Land Guidelines)* (NSW EPA, 2020);
- *AS 4482.1-2005 Guide to the sampling and investigation of potentially contaminated soil – Non-volatile and semi-volatile compounds* (Australian Standard, 2005);
- *Regional Policy for the Management of Contaminated Land* (Northern Rivers Regional Councils, 2007); and,
- *Recommendations for Limiting Exposure to Ionizing Radiation* - Australian Radiation Protection and Nuclear Safety Agency (ARPANSA 2002).
- State Environmental Planning Policy (Resilience and Hazards) (Department Planning, Industry and Environment & NSW Environment Protection Authority [EPA], 2021);

## 1.5 Previous Reports

A strategic planning study (*Sandhills Estate - A Strategic Planning Study*) was completed for the site in 2007 by GeoLINK. Relevant site information presented in the strategic planning study has been summarised in parts of this report.

ENV is not aware of any other previous environmental investigations undertaken at the site.

## 2 SITE CHARACTERISTICS & SURROUNDING ENVIRONMENT

### 2.1 Site Identification Details and Location

Site identification details have been summarised in Table 1. The site location and current layout are depicted in Figure 1 and Figure 2, Appendix A. The proposed wetland and walking track layout, provided by the client, is shown as Figure 3, Appendix A.

**Table 1: Site Details**

<b>Site Address</b>	Cowper Street, Byron Bay NSW
<b>Real Property Description</b>	Lot 383 DP728202
<b>Site Area</b>	5.4 Hectares (approximate)
<b>Investigation Area</b>	<b>Wetland Cells and Walking Tracks:</b> 1.7 Hectares Refer to Figures 2 and 3, Appendix A
<b>Local Government Area</b>	Byron Shire Council

The greater site comprises an approximate 5.4 ha area of undeveloped land (with exception of pedestrian access through the Cowper St road reserve, running north-south through the centre of the site, surface water drains and several underground Council services (sewer, stormwater and recycled water main).

### 2.2 Land Use Zoning

Under the Byron Local Environmental Plan (BLEP) 2014 the majority of the site is zoned as ‘deferred matter’, the central western portion of the site is zoned ‘Mixed Use’ and the western portion of the site is zoned ‘Public Recreation’. Land surrounding the site features a mix of ‘Low Density Residential’, ‘Medium Density Residential’, ‘Public Recreation’ and ‘Local Centre’. Landuse zoning of the site and immediate surrounds is illustrated as Figure 6, Appendix A.

### 2.3 Surrounding Environment

The site is located within the township of Byron Bay, landuse immediately surrounding the site can be generally summarised as:

- North: Residential properties proceeded by the Pacific Ocean;
- South: Residential properties and sports fields;
- East: Residential properties;
- West: Byron Youth Activities Centre, Byron Court House, and the central business district.

### 2.4 Topography

The site is relatively flat and low lying, with an elevation ranging between 7 and 8 m Australian Height Datum (AHD) (Google Earth Imagery). Land surrounding the site generally grades down to the south-west. Land to the east of the site (Massinger Street and the proceeding area) is elevated. Surface runoff may flow into the site from Massinger Street.

## 2.5 Geology and Soils

The site is situated within the Tyagarah soil landscape. The Tyagarah soil landscape is generally summarised as follows (NSW Department of Planning, Industry and Environment, 2020):

**Soils** - deep (>150 cm), moderately well-drained minimal Prairie Soils near basaltic areas. Deep (>150 cm), well-drained Podzols and Acid Peats near barrier systems

**Geology** - Quaternary estuarine alluvium overlain by and/or mixed with Quaternary (Pleistocene) sands. The sands are generally aeolian, originating from the adjacent beach ridge systems.

The Strategic Planning Study (GeoLINK, 2007) identifies that the Department of Land & Water Conservation have mapped the site as having acid sulfate soils (ASS) risk: class 5 risk in the northern portion and class 3 risk for the remainder of the site. An excerpt of the ASS risk mapping is provided as Figure 9, Appendix A.

ENV have completed an ASS assessment for the proposed wetland area concurrent to this DSI. The ASS assessment (or management plan if required) shall be delivered as a separate report. Thus, ASS has not been discussed further in this DSI.

## 2.6 Surface Water Drainage and Flooding

Information relating to surface water, drainage and stormwater has been summarised from the Strategic Planning Study (GeoLINK, 2007). An excerpt of the GeoLINK stormwater and flooding map is presented as Figure 7, Appendix A.

The areas along the southern boundary of the site are prone to flooding and are mapped as having a 1 in 100-year flood event risk.

The site contains stormwater drainage lines, consisting of an open creek line in the east and piped stormwater lines in the central and south-western areas. A stormwater inlet pit is situated within the Cowper Street road reserve, where it enters the site. Water flowing into this inlet pit travels north along a stormwater pipe that outlets onto Clarkes Beach. During larger rain events, a second pipe flows to the west, to the 'Railway outfall' catchment. Stormwater exceeding the pipe capacity overflows into the site (GeoLINK, 2007).

## 2.7 Groundwater Resources

A search of regional groundwater bores was undertaken on 2 July 2021 using the WaterNSW Realtime Database. Six (6) licensed groundwater bores within 500 m of the site were listed on the database. Details of these bores are summarised in Table 2.

**Table 2: Licensed Groundwater bores**

Bore ID	Distance (approximate) & Direction	Purpose	Installation Depth (m)	Standing Water Level (m)	Completion Date
GW306318	100 m South	Monitoring Bore	4.6	-	2007
GW300932	150 m South	Domestic, Recreation	10.0	-	1997
GW306401	170 m South	Monitoring Bore	1.5	0.6	2007
GW301091	250 m South	Domestic	7.0	-	1995
GW303447	200 m West	Dewatering	13.0	-	-
GW303689	220 m West	Domestic	3.1	1.8	1981

Three of the licensed bores identified on the WaterNSW database have a listed purpose of ‘Domestic’.

The township of Byron Bay is serviced by reticulated water supply. On this basis, it is reasonably assumed that any (potential) water abstraction is used for irrigation of gardens or other non-consumption purposes.

The site and surrounding areas’ topography and surface drainage indicate that regional groundwater likely flows to the south-west.

### 3 SITE HISTORY REVIEW

#### 3.1 Historic Aerial Photographs

Historical aerial photographs of the site were accessed via the NSW Spatial Services Historical Imagery Portal. Six aerial photographs dated 1958, 1966, 1971, 1979, 1987 and 1991 were available for review.

A copy of the aerial photographs is provided as Appendix B.

Information considered relevant to the investigation is summarised in Table 3.

**Table 3: Historic Aerial Photograph Notes**

Photograph Date	Notes
1958	<ul style="list-style-type: none"> <li>The site is undeveloped</li> <li>The northern portion of the site has been cleared of vegetation and historic sand mining activities appear to be occurring in the area</li> <li>Land immediately surrounding the site remains undeveloped with exception of a cricket field to the south of the site</li> <li>Vegetation at the site appears to be sparse, indicating that the area may have been cleared at an earlier time</li> </ul>
1966	<ul style="list-style-type: none"> <li>Vegetation regrowth is occurring in the northern portion of the site, indicating that sand extraction activities have been discontinued</li> <li>The rest of the site remains relatively unchanged</li> </ul>
1971	<ul style="list-style-type: none"> <li>No notable changes</li> </ul>
1979	<ul style="list-style-type: none"> <li>Lawson Street has been constructed to the north of the site</li> <li>Further residential dwellings have been developed on land surrounding the site</li> <li>Surface water drains appear to have been excavated in the south-eastern portion of the site</li> </ul>
1987	<ul style="list-style-type: none"> <li>The site remains relatively unchanged</li> <li>Further residential dwellings have been developed on land surrounding the site</li> </ul>
1991	<ul style="list-style-type: none"> <li>The site remains relatively unchanged</li> <li>Further residential dwellings have been developed on land surrounding the site</li> </ul>

#### 3.2 Contaminated Land Record and Record of Notices

The NSW EPA Contaminated Land Record (EPA Notifications) contains a list of sites which have been notified to the NSW EPA under the Contaminated Land Management Act 1997 (CLM Act). Upon receiving the notification, the EPA then assesses the contamination status of the site and decides whether the contamination is significant enough to warrant formal regulation by the EPA in accordance with the provisions of the CLM Act. The NSW EPA Record of Notices contains selected information about sites which have been issued with a Regulatory Notice by the NSW EPA under the CLM Act.

A search of the Enviroportal Contaminated Land WebApp was undertaken on 2 July 2021. No records were identified within 500 m of the site.

### **3.3 POEO Act Public Register Search**

The Protection of the Environment Operations Act 1997 (POEO Act) Public Register contains information about environment protection licences, licence applications, notices issued under the POEO Act, and pollution studies and reduction programs. The POEO Act Public Register was searched for the Byron Bay region on 2 July 2021. No licences, applications or notices were listed for the site of immediate surrounds.

### **3.4 Cattle Dip Sites**

The NSW Department of Primary Industries' (DPI) Cattle Dip Locator was searched on 2 July 2021. No cattle dips were identified within 500 m of the site.

### **3.5 Summary of Site History**

A review of historic aerials for the region of the site indicates that sand extraction has historically taken place through the 1950's and early 1960s. This activity appears to have ceased by 1966. By 1979, Lawson Street had been developed along the northern perimeter of the site.

Potential exists for uncontrolled fill materials to have been imported to the site as part of the Lawson Street development (the road corridor and adjacent residential land), and to rehabilitate the site upon completion of sand extraction activities. The processing of mineral sands in the Byron Bay Region is known to have produced radioactive tailings which may have been used as fill material at the site.

A search of the NSW EPA Contaminated Land Record, POEO Act Public Register, and NSW DPI Cattle Dip Locator did not identify any other contaminating activities at, or immediately surround the site.

## 4 SITE INSPECTION

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A site inspection was completed concurrently with the soil sampling program on 29-30 June 2021. The aim of the site inspection was to assess the current condition of the site; and record any visible signs of contamination and potential contamination sources not previously identified. Site observations were noted as follows:

- The site appears to be predominantly undeveloped with exception Cowper Street road corridor, featuring an unpaved track through the center of the site, excavated drainage lines, and several underground services (sewer, stormwater and recycled water main);
- Land filling appears to have occurred along the site boundaries and has likely extended into the site around Cowper Street southern access and along the northern site boundary adjoining residential properties situated along Lawson Street;
- A small amount of potentially asbestos containing material (ACM) (fibrous cement board) and painted timber was observed the south-eastern portion of the site (sample location S-28). A soil sample was collected at this location (S-28) along with a sample of the potential ACM (S-28\_AS);
- Numerous campsites of 'displaced people' were observed throughout the site;
- Anthropogenic refuse was noted across the site, occurring in abundance near campsites. While visually unappealing, the observed refuse appeared to be limited to inert items (e.g. food and beverage containers, mattresses, clothing, bicycles and damaged camping equipment);
- The site featured substantial vegetation, obscuring large areas, limiting the ability to identify refuse materials occurring on the ground surface. The potential exists for further refuse to occur at the site, most likely in areas near to adjacent road corridors (Massinger Street, Lawson Street, Cowper Street, and Gilmore Crescent);
- Discrete vegetation stress was observed at the location of sample S-25. The cause of vegetation stress could not be distinguished. Scalding may be associated with contamination or acid sulfate soil impacts. The scalded area was measured using SIXMaps and comprises approximately 3,000 m<sup>2</sup>;
- No soil staining, discoloration or unnatural odours indicative of contamination were noted during the site investigation; and,
- No soils indicative of radioactive sands were identified onsite.

Photographs taken during the site inspection are provided in Appendix C.

## 5 CONCEPTUAL SITE MODEL

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Based on information obtained from the desktop study, a preliminary conceptual site model (CSM) was developed to identify potential sources, exposure pathways and receptors of contamination associated with previous and current land use activities at the site. This information is summarised in the following sub-sections.

### 5.1 Contamination Sources

The desktop study identified that the site remains undeveloped with exception of the Cowper Street road corridor, featuring an unsealed track through the center of the site, drainage lines, and several underground services (sewer, stormwater and recycled water main). Sand extraction activities occurred through the 1950's and early 1960's (discontinued by 1966). The potential exists for uncontrolled fill materials to have been imported to rehabilitate the site, these materials may include radioactive mineral sand processing tailings. Landfilling appears to have occurred along the site perimeter (particularly along Lawson Street and adjoining residential properties) which may have extended into the site area.

Demolition waste identified in the south-eastern portion of the site (at the location of sample S-28) indicates that illegal dumping has occurred, and the potential exists for further illegal dumping to have occurred.

In summary, considering the current and past land use of the site, possible contamination sources include:

- Importation of uncontrolled fill material to rehabilitate the site (i.e. post sandmining) and during development of the surrounding areas (extending into the site area);
- Illegal dumping (e.g. demolition waste and contaminated soil); and,
- Radioactive mineral sand processing tailings.

No surrounding land uses likely to have impacted the environmental condition of the subject site were identified.

### 5.2 Chemicals of Potential Concern

Based on the identified potential contamination sources, COPC were deemed to include:

- Metals (e.g. arsenic and lead);
- Organo-chlorine pesticides (OCPs);
- Radiation; and,
- Asbestos.

Select samples were scheduled for a broadscale analysis suite to address the potential for a wide range of contaminants to occur in uncontrolled fill materials and illegally dumped waste, including:

- Metals (e.g. arsenic and lead);
- OCPs;

- Organophosphate Pesticides (OPPs);
- Benzene, toluene, ethylbenzene and xylene (BTEX);
- Total recoverable hydrocarbons (TRH);
- Polycyclic aromatic hydrocarbons (PAH);
- Polychlorinated Biphenyls (PCBs);
- Phenols;
- Cyanide; and,
- Asbestos in soil.

### 5.3 Potentially Affected Environmental Media

Potentially affected environmental media are deemed to comprise surface soils to a depth of approximately 0.15 mBGL. If imported fill material occurs, soil impacts may exist throughout the soil profile until natural soils. Several boreholes were drilled as part of the site investigation and soil sampling program to identify if fill materials occur.

While other environmental media may be affected by the contamination sources described above, surface and fill soils are considered the most likely media to be directly impacted by contaminants. If the surface soils at the site are contaminated, it is possible that also deeper soils, and/or other environmental media have been impacted, which will then require further investigation.

### 5.4 Potential Migration and Exposure Pathways

Potential migration pathways for the identified COPC include:

- Infiltration, percolation and groundwater flow;
- Vapour and dust emissions;
- Plant uptake and bioaccumulation; and,
- Stormwater run-off.

Subsequently, potential exposure pathways include:

- Inhalation of vapours derived from soil contamination;
- Inhalation of dust particles;
- Dermal contact with soil and dust particles;
- Ingestion of soil and dust particles;
- Direct toxicity for plants and terrestrial/aquatic ecosystem; and
- Ambient absorption (radiation).

The significance of different exposure pathways depends on the chemical properties of the contaminant. OCPs such as DDT and its metabolites, are largely bound to soil particles and as a result ingestion of soil particles is considered the major exposure pathway. However, other OCPs, including aldrin and dieldrin, are readily absorbed by oral, inhalation and dermal exposure routes (NEPC, 2013).

For inorganics (i.e., heavy metals) in soil, ingestion of soil and dust particles is considered the most significant human exposure pathway.

For carcinogenic PAHs, such as benzo(a)pyrene (BaP), the major exposure pathways are ingestion of soil/dust, and dermal absorption. For other more volatile hydrocarbons, such as BTEX, inhalation of vapour is considered the major exposure pathway.

Radiation exposure typically occurs as an ambient exposure. The ingestion of radioactive material, or inhalation of dusts, can lead to significantly increased risk as ionising radiation can directly impact internal organs.

## **5.5 Potential Receptors of Contamination**

Potential receptors of contamination have been identified as:

- Future recreational users of the site;
- Future construction workers on-site;
- Terrestrial and aquatic ecosystems (onsite and offsite where contaminant migration pathways exist); and
- Offsite human and ecological receptors at land receiving excavation spoil, generated as part of the proposed development.

It is noted that the potential for off-site receptors to be exposed to contamination originating from the site depends on the nature and extent of the contamination, soil properties, local surface water and groundwater hydrology, and distance to the receptors. If contamination is identified on-site, additional investigations may be required to identify and assess the risk to potential off-site receptors.

## 6 DATA QUALITY OBJECTIVES

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### 6.1 Step 1: State the Problem

ENV understands that Council intends to develop the site with a constructed wetland, comprising three wetland cells with inlet and overflow infrastructure, and a network of walking tracks for public recreation access. Landuse at the site will change from undeveloped to public recreation. In accordance with the requirements under the State Environmental Planning Policy (Resilience and Hazards formerly known as SEPP No 55), a contamination assessment is required to support the proposed change of landuse.

The purpose of the DSI is to assess the potential for contamination to exist as a result of current or previous land use and assess the potential risk to human and ecological receptors.

### 6.2 Step 2: Identify the Decision(s)

The principal decisions (questions) for this investigation are:

- What are the current and previous land uses at the site and is there a potential for contamination to exist as a result of associated land use activities?
- What are the COPC associated with current and historical land uses?
- Do the concentrations of COPC exceed relevant assessment criteria for the protection of potential receptors?
- Is the site suitable for the proposed residential development from a chemical perspective, or is further investigation and/or remediation required?

### 6.3 Step 3: Inputs into the Decision(s)

To address the decisions in Step 2, the following activities were completed:

- A desktop review of relevant and available information, to gain an understanding of site characteristics, history and potential receptors, as well as to identify gaps in the existing data;
- An inspection of the site and surrounding areas;
- Completion of boreholes to identify if fill material occurs;
- Soil sampling and laboratory analysis of COPC; and
- A radiological survey.

### 6.4 Step 4: Define the Study Boundaries

The study boundaries for the desktop review comprised the property boundaries of the site (Lot 383 DP728202; however, the study boundaries for the site investigation, soil sampling program and radiological survey was limited to the proposed development areas (wetland cells and walking tracks).

The extent of the radiological survey and soil sampling program is referred to as the 'investigation area', which covers approximately 1.7 ha of wetland cell area & walking tracks. The investigation area is depicted in Figure 2, Appendix A.

Temporally, the site investigation and soil sampling program were undertaken over the course of two-day program (29-30 July 2021) and therefore provides a snapshot only of the current soil conditions.

## **6.5 Step 5: Develop the Analytical Approach (Decision Rule)**

### **6.5.1 Soil sampling program**

The number of discrete soil sampling locations required for site characterisation was determined in accordance with the *Sampling Design Guidelines* (NSW EPA, 1995). Considering the size of the wetland cell investigation area (approximately 1.7 ha), a grid size of approximately 30 m, and the number of sampling points required for hot spot detection, a total of 27 discrete soil sampling locations were established using a systematic grid pattern. An additional judgemental sample was also collected based on observations made at the time of the site inspection. Grab Samples were collected from the upper soil stratum (0-0.15 mBGL) supplemented by intrusive borehole samples from potential fill materials (between 0-1.0 mBGL) at select locations. Ten (10) discrete soil samples were collected from select locations along the proposed walking tracks. Laboratory analysis results were compared to generic (Tier 1) investigation and screening levels presented in the *NEPM* (NEPC, 2013).

A total of twelve (12) boreholes were drilled as part of the contamination assessment (and concurrent ASS Investigation) to assess the potential for fill material to occur at the site.

To characterise the investigation area, the following statistical measures were adopted, with the results compared to the adopted assessment criteria:

- Maximum observed contaminant concentration of each COPC; and.
- The 95% upper confidence limit (UCL), using the Student's-t method.

### **6.5.2 Radiological Survey**

Radiological sampling was undertaken at regular intervals along existing accessible walking tracks.

Results of the radiological survey data were compared with investigation trigger criteria adopted from the Radiation Protection Series No. 15 Safety Guide - Management of Naturally Occurring Radioactive Material (NORM) (RPS 15). The ambient radiation screening levels have been adopted as a screening tool for recreational exposure and excavation of soil under the proposed development. If elevated radiation levels are found to occur in the material, additional soil sampling may be required.

### **6.5.3 Quality Assurance**

The quality assurance (QA) samples obtained and analysed as part of the soil sampling program, and their corresponding acceptable limits are presented in Table 5. The QA sampling regime included field and laboratory QA samples and was adopted in accordance with the *NEPM* (NEPC, 2013) and Australian Standards 4482.1 and 4482.2 (1999 and 2005, respectively).

**Table 4: Summary of QA Samples and Acceptable Limits**

QA Sample Type	Media	Frequency	Acceptable Range of Results
<b>Field Samples</b>			
Intra-laboratory duplicate	Soil	1 per 20 primary samples	Relative percent difference (RPD) ≤50%
Inter-laboratory duplicate	Soil	1 per 20 primary samples	RPD ≤50%
<b>Laboratory Samples</b>			
Internal duplicate	Soil	1 per 10 primary samples	Laboratory specified
Matrix Spike	Soil	1 per sampling batch (20 samples)	Laboratory specified
Surrogate Spike	Soil	1 per sampling batch (20 samples)	Laboratory specified
Control Sample	Soil	1 per sampling batch (20 samples)	Laboratory specified
Laboratory Blank	Soil	1 per sampling batch (20 samples)	Results <LOR

## 6.6 Step 6: Specify the Performance or Acceptance Criteria

### 6.6.1 Soil Physiochemical Parameters

Assessment criteria were adopted from Tier 1 investigation levels outlined in *Schedule B(1) Guideline on Investigation Levels For Soil and Groundwater* (NEPC, 2013) and included:

- Health investigation levels (HILs) and health screening levels (HSLs): exposure setting C – Public Open Space, with recreational areas that are fully accessible to the public. This landuse may feature lawns, gardens, vegetated areas and walkways, with some limited areas of hardstand and some areas of exposed soil.
- Ecological investigation levels (EILs) and ecological screening levels (ESLs) for public open space. Site-specific EILs were calculated for selected metals (aged ≥2 years) using the NEPM toolbox/EIL calculator. For these calculations, reasonably expected default values were adopted for pH, cation exchange capacity (CEC), clay content and total organic carbon (TOC), based on modelled soil properties in eSPADE<sup>1</sup> (Environment, Energy and Science, 2021). Generic EILs presented in the NEPM (2013) were also adopted for selected chemicals.

Calculated EILs are provided as Appendix F.

N.B. the investigation levels contained within the *NEPM* (NEPC, 2013) have been established through toxicity tests and field and laboratory experiments. In some cases, insufficient data currently exist to provide thresholds. In these cases, the laboratory analysis result data is simply used as an indicator of the presence and extent of contamination.

<sup>1</sup> Soil properties used for EIL calculations: CEC of 6.5 cmolc/kg dwt, pH of 4.2, clay content of 10 %, and organic carbon content (OC) of 1.7 %.

## 6.6.2 Radiological Survey Screening Criteria

Section 4.8 Site Remediation and Close-out Requirements of RPS 15 presents a criterion for a radiation dose of 1 mSv/annum (equivalent dose of 1.37 uSv/h, adopting a plausible exposure time of up to two (2) hours per day, seven (7) days per week for recreational landuse (as set out in the NEPM)) above typical regional background concentrations. The maximum recorded background radiation level was 0.19 uSv/h. On this basis, a trigger value of 1.56 uSv/h has been adopted for the investigation (background + maximum annual variation). A summary of the calculations is presented as Table 4.

**Table 5: Calculated Radiation Trigger Value**

Equivalent Units	Recorded Background Levels	Maximum Annual Dose Above Background Levels <sup>1</sup>	Calculated Trigger Value (Background + Dose of 1mSv/annum) <sup>2</sup>
Millisieverts / annum	1.66 mSv/annum	1 mSv/annum	2.66 mSv/annum
Micro sieverts / hour	0.10 - 0.19 uSv/h	1.37 uSv/h	1.56 uSv/h

Notes:

1. Assumes a HIL-C exposure setting of 2 hours/day, 7 days/week as set out in the NEPM.
2. Radiation Protection Series No. 15 Safety Guide - Management of Naturally Occurring Radioactive Material (NORM) (RPS 15) criteria for closeout of sites (1mSv/annum above background levels).

The calculated trigger value has also been adopted as a screening tool for investigation of materials to be excavated as part of the proposed development. If the sub-surface soils report measurements of elevated radiation, additional soil sampling will be required.

## 6.7 Step 7: Optimise the Design for Obtaining Data

The sampling regime was designed to collect soil data from surface soils and fill material within the investigation area and with reference to the proposed constructed wetland and walking track footprint. The design incorporated guidance and requirements presented in NEPC (2013) and Australian Standard (2005), as well as other current industry standards relating to the objectives of the assessment. To optimise the design of the investigation, the sampling and analytical program was devised to specifically target information required to meet the DSI objectives.

The sampling plan was reviewed and revised while onsite to address additional contamination sources onsite (illegal dumping point) and accessibility where parts of the site featured heavy vegetation or (potentially) occupied campsites were situated.

## 7 SITE INVESTIGATION METHODOLOGY

### 7.1 Soil Sampling and Analysis Plan

The field sampling program was designed to comprise the collection of soil samples from the upper soil stratum (0 – 0.15 mBGL) at 27 discrete locations from the wetland cell envelopes (S-01 to S-27). An additional sample (S-28) was also collected where building and/or demolition waste (comprising possible ACM and painted timber) was observed in the south-eastern portion of the site, during the site inspection and field sampling program. A sample of the potential ACM (S-28\_AS) was collected and analysed for asbestos in material (presence/absence).

A shovel was used to hand-dig a small test pit to 0.3 mBGL, approximately 1 m in each direction from the location of S-28. No further waste materials were encountered.

A total of twelve (12) boreholes were undertaken as part of this DSI and the concurrent ASS investigation. Borehole locations were selected to provide an even distribution across the proposed wetland excavation area. The subsurface profile was logged to identify if, and to what extent, fill materials occurred at the site.

Boreholes BH1 and BH2 from the ASS investigation encountered potential fill material in the upper stratum. It is noted that the boreholes BH1 and BH2 were situated outside of the potential excavation envelope (due to limited access). As such, no fill material is expected to be disturbed as part of the wetland construction. Samples S-2\_0.4, S-3\_0.5, and S-6\_0.4 were collected from boreholes in the northern portion of the site, near to BH2, to consider the potential for fill materials to occur in the wetland envelope.

No boreholes were undertaken across the walking track areas in the western portion of the site. Surface soils encountered during the sampling program appeared to be natural and no significant ground disturbances are anticipated outside of the wetland cell envelopes.

To assess the proposed walking tracks, a walkover of the proposed track locations was undertaken. Ten (10) discrete soil samples were collected from select locations (TS-01 to TS-10). Soil samples were collected from the upper soil stratum (0 – 0.15 mBGL) to address the potential for contamination to occur in these areas.

Sampling locations are depicted in Figures 4a and 4b, Appendix A. The soil sampling methodology is summarised in Table 6.

**Table 6: Soil Sampling Methodology**

Activity	Details
Soil Sampling	<ul style="list-style-type: none"> <li>▪ Surface samples were collected from 38 discrete locations, 27 of these (S-1 to S-27) established based on a systematic sampling pattern across the wetland area and 10 of these (TS-01 to TS-10) from select points along the approximate 1,500 linear m of proposed walking tracks.</li> <li>▪ An additional soil sample (S-28) and fibre cement board sample (S-28_AS) were collected from soils where building/demolition waste including potential ACM and painted timber was identified in the sou-east portion of the site.</li> </ul>

Activity	Details
	<ul style="list-style-type: none"> <li>▪ Three (3) samples were collected from potential fill materials encountered during the borehole drilling program (S-2_0.4, S-3_0.5, and S-6_0.4).</li> <li>▪ At each discrete sampling location, soil was loosened with a shovel and samples collected using a fresh pair of disposable nitrile gloves. Organic matter such as leaves and twigs were removed from the sample as much as practically possible prior to collection.</li> <li>▪ Samples were collected by appropriately qualified Environmental Scientists from ENV Solutions.</li> </ul>
<b>Field QA Samples</b>	<ul style="list-style-type: none"> <li>▪ Field duplicates were collected and analysed in accordance with NEPC (2013) and Australian Standard (2005).</li> <li>▪ Three sets of field duplicates were collected, each set including intra- and inter-laboratory duplicate samples.</li> </ul>
<b>Laboratory Analysis</b>	<ul style="list-style-type: none"> <li>▪ 28 primary samples and two (2) sets of duplicates were analysed for metals.</li> <li>▪ 10 primary samples and one (1) set of duplicates were analysed for a broadscale analytical suite including Metals, OCPs, OPPs, BTEX, TRHs, PAHs, PCBs, Phenols, Cyanide and asbestos fines.</li> </ul>
<b>Sample Preservation and Transport</b>	<ul style="list-style-type: none"> <li>▪ Samples were placed in laboratory-supplied sample jars, with no headspace.</li> <li>▪ Each sample was labelled with the project number, sampling date and unique sample identifier, and immediately placed into a chilled ice box, pending dispatch to the laboratory.</li> <li>▪ Samples were transported to a laboratory accredited by the National Association of Testing Authorities (NATA) for the required analysis, and with accompanying chain of custody (COC) documentation.</li> </ul>
<b>Decontamination Procedure</b>	<ul style="list-style-type: none"> <li>▪ Any reusable equipment was cleaned between sampling locations using a triple wash procedure. This involved preliminary washing with potable water, further washing with phosphate-free detergent (Decon 90), and final rinsing with potable water.</li> </ul>

## 7.2 Radiological Survey

A radiological survey was undertaken at the site comprising dose rate measurements at defined points, as well as offsite measurements at Gilmore Crescent, Cowper Street (northern and southern entry to the site), Daniel Street, and Massinger Street to establish local background radiation levels (allowing for screening criteria to be calculated). At each measurement location, radiation dose levels were measured using an ISO 9001 compliant dosimeter (SOEKS 01M Dosimeter). Measurements were recorded at 1.0 m above the ground surface after a measurement time of 1 minute (allowing for readings to stabilise). All readings were taken in accordance with the methodology set out in the SOEKS 01M user manual.

### 7.3 Justification of Sampling Design and Analysis Plan

Justification for the sampling design and analysis plan is as follows:

- The number of discrete sampling locations was established in accordance with the *Sampling Design Guidelines* (NSW EPA, 1995), and involved the collection of soil samples from within the proposed wetland excavation footprint.
- Field-based sampling locations, including stratum and depth, were based on the results of the site history review, site inspection observations and identified COPC;
- Subsurface samples were collected from boreholes where potential fill material was encountered;
- Due to the fact that the site has largely remained undeveloped, broadscale analysis of 10 discrete samples was considered sufficient to assess to assess the risk of contamination from uncontrolled fill and illegal dumping activities;
- Additional samples (S-28 and S-28\_AS) were collected from soil and of fibre cement board where construction/demolition debris were encountered in the south-eastern portion of the site;
- COPC include contaminants that are persistent in the environment have potential to exist in uncontrolled fill material imported to the site or have been illegally dumped at the site; and
- Survey of ambient radiation levels is considered a suitable screening tool to provide practical and economically effective identification of radiation hotspots (i.e. locations where mineral sand processing tailings have been used as fill). If elevated radiation is encountered, samples may be required.
- Due to the revised wetland design, samples TS-01, TS-02, TS-03 & TS-04 are located in the neighbouring allotment Lot 457 DP1087879 targeting the walking tracks. The walking tracks are not include in the revised wetland design.

## 8 RESULTS

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### 8.1 Laboratory Analysis Results

Laboratory analysis results reported concentrations of metals within expected background concentrations with exception of slightly elevated concentrations of lead in S-02, S-02\_0.4, S-06, S-08 and S-09. Noting that these elevated concentrations were substantially lower than the adopted assessment criteria. No OCPs, OPPs, BTEX, PAH, PCBs, Cyanide or Asbestos were detected (i.e. concentrations below the laboratory limit of reporting [LOR]).

A TRH F3 Fraction of 680 mg/kg was reported for sample S-25, exceeding the adopted ecological screening level of 300 mg/kg. All other reported TRH concentrations were less than the assessment criteria, with majority of samples supporting concentrations below the LOR.

In consideration of the TRH F3 Fraction of 680 mg/kg reported for sample S-25, four (4) samples (S-16, S-24, S-56 and S-27) collected from adjacent sampling locations were scheduled for TRH analysis.

The analytical results reported detectable concentrations of F3 and F4 fraction hydrocarbons, however, all concentrations were less than the assessment criteria.

Laboratory analysis of TRH using the silica gel method was subsequently requested for samples S-25 and S-26 (sample supporting the greatest concentrations of TRH) to remove naturally occurring hydrocarbons and only show mineral (petroleum based) hydrocarbons. The silica gel analysis results (all non-detect with exception of an F3 Fraction of 100 mg/kg (at the LOR) for S-25) indicated that TRH concentrations detected on-site are naturally occurring, polar compounds and are not associated with previous or current land use activities. The source of the compounds is unknown but may be associated with periodic inundation of the investigation area with surface water containing tannins.

Laboratory analysis results are provided in Appendix D. Laboratory issued reports and certificates are provided as Appendix E.

### 8.2 Radiological Survey Results

Radiation dose measurements were recorded at the locations presented in Figure 5, Appendix A. The recorded dose rates ranged between 0.09 uSv/h and 0.25 uSv/h. Noted to be less than the calculated screening threshold of 1.56 uSv/h.

Further to discrete measurements, radiation levels were observed while navigating across the site to consider the potential for discrete hotspots of fill materials to exist.

Elevated dose readings of up to 1.01 uSv/h were noted while navigating to TS-10, upon review of GPS location data, these elevated readings appeared to be confined to the Massinger Street Road reserve.

Regardless, the elevated readings were compared to the calculated screening criteria (1.56 uSv/h) and noted to be within acceptable limits for the proposed landuse.

The survey measurements and locations are presented in Figure 5 Appendix A.

### 8.3 QA/AC Results

Quality assurance and quality control (QA/QC) involved an assessment of the completeness, comparability, representativeness, precision and accuracy of the investigation and collected data. QA/QC indicators and results are presented in Table 7.

**Table 7: Summary of QA/QC Indicators and Results**

QA/QC Indicator	Compliance	Details
Details of Sampling Team	Yes	<ul style="list-style-type: none"> <li>Field sampling was undertaken by ENV’s appropriately qualified Environmental Scientists Ben Pieterse and Rob Todhunter</li> </ul>
Sampling Plan Adhered To	Yes	<ul style="list-style-type: none"> <li>All planned samples were collected and hence a complete dataset obtained</li> </ul>
Decontamination of Equipment	Yes	<ul style="list-style-type: none"> <li>Reusable equipment was cleaned between sampling locations using potable water</li> </ul>
Sample Collection	Yes	<ul style="list-style-type: none"> <li>Laboratory supplied jars used (no headspace).</li> <li>Collected samples placed in cooler box with ice.</li> <li>Each sample labelled with a unique sample ID.</li> <li>Samples collected in accordance with the methodology detailed in Section 7.1.</li> </ul>
Chain of Custody	Yes	<ul style="list-style-type: none"> <li>COC was completed with full and demonstrable delivery of samples. COC documentation is presented in Appendix E.</li> </ul>
Holding Times	Yes	<ul style="list-style-type: none"> <li>Samples analysed within the laboratory specified holding times.</li> </ul>
Sufficient Duplicates Analysed	Yes	<ul style="list-style-type: none"> <li>Field duplicates (inter- and intra-laboratory) collected in accordance with NEPC (2013) and Australian Standard (2005), with a ratio of 1 duplicate per 20 primary samples.</li> <li>Field duplicates were collected with the following primary samples: <ul style="list-style-type: none"> <li>➤ S-6_0.4: QA1 and QA1A</li> <li>➤ TS-2: QA2 and QA2A</li> <li>➤ S-28: QA3 and QA3A</li> </ul> </li> </ul>
Field Duplicate Results – Relative Percentage Difference (RPD)	Yes	<ul style="list-style-type: none"> <li>RPD calculated between the primary sample and each of the corresponding duplicates. The calculated RPDs are tabulated and presented in Appendix D. The majority of calculated RPDs were below the acceptable threshold of <math>\leq 50\%</math> or could not be calculated as one (1) or more of the sample pair supported analyte concentrations below the LOR. Two RPD exceedances were noted, each of these RPD exceedances were deemed a result of concentrations <math>&lt;10</math> times the LOR.</li> </ul>
Analyses NATA accredited	Yes	<ul style="list-style-type: none"> <li>Primary samples were analysed by Envirolab in Sydney, which is NATA accredited for the analyses required.</li> <li>Intra-laboratory samples analysed by the NATA accredited laboratory Eurofins.</li> </ul>
Laboratory Internal QC	Yes	<ul style="list-style-type: none"> <li>Satisfactory internal quality control data reported.</li> </ul>

QA/QC Indicator	Compliance	Details
		<ul style="list-style-type: none"> <li>▪ Analytical methods used are presented in the Laboratory Reports, Appendix E.</li> </ul>

## 8.4 Summary of Data Usability

Based on the QA/AC results presented in Section 8.3 and the RPD results table (Appendix D), the accuracy, completeness and comparability of the analytical results is considered suitable to meet the objectives of this assessment, and to provide sufficient confidence in the primary dataset for interpretative purposes. N.B. no data has been excluded from the soil data sets for interpretation.

## 9 DISCUSSION

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A review of the analytical results indicated that all COPC concentrations were less than the adopted assessment criteria (and below the LOR for most analytes) with exception of an elevated TRH F3 Fraction concentration, supported by sample S-25 (680 mg/kg, exceeding the ecological screening level of 300 mg/kg). In consideration of the TRH F3 Fraction of 680 mg/kg reported for sample S-25, four (4) samples (S-16, S-24, S-56 and S-27) collected from adjacent sampling locations were scheduled for TRH analysis. The analytical results reported detectable concentrations of F3 and F4 fraction hydrocarbons, however, all concentrations were less than the assessment criteria.

As there were no field indicators of hydrocarbon contamination observed during the site investigation, it was considered likely that the aforementioned detectable TRH concentrations are attributable to natural sources. As such, Samples S-25 and S-26 were scheduled for analysis of TRH using the silica gel method to remove naturally occurring hydrocarbons and only show mineral (petroleum based) hydrocarbons. The silica gel analysis results (all non-detect with exception of an F3 Fraction of 100 mg/kg (at the LOR) for S-25) indicated that TRH concentrations detected on-site are naturally occurring, polar compounds and are not associated with previous or current land use activities. The source of the compounds is unknown but may be associated with periodic inundation of the investigation area with surface water containing tannins.

The radiological survey observed elevated radiation dose rates readings of up to 1.01 uSv/h while navigating along the eastern boundary of the site. A review of geographic data indicated that the area supporting elevated radiation levels was confined to the Massinger Street road reserve. Regardless, the elevated readings were compared to the calculated screening criteria (1.56 uSv/h) and noted to be within acceptable limits for the proposed landuse.

During the site investigation program, a small amount of potential ACM (fibrous cement board) and painted timber was observed the south-eastern portion of the site (sample location S-28). The potential ACM material was sampled along with a soil sample collected from below the refuse materials. No asbestos was detected in the either the material or soil sample and all COPC analysed were below the assessment criteria.

Investigative boreholes were undertaken as part of this DSI and the concurrent ASS investigation. The subsurface profile was logged to identify if, and to what extent, fill materials occurred at the site.

Boreholes BH-1 and BH2 from ENVs ASS investigation encountered potential fill material in the upper stratum. It is noted that the boreholes BH1 and BH2 were situated outside of the potential excavation envelope (due to limited access). As such, no fill material is expected to be disturbed as part of the wetland construction. Samples S-2\_0.4, S-3\_0.5, and S-6\_0.4 were collected from boreholes in the northern portion of the site, near to BH2, to consider the potential for fill materials to occur in the Wetland envelope. No evidence of fill material was evident from the analytical results. As such, no fill material is expected to be disturbed as part of the wetland construction.

## 10 CONCLUSION

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ENV has conducted a DSI to support the development of a multi cell wetland and recreational tracks at the site. A desktop site history review was undertaken, followed by a site investigation, soil sampling program and radiological survey.

A total of 41 primary soil samples were collected and analysed for the COPC associated with plausible contamination sources. Ten of these samples were additionally scheduled for a broadscale analysis suite to consider the potential for a wide range of contaminants to occur in uncontrolled fill materials and illegally dumped waste.

Anthropogenic refuse was identified to occur in the south-eastern portion of the site. Refuse materials included fibrous cement board which was sampled and analysed for asbestos (results were negative).

A review of the sample analysis results indicated that the concentrations of all targeted analytes were reported to be well below the adopted assessment criteria, with exception of F3 Fraction hydrocarbons supported by sample S-25 (680 mg/kg exceeding the adopted ESL of 300 mg/kg). Additional TRH analysis of samples collected from adjacent sample points and the results of a silica gel clean-up analysis indicated that hydrocarbons supported by S-25 were attributable to naturally occurring hydrocarbons, and thus, have not been considered a concern.

Investigative boreholes were completed as part of the concurrent ASS investigation and throughout the wetland envelope. No fill materials were identified to occur within the proposed wetland. On this basis, no fill materials are expected to be disturbed during excavations for construction of the proposed wetland.

Radiological survey results were compared to screening criteria calculated for public and recreational landuse. All radiation readings across the site were less than the assessment criteria and were recorded at levels relatively consistent with offsite background levels.

**On the basis of the information presented in this report, the site is considered suitable from a contamination perspective for the proposed wetland development (i.e. recreational landuse).**

## 11 REFERENCES

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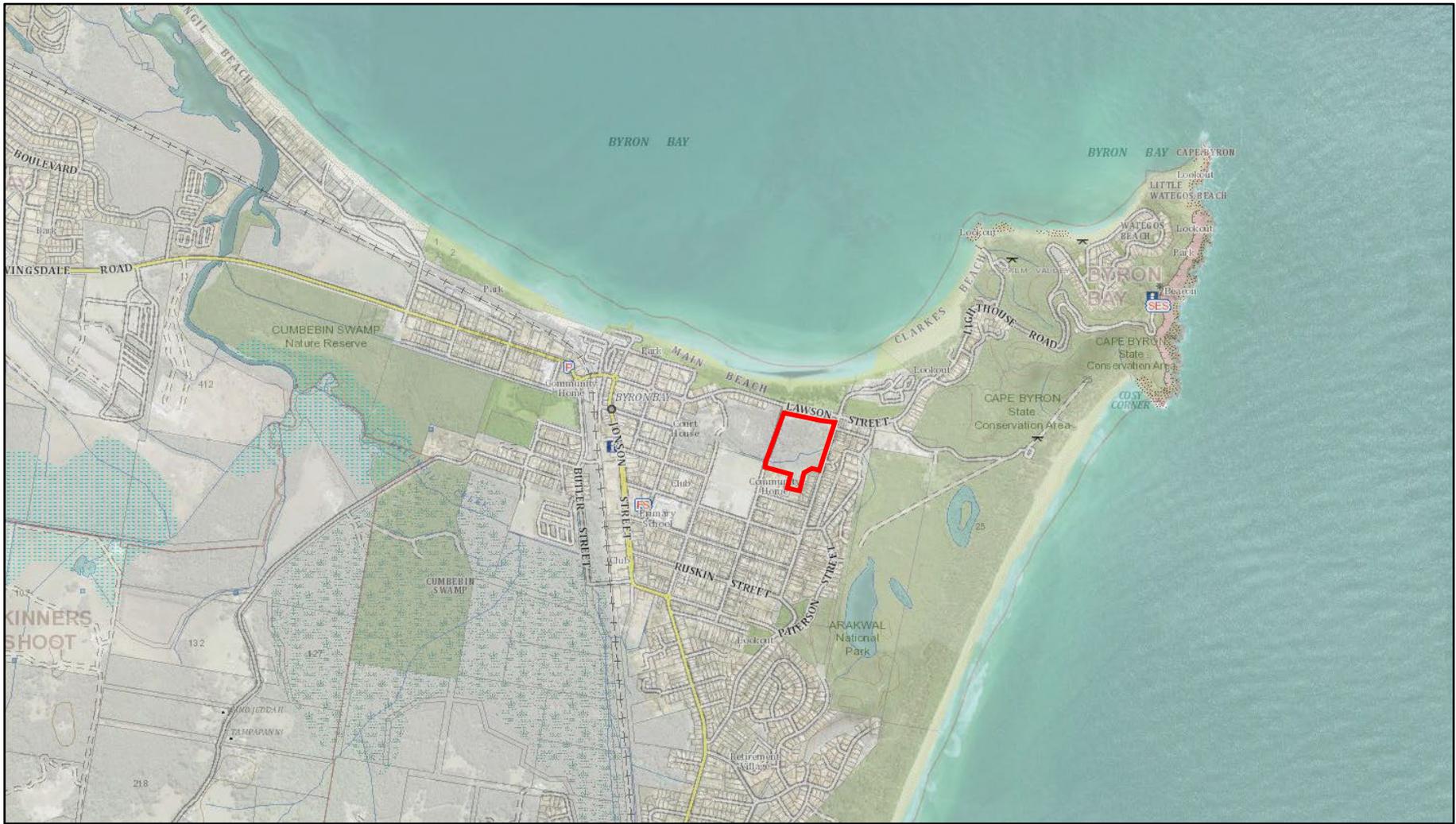
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# APPENDIX A

Figures



Site Location (Approximate)



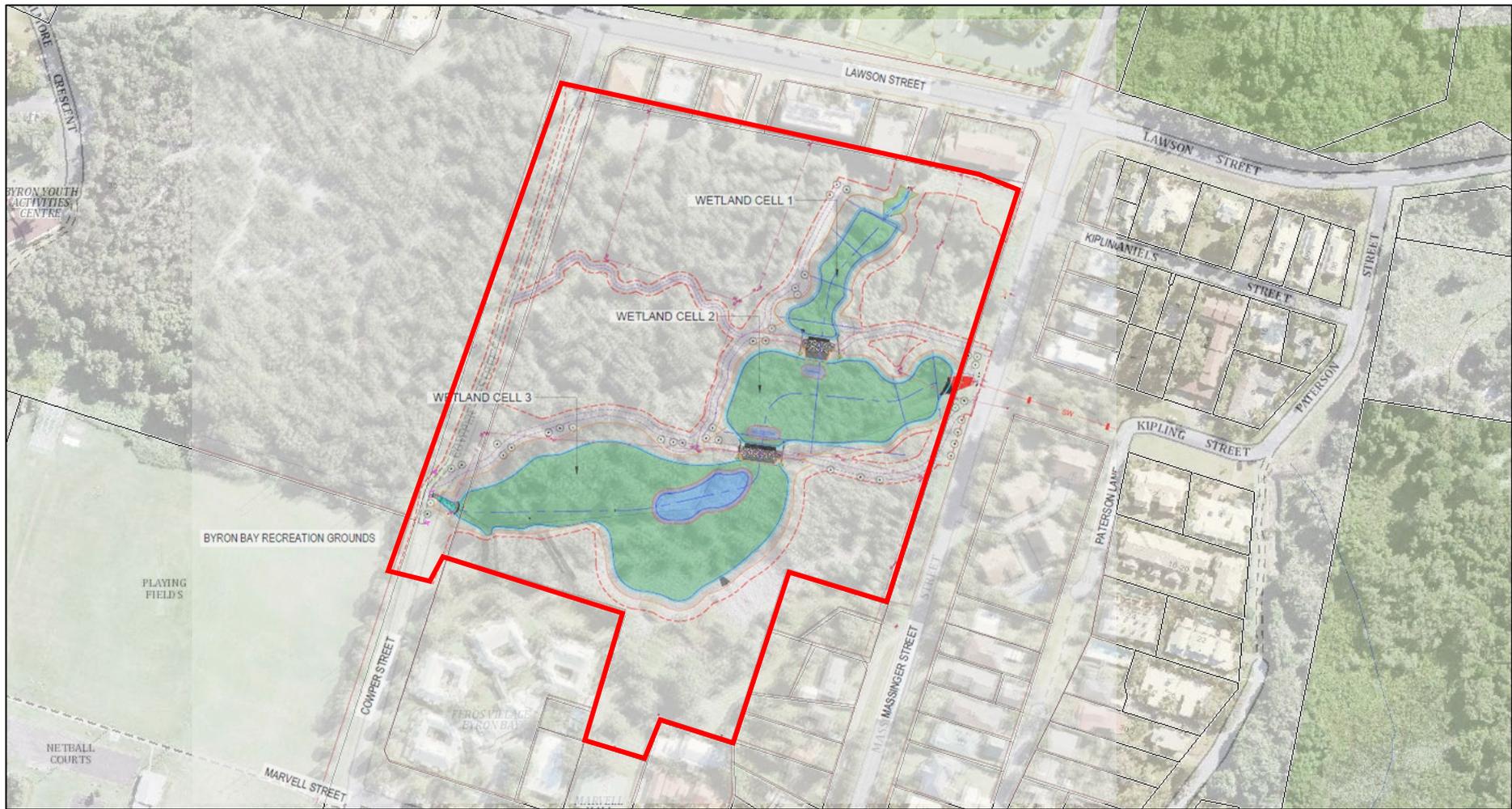
**Figure 1 – Site Location**  
Sandhills Wetland  
Cowper Street, Byron Bay, NSW



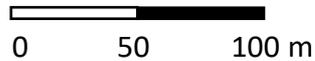
Site Location (Approximate)



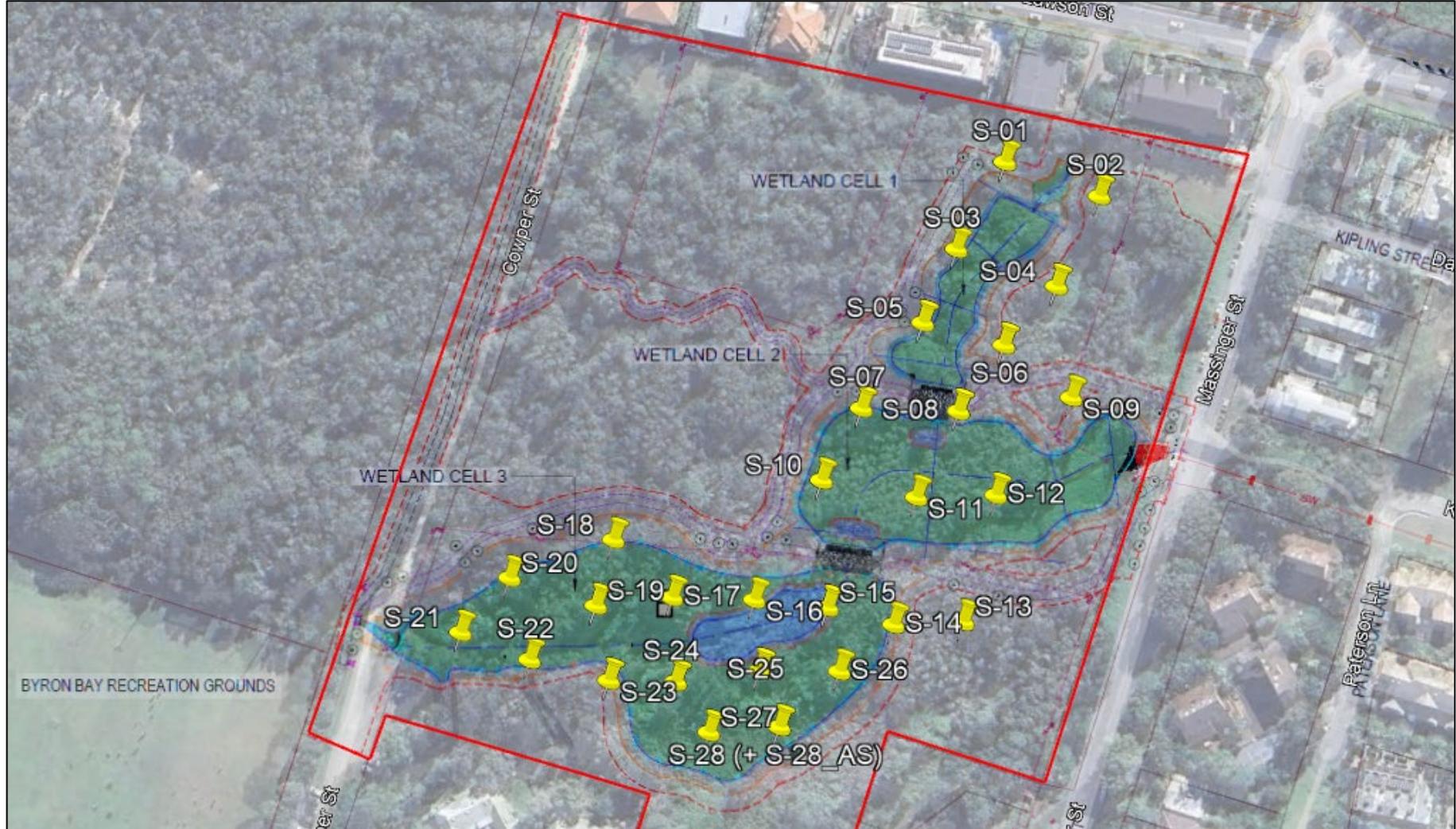
**Figure 2 – Existing Site Layout**  
Sandhills Wetland  
Cowper Street, Byron Bay, NSW



Site Location (Approximate)



**Figure 3 – Proposed Development**  
Sandhills Wetland  
Cowper Street, Byron Bay, NSW



**Figure 4a Wetland Sample Locations**  
 Sandhills Wetland  
 Cowper Street, Byron Bay, NSW

**Project:** 216010

**Client:** Byron Shire Council

**Assessment Date:** 29-30 June 2021



 Site Location (Approximate)



**Figure 4b – Walking Track Sample Locations**  
Sandhills Wetland  
Cowper Street, Byron Bay, NSW

**Project:** 216010

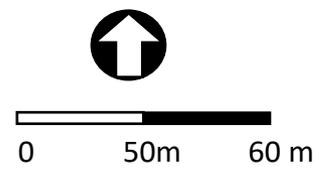
**Client:** Byron Shire Council

**Assessment Date:** 29-30 June 2021

Image source: SIXMaps (2015) & Planit Consulting (2021)



- Site Location (Approximate)
- 0.09 Measurement location (Approximate) Reading (uSv/hr)
- 1.01 Offsite elevated reading (Approximate) Reading (uSv/hr)



**Figure 5 – Radiological Survey Results**  
Sandhills Wetland  
Cowper Street, Byron Bay, NSW

**Project:** 216010  
**Client:** Byron Shire Council  
**Assessment Date:** 29-30 June 2021

Image source: SIXMaps (2015) & Planit Consulting (2021)

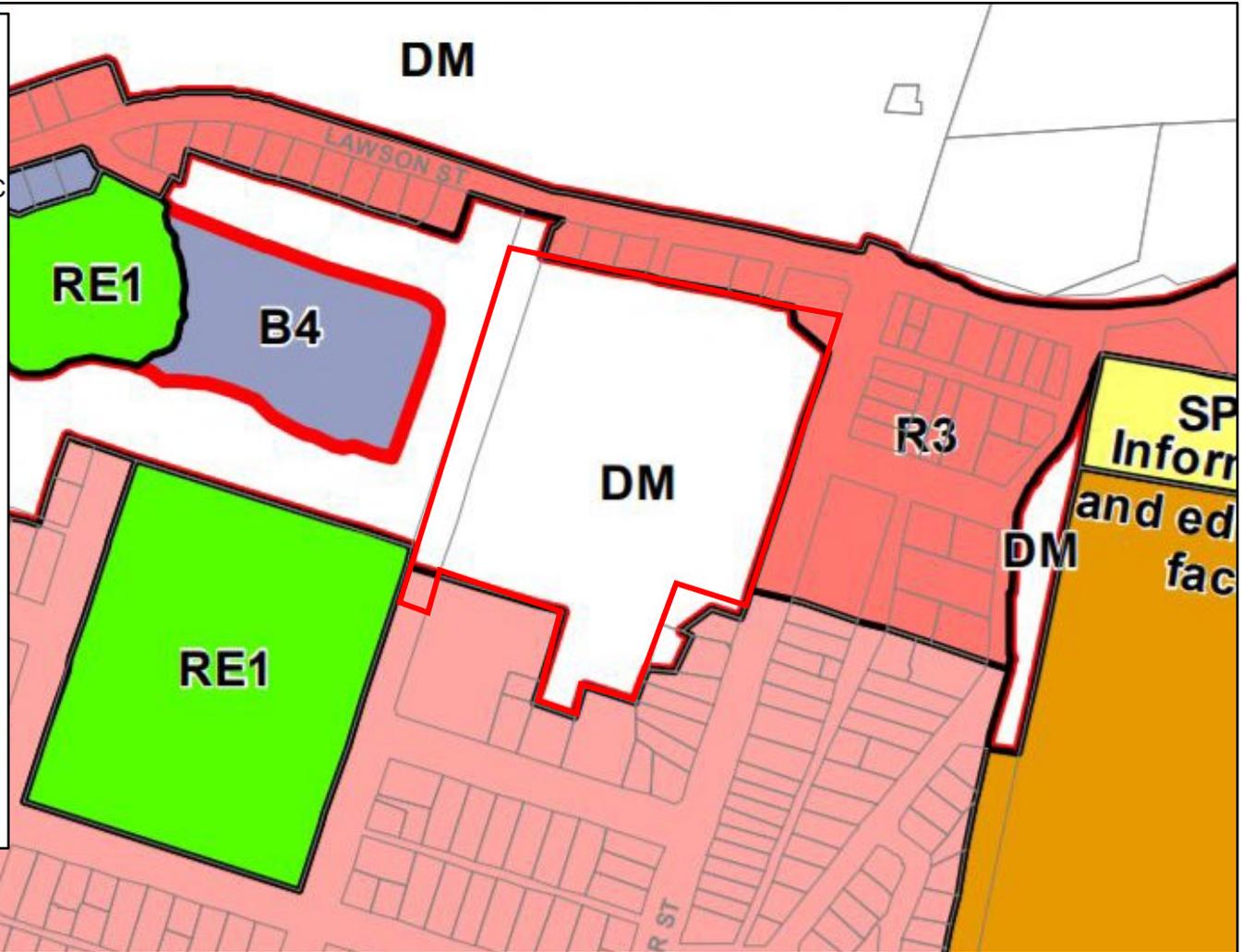


# Byron Local Environmental Plan 2014

Land Zoning Map - Sheet LZN\_003CC

### Zone

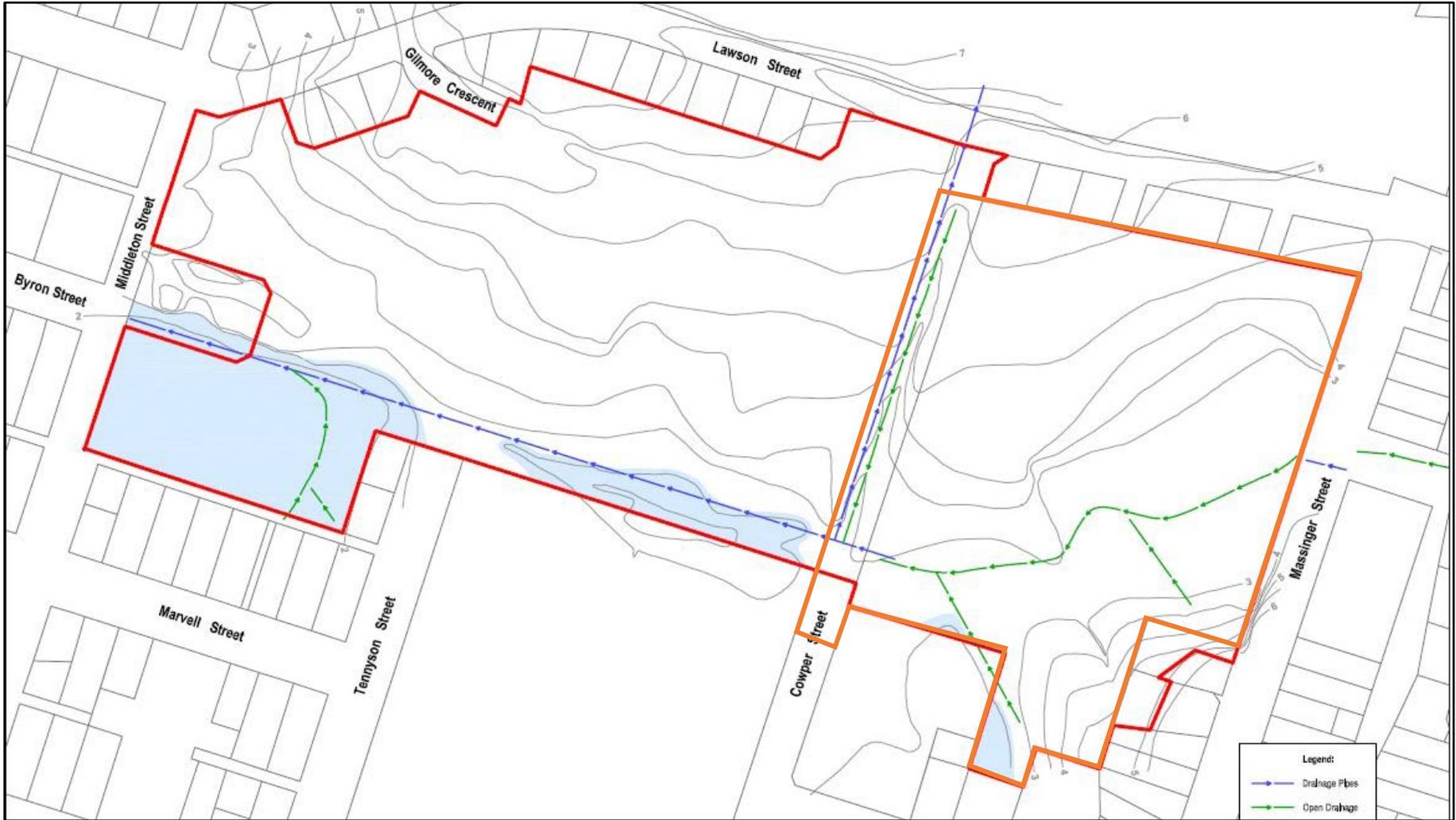
- B1 Neighbourhood Centre
- B2 Local Centre
- B4 Mixed Use
- B7 Business Park
- E1 National Parks and Nature Reserves
- E2 Environmental Conservation
- E3 Environmental Management
- IN1 General Industrial
- IN2 Light Industrial
- R2 Low Density Residential
- R3 Medium Density Residential
- R5 Large Lot Residential
- RE1 Public Recreation
- RE2 Private Recreation
- RU1 Primary Production
- RU2 Rural Landscape
- RU5 Village
- SP1 Special Activities
- SP2 Infrastructure
- SP3 Tourist
- W1 Natural Waterways
- W2 Recreational Waterways
- DM Deferred Matter



Site Location (Approximate)



Figure 6 – Landuse Zoning  
Sandhills Wetland  
Cowper Street, Byron Bay, NSW



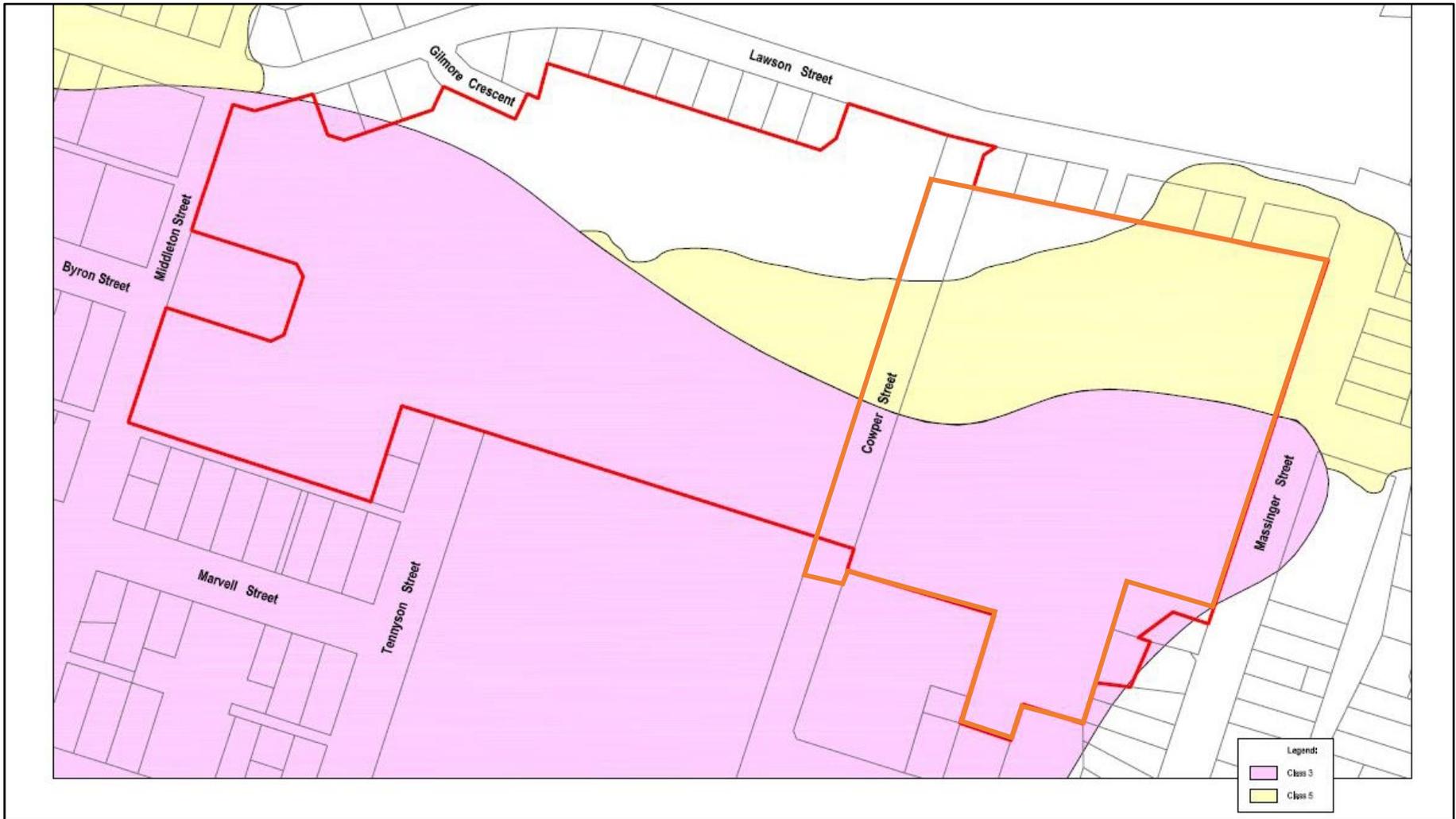
-  Strategic Investigation Boundary (Approximate)
-  Site Location (Approximate)



**Figure 7 – Drainage and Flood Risk**  
 Sandhills Wetland  
 Cowper Street, Byron Bay, NSW

Image source: GeoLink (2007)





-  Strategic Investigation Boundary (Approximate)
-  Site Location (Approximate)



**Figure 9 – Acid Sulfate Soil Risk**  
Sandhills Wetland  
Cowper Street, Byron Bay, NSW

# **APPENDIX B**

Client Preliminary Plans

# SANDHILLS WETLAND DETAILED DESIGN PACKAGE

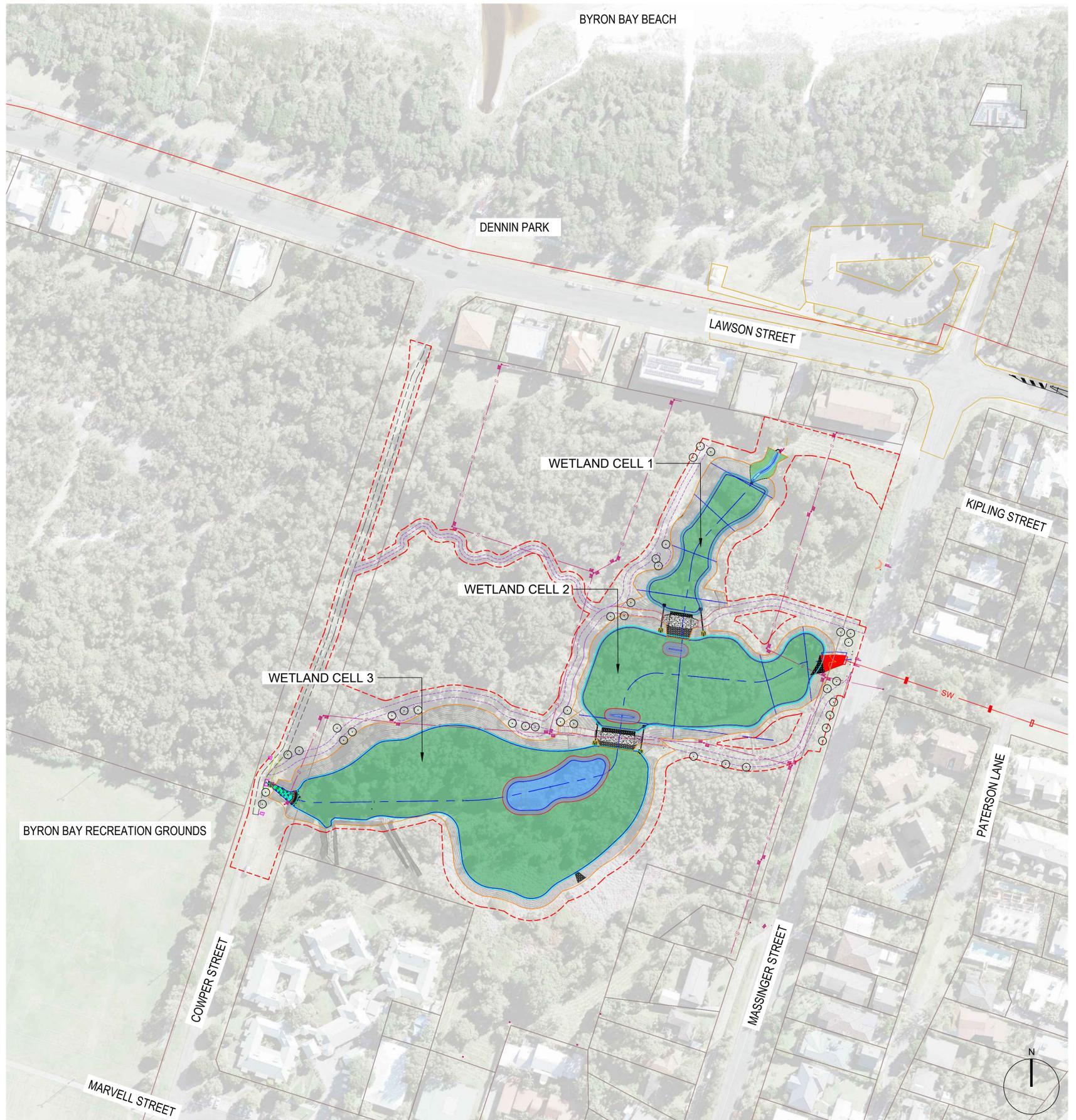
REV E 13.12.2022 100%



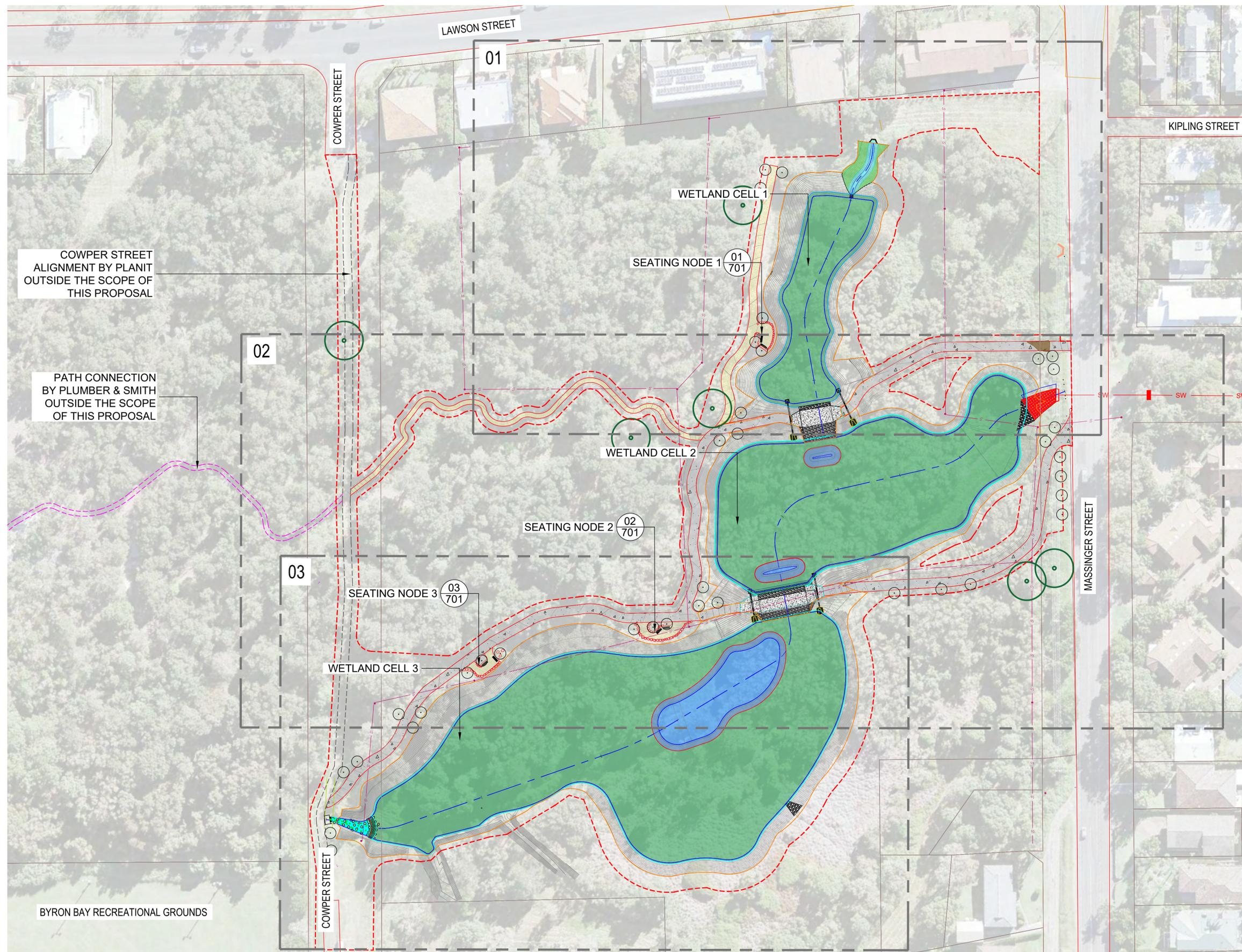
SHEET NO.	DRAWING NAME	SCALE
1-191194_DD_001	COVER SHEET & LOCALITY PLAN	1:1000@A1
1-191194_DD_002	SITE CONTEXT & SHEET LAYOUT PLAN	1:600@A1
1-191194_DD_003	SITE CUT & FILL PLAN	1:600@A1
1-191194_DD_004	SITE EXTENTS	1:600@A1
1-191194_DD_101	EARTHWORKS & LAYOUT PLAN 01	1:250@A1
1-191194_DD_102	EARTHWORKS & LAYOUT PLAN 02	1:250@A1
1-191194_DD_103	EARTHWORKS & LAYOUT PLAN 03	1:250@A1
1-191194_DD_201	EARTHWORKS - SECTIONS CELL 1	AS SHOWN
1-191194_DD_202	EARTHWORKS - SECTIONS CELL 2	AS SHOWN
1-191194_DD_203	EARTHWORKS - SECTIONS CELL 3	AS SHOWN
1-191194_DD_301	CIVIL DETAILS - CELL 1 INLET	AS SHOWN
1-191194_DD_302	CIVIL DETAILS - CELL 1 OUTLETS	AS SHOWN
1-191164_DD_303	CIVIL DETAILS - CELL 2 OUTLETS	AS SHOWN
1-191164_DD_304	CIVIL DETAILS - CELL 3 OUTLET	AS SHOWN
1-191164_DD_305	CIVIL DETAILS - CONCRETE	AS SHOWN
1-191194_DD_401	CIVIL & LANDSCAPE SPECIFICATION	NA
1-191194_DD_402	CIVIL & LANDSCAPE SPECIFICATION	NA
1-191194_DD_500	LANDSCAPE PLANTING SCHEDULES	NA
1-191194_DD_501	LANDSCAPE MATERIALS & PLANTING PLAN 01	1:250@A1
1-191194_DD_502	LANDSCAPE MATERIALS & PLANTING PLAN 02	1:250@A1
1-191194_DD_503	LANDSCAPE MATERIALS & PLANTING PLAN 03	1:250@A1
1-191194_DD_601	LANDSCAPE SECTIONS	1:50@A1
1-191194_DD_602	LANDSCAPE SECTIONS	1:50@A1
1-191194_DD_603	LANDSCAPE SECTIONS	1:50@A1
1-191194_DD_701	LANDSCAPE DETAILS - SEATING NODES	AS SHOWN
1-191194_DD_702	LANDSCAPE DETAILS - HARDWORKS	AS SHOWN
1-191194_DD_703	LANDSCAPE DETAILS - SOFTWORKS	AS SHOWN
1-191194_DD_704	LANDSCAPE DETAILS - PLANTING MATRIXES	AS SHOWN
1-191194_DD_801	LANDSCAPE PLANTING SPECIFICATION	NA

**NOTES:**  
Not for Construction. Do not scale off drawings.

SCALE 1:1000 @ A1



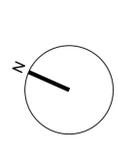
01  
001 SITE CONTEXT & SHEET LAYOUT PLAN



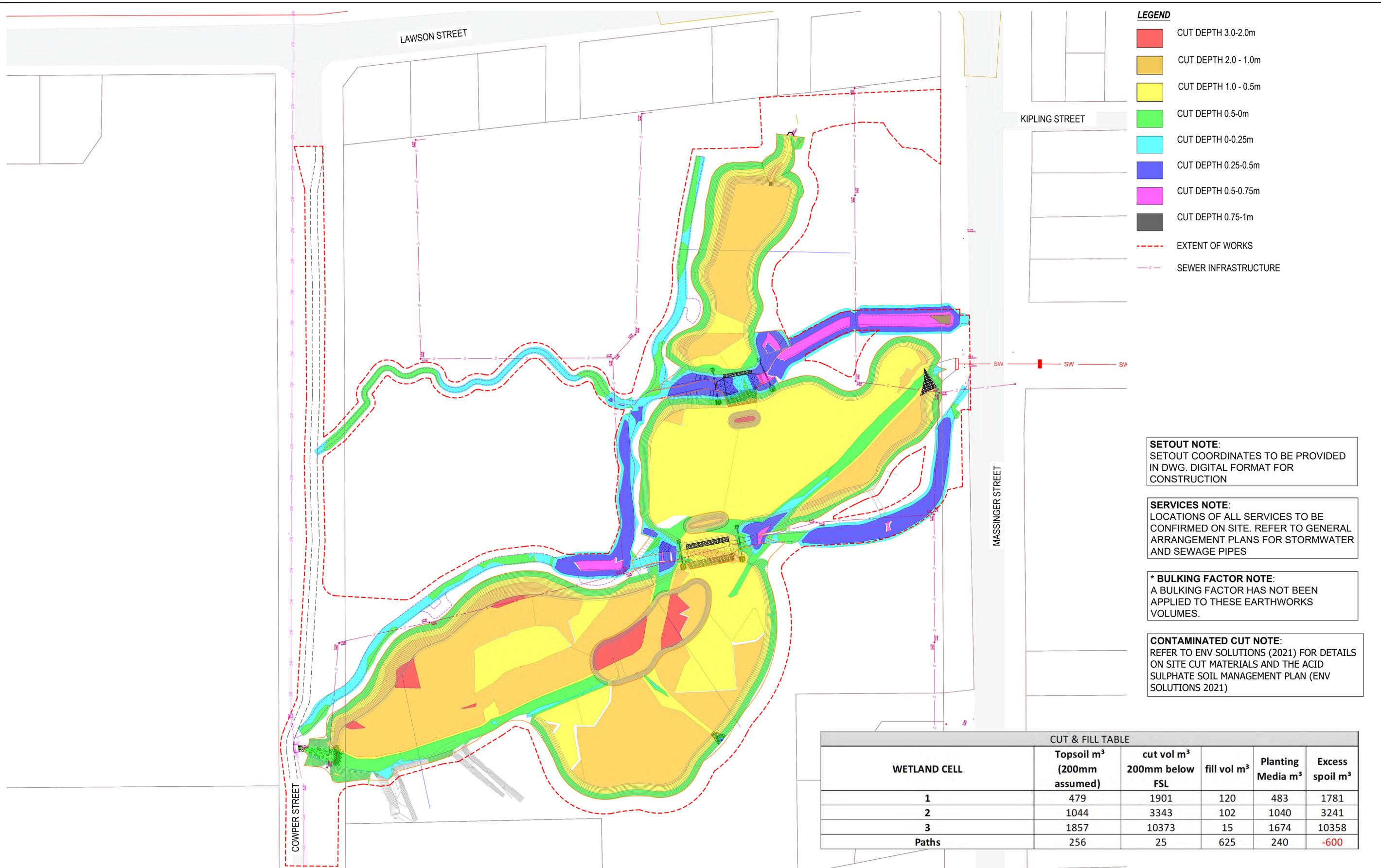
**LEGEND**

-  REINFORCED CONCRETE PATH  
REFER DETAIL 01\_602
-  DECOMPOSED GRANITIC SAND PATH  
REFER DETAIL 02\_602
-  EXISTING TREE RETAINED  
PROTECTED TO MEET AS 4970-2009
-  PROPOSED FEATURE TREE  
REFER PLANTING PLANS 501-503
-  EXTENT OF EARTH WORKS
-  OPERATING WATER LEVEL (OWL)
-  FINISHED FLOOR LEVEL (FFL)
-  EXTENT OF WORKS
-  PROPOSED 0.2m CONTOURS
-  SEWER INFRASTRUCTURE
-  SEWER ACCESS HOLE
-  SW PIPE HEADWALL
-  CADESTRAL BOUNDARIES
-  COWPER STREET ALIGNMENT
-  PATH ALIGNMENT BY OTHERS

REV.	ISSUE / AMENDMENTS	DATE
A	PRE-DETAILED DESIGN PACKAGE COUNCIL REVIEW	17.11.2021
B	DETAILED DESIGN PACKAGE 70%	28.02.2022
C	DETAILED DESIGN PACKAGE 100%	02.11.2022
D	DETAILED DESIGN PACKAGE AMENDMENTS 100%	17.11.2022
E	DETAILED DESIGN PACKAGE FINAL 100%	13.12.2022



DO NOT SCALE FROM PLANS. TO BE ADAPTED ON SITE BY CONTRACTOR & CONFIRMED BY THE PROJECT SUPERVISOR, SIZING, CALCULATIONS, STRUCTURES, & COMPACTION TO BE CONFIRMED BY ENGINEER OR SUITABLY QUALIFIED PERSONS. ENGINEERS CERTIFICATE BY OTHERS.



- LEGEND**
- CUT DEPTH 3.0-2.0m
  - CUT DEPTH 2.0 - 1.0m
  - CUT DEPTH 1.0 - 0.5m
  - CUT DEPTH 0.5-0m
  - CUT DEPTH 0-0.25m
  - CUT DEPTH 0.25-0.5m
  - CUT DEPTH 0.5-0.75m
  - CUT DEPTH 0.75-1m
  - EXTENT OF WORKS
  - SEWER INFRASTRUCTURE

**SETOUT NOTE:**  
SETOUT COORDINATES TO BE PROVIDED IN DWG. DIGITAL FORMAT FOR CONSTRUCTION

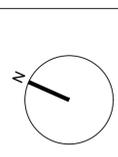
**SERVICES NOTE:**  
LOCATIONS OF ALL SERVICES TO BE CONFIRMED ON SITE. REFER TO GENERAL ARRANGEMENT PLANS FOR STORMWATER AND SEWAGE PIPES

**\* BULKING FACTOR NOTE:**  
A BULKING FACTOR HAS NOT BEEN APPLIED TO THESE EARTHWORKS VOLUMES.

**CONTAMINATED CUT NOTE:**  
REFER TO ENV SOLUTIONS (2021) FOR DETAILS ON SITE CUT MATERIALS AND THE ACID SULPHATE SOIL MANAGEMENT PLAN (ENV SOLUTIONS 2021)

CUT & FILL TABLE					
WETLAND CELL	Topsoil m <sup>3</sup> (200mm assumed)	cut vol m <sup>3</sup> 200mm below FSL	fill vol m <sup>3</sup>	Planting Media m <sup>3</sup>	Excess spoil m <sup>3</sup>
1	479	1901	120	483	1781
2	1044	3343	102	1040	3241
3	1857	10373	15	1674	10358
<b>Paths</b>	256	25	625	240	<b>-600</b>

REV.	ISSUE / AMENDMENTS	DATE
A	PRE-DETAILED DESIGN PACKAGE COUNCIL REVIEW	17.11.2021
B	DETAILED DESIGN PACKAGE 70%	28.02.2022
C	DETAILED DESIGN PACKAGE 100%	02.11.2022
D	DETAILED DESIGN PACKAGE AMENDMENTS 100%	17.11.2022
E	DETAILED DESIGN PACKAGE FINAL 100%	13.12.2022



DO NOT SCALE FROM PLANS. TO BE ADAPTED ON SITE BY CONTRACTOR & CONFIRMED BY THE PROJECT SUPERVISOR, SIZING, CALCULATIONS, STRUCTURES, & COMPACTION TO BE CONFIRMED BY ENGINEER OR SUITABLY QUALIFIED PERSONS. ENGINEERS CERTIFICATE BY OTHERS.

# **APPENDIX C**

Photolog

<b>Client Name</b> Byron Shire Council	<b>Site Location</b> Sandhills Wetland - Cowper Street, Byron Bay, NSW	<b>Project</b> Detailed Site Investigation
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<b>Photo No.</b> 1	<b>Date</b> 29-30 July 2021	
<b>Description</b> Image showing inert refuse at the location of TS-2.		

<b>Photo No.</b> 2	<b>Date</b> 29-30 July 2021	
<b>Description</b> Image showing inert refuse in the north-western portion of the site.		

<b>Client Name</b> Byron Shire Council	<b>Site Location</b> Sandhills Wetland - Cowper Street, Byron Bay, NSW	<b>Project</b> Detailed Site Investigation
---	---	---

<b>Photo No.</b> 3	<b>Date</b> 29-30 July 2021	
<b>Description</b> Image showing scalded vegetation at the location of S-25.		

<b>Photo No.</b> 4	<b>Date</b> 29-30 July 2021	
<b>Description</b> Image showing Geiger counter reading at TS-1.		

<b>Client Name</b> Byron Shire Council	<b>Site Location</b> Sandhills Wetland - Cowper Street, Byron Bay, NSW	<b>Project</b> Detailed Site Investigation
---	---	---

<b>Photo No.</b> 5	<b>Date</b> 29-30 July 2021	
<b>Description</b> Image showing the ground surface at the location of S-20.		

<b>Photo No.</b> 6	<b>Date</b> 29-30 July 2021	
<b>Description</b> Image showing field duplicates QA2 & QA2A being collected with primary sample TS-2.		

<b>Client Name</b> Byron Shire Council	<b>Site Location</b> Sandhills Wetland - Cowper Street, Byron Bay, NSW	<b>Project</b> Detailed Site Investigation
---	---	---

<b>Photo No.</b> 7	<b>Date</b> 29-30 July 2021	
<b>Description</b> Image showing a campsite in the central-north of the site.		

<b>Photo No.</b> 8	<b>Date</b> 29-30 July 2021	
<b>Description</b> Image showing possible ACM at the location of sample S-28.		

<b>Client Name</b> Byron Shire Council	<b>Site Location</b> Sandhills Wetland - Cowper Street, Byron Bay, NSW	<b>Project</b> Detailed Site Investigation
---	---	---

<b>Photo No.</b> 9	<b>Date</b> 29-30 July 2021	
<b>Description</b> Image showing the soil profile at the location of S-6, a 1.0 m profile is shown, comprising natural silty sand (left) overlaying sands.		

<b>Photo No.</b> 10	<b>Date</b> 29-30 July 2021	
<b>Description</b> Image showing typical site vegetation cover at the location of S-18		

# **APPENDIX D**

Laboratory Results and RPD Tables



Environmental Standards	Asbestos		Benzene, Toluene, Ethylbenzene & Xylenes (BTEX)					Total Recoverable Hydrocarbons (TRH)					Phenols	Halogenated Benzenes	Inorganics				
	Asbestos fibres	Asbestos fibres	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	C6-C10 Fraction	F1 (C6-C10 minus BTEX)	>C10-C16 Fraction	F2 (>C10-C16 Fraction minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	Phenolics Total	Hexachlorobenzene	Moisture Content	Cyanide Total
	Detect	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand			0.2	0.5	1	2	1	3	25	25	50	50	100	100	50	5	0.1	0.1	0.5
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																			
NEPM 2013 Table 1A(1) HILs Rec C Soil																			
EQL																			
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand																			
>=0m, <1m																			
>=1m, <2m																			
>=2m, <4m																			
>=4m																			
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space																			
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil			50	85	70			105		180	120	120	300	2,800					
>=0m, <2m			50	85	70			105		180	120	120	300	2,800					
NEPM 2013 Table 1A(1) HILs Rec C Soil																	10		

Field ID	Date	Matrix Type	Asbestos fibres	Asbestos fibres	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	C6-C10 Fraction	F1 (C6-C10 minus BTEX)	>C10-C16 Fraction	F2 (>C10-C16 Fraction minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	Phenolics Total	Hexachlorobenzene	Moisture Content	Cyanide Total
S-01	29/06/2021	Soil	0		<0.2	<0.5	<1	<2	<1	<3	<25	<25	<50	<50	<100	<100	<50	<5	<0.1	9.5	<0.5
S-02	29/06/2021	Soil																	<0.1	19	
S-02_0.4	29/06/2021	Soil																	<0.1	26	
S-03	29/06/2021	Soil																	<0.1	17	
S-03_0.5	29/06/2021	Soil																	<0.1	5.8	
S-04	29/06/2021	Soil																	<0.1	42	
S-05	29/06/2021	Soil																	<0.1	9.6	
S-06	29/06/2021	Soil	0		<0.2	<0.5	<1	<2	<1	<3	<25	<25	<50	<50	<100	<100	<50	<5	<0.1	42	<0.5
S-06_0.4	29/06/2021	Soil																	<0.1	17	
S-07	29/06/2021	Soil																	<0.1	37	
S-08	29/06/2021	Soil																	<0.1	49	
S-09	29/06/2021	Soil																	<0.1	41	
S-10	29/06/2021	Soil																	<0.1	49	
S-11	29/06/2021	Soil																	<0.1	31	
S-12	29/06/2021	Soil	0		<0.2	<0.5	<1	<2	<1	<3	<25	<25	<50	<50	<100	<100	<50	<5	<0.1	15	<0.5
S-13	29/06/2021	Soil																	<0.1	49	
S-14	29/06/2021	Soil																	<0.1	46	
S-15	29/06/2021	Soil	0		<0.2	<0.5	<1	<2	<1	<3	<25	<25	<50	<50	<100	<100	<50	<5	<0.1	26	<0.5
S-16	29/06/2021	Soil											<50		<100	<100	<50		<0.1	21	
S-17	29/06/2021	Soil																	<0.1	21	
S-18	29/06/2021	Soil	0		<0.2	<0.5	<1	<2	<1	<3	<25	<25	<50	<50	<100	<100	<50	<5	<0.1	9.5	<0.5
S-19	29/06/2021	Soil																	<0.1	35	
S-20	29/06/2021	Soil																	<0.1	17	
S-21	29/06/2021	Soil	0		<0.2	<0.5	<1	<2	<1	<3	<25	<25	<50	<50	100	<100	100	<5	<0.1	20	<0.5
S-22	29/06/2021	Soil																	<0.1	22	
S-23	29/06/2021	Soil																	<0.1	43	
S-24	29/06/2021	Soil											<50		170	150	320		<0.1	49	
S-25	29/06/2021	Soil	0		<0.2	<0.5	<1	<2	<1	<3	<25	<25	<50	<50	680	390	1,100	<5	<0.1	55	<0.5
S-25 Silica													<50		100	<100					
S-26	29/06/2021	Soil											<50		180	170	340		<0.1	59	
S-26 Silica													<50		<100	<100					
S-27	29/06/2021	Soil											<50		<100	<100	<50		<0.1	47	
S-28	30/06/2021	Soil	0		<0.2	<0.5	<1	<2	<1	<3	<25	<25	<50	<50	<100	<100	<50	<5	<0.1	35	<0.5
S-28 AS	30/06/2021	Other		0																	
TS-01	30/06/2021	Soil																	<0.1	19	
TS-02	30/06/2021	Soil																	<0.1	11	
TS-03	30/06/2021	Soil																	<0.1	8.9	
TS-04	30/06/2021	Soil																	<0.1	20	
TS-05	30/06/2021	Soil																	<0.1	10	
TS-06	30/06/2021	Soil	0		<0.2	<0.5	<1	<2	<1	<3	<25	<25	<50	<50	<100	<100	<50	<5	<0.1	22	<0.5
TS-07	30/06/2021	Soil																	<0.1	12	
TS-08	30/06/2021	Soil																	<0.1	16	
TS-09	30/06/2021	Soil	0		<0.2	<0.5	<1	<2	<1	<3	<25	<25	<50	<50	130	160	290	<5	<0.1	37	<0.5
TS-10	30/06/2021	Soil																	<0.1	37	



	Metals								Organochlorine Pesticides										
	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	4	0.4	1	1	1	0.1	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand >=0m, <1m																			
>=1m, <2m																			
>=2m, <4m																			
>=4m																			
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space	100																180		
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil >=0m, <2m																			
NEPM 2013 Table 1A(1) HILs Rec C Soil	300	90		17,000	600	80	1,200	30,000										400	

Field ID	Date	Matrix Type	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin
S-01	29/06/2021	Soil	<4	<0.4	1	<1	2	<0.1	<1	5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-02	29/06/2021	Soil	5	<0.4	18	33	97	<0.1	13	96	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-02_0.4	29/06/2021	Soil	4	<0.4	35	36	87	<0.1	35	81	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-03	29/06/2021	Soil	<4	<0.4	<1	<1	1	<0.1	<1	4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-03_0.5	29/06/2021	Soil	<4	<0.4	<1	<1	<1	<0.1	<1	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-04	29/06/2021	Soil	7	<0.4	11	18	82	<0.1	3	72	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-05	29/06/2021	Soil	<4	<0.4	<1	2	2	<0.1	<1	9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-06	29/06/2021	Soil	6	<0.4	13	14	130	<0.1	3	63	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-06_0.4	29/06/2021	Soil	<4	<0.4	4	<1	4	<0.1	<1	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-07	29/06/2021	Soil	<4	<0.4	8	2	8	<0.1	1	21	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-08	29/06/2021	Soil	5	<0.4	13	12	41	<0.1	3	65	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-09	29/06/2021	Soil	<4	<0.4	10	12	63	<0.1	3	45	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-10	29/06/2021	Soil	6	<0.4	23	8	33	<0.1	4	83	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-11	29/06/2021	Soil	<4	<0.4	6	2	7	<0.1	1	15	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-12	29/06/2021	Soil	<4	<0.4	3	2	4	<0.1	<1	11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-13	29/06/2021	Soil	9	<0.4	25	7	24	<0.1	5	25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-14	29/06/2021	Soil	7	<0.4	21	5	22	<0.1	6	23	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-15	29/06/2021	Soil	<4	<0.4	6	3	13	<0.1	2	17	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-16	29/06/2021	Soil	<4	<0.4	6	4	10	<0.1	2	6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-17	29/06/2021	Soil	<4	<0.4	8	5	24	<0.1	2	18	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-18	29/06/2021	Soil	<4	<0.4	4	<1	2	<0.1	<1	5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-19	29/06/2021	Soil	<4	<0.4	8	3	15	<0.1	2	12	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-20	29/06/2021	Soil	<4	<0.4	5	2	3	<0.1	<1	14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-21	29/06/2021	Soil	<4	<0.4	7	2	6	<0.1	1	12	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-22	29/06/2021	Soil	<4	<0.4	7	<1	6	<0.1	2	7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-23	29/06/2021	Soil	<4	<0.4	18	3	14	<0.1	3	21	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-24	29/06/2021	Soil	5	<0.4	17	5	20	0.1	5	19	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-25	29/06/2021	Soil	<4	<0.4	9	2	12	0.1	5	6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-25 Silica																					
S-26	29/06/2021	Soil	<4	<0.4	14	4	18	0.1	5	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-26 Silica																					
S-27	29/06/2021	Soil	<4	<0.4	5	3	13	<0.1	3	7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-28	30/06/2021	Soil	<4	<0.4	7	3	21	<0.1	2	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S-28 AS	30/06/2021	Other																			
TS-01	30/06/2021	Soil	6	<0.4	9	3	6	<0.1	<1	12	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TS-02	30/06/2021	Soil	<4	<0.4	1	<1	2	<0.1	<1	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TS-03	30/06/2021	Soil	<4	<0.4	<1	<1	1	<0.1	<1	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TS-04	30/06/2021	Soil	<4	<0.4	6	8	15	<0.1	3	110	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TS-05	30/06/2021	Soil	<4	<0.4	<1	<1	<1	<0.1	<1	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TS-06	30/06/2021	Soil	8	<0.4	10	19	13	<0.1	4	33	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TS-07	30/06/2021	Soil	<4	<0.4	<1	<1	<1	<0.1	<1	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TS-08	30/06/2021	Soil	<4	<0.4	8	3	9	<0.1	1	17	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TS-09	30/06/2021	Soil	5	<0.4	12	13	26	0.3	3	22	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TS-10	30/06/2021	Soil	<4	<0.4	13	7	20	<0.1	3	32	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1





	Polycyclic Aromatic Hydrocarbons																Polychlorinated Biphenyls (PCB)			
	Benzo(b+j+k)fluoranthene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of positives)	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	0.1	0.1	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.1	0.1	0.1
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand																				
>=0m, <1m																				
>=1m, <2m																				
>=2m, <4m																				
>=4m																				
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space													170							
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil						0.7														
>=0m, <2m						0.7														
NEPM 2013 Table 1A(1) HILs Rec C Soil																				

Field ID	Date	Matrix Type	Benzo(b+j+k)fluoranthene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of positives)	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242
S-01	29/06/2021	Soil	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1
S-02	29/06/2021	Soil																				
S-02_0.4	29/06/2021	Soil																				
S-03	29/06/2021	Soil																				
S-03_0.5	29/06/2021	Soil																				
S-04	29/06/2021	Soil																				
S-05	29/06/2021	Soil																				
S-06	29/06/2021	Soil	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1
S-06_0.4	29/06/2021	Soil																				
S-07	29/06/2021	Soil																				
S-08	29/06/2021	Soil																				
S-09	29/06/2021	Soil																				
S-10	29/06/2021	Soil																				
S-11	29/06/2021	Soil																				
S-12	29/06/2021	Soil	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1
S-13	29/06/2021	Soil																				
S-14	29/06/2021	Soil																				
S-15	29/06/2021	Soil	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1
S-16	29/06/2021	Soil																				
S-17	29/06/2021	Soil																				
S-18	29/06/2021	Soil	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1
S-19	29/06/2021	Soil																				
S-20	29/06/2021	Soil																				
S-21	29/06/2021	Soil	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1
S-22	29/06/2021	Soil																				
S-23	29/06/2021	Soil																				
S-24	29/06/2021	Soil																				
S-25 Silica	29/06/2021	Soil	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1
S-26	29/06/2021	Soil																				
S-26 Silica																						
S-27	29/06/2021	Soil																				
S-28	30/06/2021	Soil	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1
S-28 AS	30/06/2021	Other																				
TS-01	30/06/2021	Soil																				
TS-02	30/06/2021	Soil																				
TS-03	30/06/2021	Soil																				
TS-04	30/06/2021	Soil																				
TS-05	30/06/2021	Soil																				
TS-06	30/06/2021	Soil	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1
TS-07	30/06/2021	Soil																				
TS-08	30/06/2021	Soil																				
TS-09	30/06/2021	Soil	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1
TS-10	30/06/2021	Soil																				



	Polychlorinated Biphenyls (PCB)				Pesticides	Total Petroleum Hydrocarbons (TPH)			
	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	Parathion	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Environmental Standards									
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand	0.1	0.1	0.1	0.1	0.1	25	50	100	100
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil									
NEPM 2013 Table 1A(1) HILs Rec C Soil									
EQL									
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand									
>=0m, <1m									
>=1m, <2m									
>=2m, <4m									
>=4m									
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space									
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil									
>=0m, <2m									
NEPM 2013 Table 1A(1) HILs Rec C Soil				1					

Field ID	Date	Matrix Type	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100
S-01	29/06/2021	Soil	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100
S-02	29/06/2021	Soil									
S-02_0.4	29/06/2021	Soil									
S-03	29/06/2021	Soil									
S-03_0.5	29/06/2021	Soil									
S-04	29/06/2021	Soil									
S-05	29/06/2021	Soil									
S-06	29/06/2021	Soil	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100
S-06_0.4	29/06/2021	Soil									
S-07	29/06/2021	Soil									
S-08	29/06/2021	Soil									
S-09	29/06/2021	Soil									
S-10	29/06/2021	Soil									
S-11	29/06/2021	Soil									
S-12	29/06/2021	Soil	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100
S-13	29/06/2021	Soil									
S-14	29/06/2021	Soil									
S-15	29/06/2021	Soil	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100
S-16	29/06/2021	Soil							<50	<100	<100
S-17	29/06/2021	Soil									
S-18	29/06/2021	Soil	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100
S-19	29/06/2021	Soil									
S-20	29/06/2021	Soil									
S-21	29/06/2021	Soil	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	110
S-22	29/06/2021	Soil									
S-23	29/06/2021	Soil									
S-24	29/06/2021	Soil							<50	<100	180
S-25	29/06/2021	Soil	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	130	740
S-25 Silica											
S-26	29/06/2021	Soil							<50	<100	190
S-26 Silica											
S-27	29/06/2021	Soil							<50	<100	<100
S-28	30/06/2021	Soil	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100
S-28 AS	30/06/2021	Other									
TS-01	30/06/2021	Soil									
TS-02	30/06/2021	Soil									
TS-03	30/06/2021	Soil									
TS-04	30/06/2021	Soil									
TS-05	30/06/2021	Soil									
TS-06	30/06/2021	Soil	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100
TS-07	30/06/2021	Soil									
TS-08	30/06/2021	Soil									
TS-09	30/06/2021	Soil	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	170
TS-10	30/06/2021	Soil									



	Asbestos fibres	BTEX						TRH							Phenols		
	Asbestos fibres	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	C6-C10 Fraction	F1 (C6-C10 minus BTEX)	>C10-C16 Fraction	F2 (>C10-C16 Fraction minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	3&4-Methylphenol (m&p-cresol)	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol
EQL	Detect	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		0.1	0.1	0.1	0.2	0.1	0.3	20	20	50	50	100	100	50	0.4	1	1

Lab Report Number	Field ID	Date	Matrix Type	Asbestos fibres	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	C6-C10 Fraction	F1 (C6-C10 minus BTEX)	>C10-C16 Fraction	F2 (>C10-C16 Fraction minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	3&4-Methylphenol (m&p-cresol)	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	
273158	S-06_0.4	29/06/2021	soil																		
273158	QA1	29/06/2021	soil																		
RPD																					
273158	S-06_0.4	29/06/2021	soil																		
807751	QA1A	29/06/2021	soil																		
RPD																					
273158	S-28	30/06/2021	soil	0	<0.2	<0.5	<1	<2	<1	<3	<25	<25	<50	<50	<100	<100	<50				
273158	QA3	30/06/2021	soil	0	<0.2	<0.5	<1	<2	<1	<3	<25	<25	<50	<50	<100	<100	<50				
RPD				0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
273158	S-28	30/06/2021	soil	0	<0.2	<0.5	<1	<2	<1	<3	<25	<25	<50	<50	<100	<100	<50				
807751	QA3A	30/06/2021	soil	0	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<20	<50	<50	120	<100	120	<0.4	<1	<1	
RPD				0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
273158	TS-02	30/06/2021	soil																		
273158	QA2	30/06/2021	soil																		
RPD																					
273158	TS-02	30/06/2021	soil																		
807751	QA2A	30/06/2021	soil																		
RPD																					

Notes:  
 RPD: Relative Percent Difference (50% Variance Threshold)  
 EQL: Estimate Quantitation Limit  
 N/A: RPD Could Not Be Calculated



	Phenols																	
	2,4-Dichlorophenol mg/kg	2,4-Dimethylphenol mg/kg	2,4-Dinitrophenol mg/kg	2,6-Dichlorophenol mg/kg	2-Chlorophenol mg/kg	2-Methylphenol mg/kg	2-Nitrophenol mg/kg	4,6-Dinitro-2-methylphenol mg/kg	4,6-Dinitro-o-cyclohexyl phenol mg/kg	4-chloro-3-methylphenol mg/kg	4-Nitrophenol mg/kg	Cresol Total mg/kg	Pentachlorophenol mg/kg	Tetrachlorophenols mg/kg	Phenol mg/kg	Phenolics Total mg/kg	Phenols (Total Halogenated) mg/kg	Phenols (Total Non Halogenated) mg/kg
EQL	0.5	0.5	5	0.5	0.5	0.2	1	5	20	1	5	0.5	1	10	0.5	5	1	20

Lab Report Number	Field ID	Date	Matrix Type																
273158	S-06_0.4	29/06/2021	soil																
273158	QA1	29/06/2021	soil																
RPD																			
273158	S-06_0.4	29/06/2021	soil																
807751	QA1A	29/06/2021	soil																
RPD																			
273158	S-28	30/06/2021	soil																<5
273158	QA3	30/06/2021	soil																<5
RPD																			N/A
273158	S-28	30/06/2021	soil																<5
807751	QA3A	30/06/2021	soil	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<5	<20	<1	<5	<0.5	<1	<10	<0.5	<1
RPD																			
273158	TS-02	30/06/2021	soil																
273158	QA2	30/06/2021	soil																
RPD																			
273158	TS-02	30/06/2021	soil																
807751	QA2A	30/06/2021	soil																
RPD																			

Notes:  
 RPD: Relative Percent Difference (50% Variance Threshold)  
 EQL: Estimate Quantitation Limit  
 N/A: RPD Could Not Be Calculated



	Halogenated Benzenes	Herbicides	Inorganics		Metals								Organochlorine Pesticides					
	Hexachlorobenzene mg/kg	Dinoseb mg/kg	Moisture Content %	Cyanide Total mg/kg	Arsenic mg/kg	Cadmium mg/kg	Chromium (III+VI) mg/kg	Copper mg/kg	Lead mg/kg	Mercury mg/kg	Nickel mg/kg	Zinc mg/kg	Organochlorine pesticides EPAVic mg/kg	Other organochlorine pesticides EPAVic mg/kg	4,4-DDE mg/kg	a-BHC mg/kg	Aldrin mg/kg	Aldrin + Dieldrin mg/kg
EQL	0.05	20	0.1	0.5	2	0.4	1	1	1	0.1	1	1	0.1	0.1	0.05	0.05	0.05	0.05

Lab Report Number	Field ID	Date	Matrix Type	Hexachlorobenzene	Dinoseb	Moisture Content	Cyanide Total	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Organochlorine pesticides EPAVic	Other organochlorine pesticides EPAVic	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin
273158	S-06_0.4	29/06/2021	soil	<0.1		17		<4	<0.4	4	<1	4	<0.1	<1	2			<0.1	<0.1	<0.1	
273158	QA1	29/06/2021	soil	<0.1		16		<4	<0.4	4	<1	4	<0.1	<1	1			<0.1	<0.1	<0.1	
RPD				N/A		6		N/A	N/A	0	N/A	0	N/A	N/A	67			N/A	N/A	N/A	
273158	S-06_0.4	29/06/2021	soil	<0.1		17		<4	<0.4	4	<1	4	<0.1	<1	2			<0.1	<0.1	<0.1	
807751	QA1A	29/06/2021	soil	<0.05		16		<2	<0.4	5.5	<5	<5	<0.1	<5	<5	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05
RPD				N/A		6		N/A	N/A	32	N/A	N/A	N/A	N/A	N/A			N/A	N/A	N/A	
273158	S-28	30/06/2021	soil	<0.1		35	<0.5	<4	<0.4	7	3	21	<0.1	2	10			<0.1	<0.1	<0.1	
273158	QA3	30/06/2021	soil	<0.1		37	<0.5	<4	<0.4	7	2	19	<0.1	2	8			<0.1	<0.1	<0.1	
RPD				N/A		6		N/A	N/A	0	40	10	N/A	0	22			N/A	N/A	N/A	
273158	S-28	30/06/2021	soil	<0.1		35	<0.5	<4	<0.4	7	3	21	<0.1	2	10			<0.1	<0.1	<0.1	
807751	QA3A	30/06/2021	soil	<0.05	<20	25	<1	2.2	<0.4	11	<5	26	0.1	<5	7.0	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05
RPD				N/A		33		N/A	N/A	44	N/A	21	N/A	N/A	35			N/A	N/A	N/A	
273158	TS-02	30/06/2021	soil	<0.1		11		<4	<0.4	1	<1	2	<0.1	<1	2			<0.1	<0.1	<0.1	
273158	QA2	30/06/2021	soil	<0.1		13		<4	<0.4	<1	<1	1	<0.1	<1	2			<0.1	<0.1	<0.1	
RPD				N/A		17		N/A	N/A	N/A	N/A	67	N/A	N/A	0			N/A	N/A	N/A	
273158	TS-02	30/06/2021	soil			11		<4	<0.4	1	<1	2	<0.1	<1	2			<0.1	<0.1	<0.1	
807751	QA2A	30/06/2021	soil			12		<2	<0.4	11	<5	<5	<0.1	<5	<5	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05
RPD						9		N/A	N/A	167	N/A	N/A	N/A	N/A	N/A			N/A	N/A	N/A	

Notes:  
 RPD: Relative Percent Difference (50% Variance Threshold)  
 EQL: Estimate Quantitation Limit  
 N/A: RPD Could Not Be Calculated



				Organochlorine Pesticides														Organochlorine Pes					
				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	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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				0.05	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
Lab Report Number	Field ID	Date	Matrix Type																				
273158	S-06_0.4	29/06/2021	soil	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
273158	QA1	29/06/2021	soil	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
RPD				N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
273158	S-06_0.4	29/06/2021	soil	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
807751	QA1A	29/06/2021	soil	<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
RPD				N/A				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
273158	S-28	30/06/2021	soil	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
273158	QA3	30/06/2021	soil	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
RPD				N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
273158	S-28	30/06/2021	soil	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
807751	QA3A	30/06/2021	soil	<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
RPD				N/A				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
273158	TS-02	30/06/2021	soil	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
273158	QA2	30/06/2021	soil	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
RPD				N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
273158	TS-02	30/06/2021	soil	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
807751	QA2A	30/06/2021	soil	<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
RPD				N/A				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes:  
 RPD: Relative Percent Difference (50% Variance Threshold)  
 EQL: Estimate Quantitation Limit  
 N/A: RPD Could Not Be Calculated



	Organophosphorous Pesticides															
	toxaphene	Tokuthion	Azinophos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dime thoate	Disulfoton	Ethion
	mg/kg	mg/kg	mg/kg	mg/kg	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	0.2	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

Lab Report Number	Field ID	Date	Matrix Type	toxaphene	Tokuthion	Azinophos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dime thoate	Disulfoton	Ethion	
273158	S-06_0.4	29/06/2021	soil																	
273158	QA1	29/06/2021	soil																	
RPD																				
273158	S-06_0.4	29/06/2021	soil																	
807751	QA1A	29/06/2021	soil	<0.1																
RPD																				
273158	S-28	30/06/2021	soil			<0.1		<0.1		<0.1	<0.1				<0.1	<0.1	<0.1		<0.1	
273158	QA3	30/06/2021	soil			<0.1		<0.1		<0.1	<0.1				<0.1	<0.1	<0.1		<0.1	
RPD						N/A		N/A		N/A	N/A				N/A	N/A	N/A		N/A	
273158	S-28	30/06/2021	soil			<0.1		<0.1		<0.1	<0.1				<0.1	<0.1	<0.1		<0.1	
807751	QA3A	30/06/2021	soil	<0.1	<0.2	<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
RPD						N/A				N/A	N/A				N/A	N/A	N/A		N/A	
273158	TS-02	30/06/2021	soil																	
273158	QA2	30/06/2021	soil																	
RPD																				
273158	TS-02	30/06/2021	soil																	
807751	QA2A	30/06/2021	soil	<0.1																
RPD																				

Notes:  
 RPD: Relative Percent Difference (50% Variance Threshold)  
 EQL: Estimate Quantitation Limit  
 N/A: RPD Could Not Be Calculated



	Organophosphorous Pesticides																	
	Ethoprop	Fenitrothion	Fensulfothion	Fenthion	EPN	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	0.1	0.2	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

Lab Report Number	Field ID	Date	Matrix Type	Ethoprop	Fenitrothion	Fensulfothion	Fenthion	EPN	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	
273158	S-06_0.4	29/06/2021	soil																			
273158	QA1	29/06/2021	soil																			
RPD																						
273158	S-06_0.4	29/06/2021	soil																			
807751	QA1A	29/06/2021	soil																			
RPD																						
273158	S-28	30/06/2021	soil		<0.1				<0.1										<0.1			
273158	QA3	30/06/2021	soil		<0.1				<0.1										<0.1			
RPD					N/A				N/A										N/A			
273158	S-28	30/06/2021	soil		<0.1				<0.1										<0.1			
807751	QA3A	30/06/2021	soil	<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	
RPD					N/A				N/A										N/A			
273158	TS-02	30/06/2021	soil																			
273158	QA2	30/06/2021	soil																			
RPD																						
273158	TS-02	30/06/2021	soil																			
807751	QA2A	30/06/2021	soil																			
RPD																						

Notes:  
 RPD: Relative Percent Difference (50% Variance Threshold)  
 EQL: Estimate Quantitation Limit  
 N/A: RPD Could Not Be Calculated



	PAH																		
	Benzo(b+j)fluoranthene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b+j)fluoranthene	Benzo(e,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)	PAHs (Sum of positives)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.2	0.1	0.1	0.1	0.1	0.05	0.5	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.05

Lab Report Number	Field ID	Date	Matrix Type																	
273158	S-06_0.4	29/06/2021	soil																	
273158	QA1	29/06/2021	soil																	
RPD																				
273158	S-06_0.4	29/06/2021	soil																	
807751	QA1A	29/06/2021	soil																	
RPD																				
273158	S-28	30/06/2021	soil	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
273158	QA3	30/06/2021	soil	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
RPD				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
273158	S-28	30/06/2021	soil	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
807751	QA3A	30/06/2021	soil	<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	<0.5	<0.5	<0.5
RPD				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
273158	TS-02	30/06/2021	soil																	
273158	QA2	30/06/2021	soil																	
RPD																				
273158	TS-02	30/06/2021	soil																	
807751	QA2A	30/06/2021	soil																	
RPD																				

Notes:  
 RPD: Relative Percent Difference (50% Variance Threshold)  
 EQL: Estimate Quantitation Limit  
 N/A: RPD Could Not Be Calculated



	PCBs							Pesticides		TPH					
	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	Parathion	Pirimiphos-methyl	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg							
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	20	20	50	50	50

Lab Report Number	Field ID	Date	Matrix Type														
273158	S-06_0.4	29/06/2021	soil														
273158	QA1	29/06/2021	soil														
RPD																	
273158	S-06_0.4	29/06/2021	soil														
807751	QA1A	29/06/2021	soil														
RPD																	
273158	S-28	30/06/2021	soil	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100
273158	QA3	30/06/2021	soil	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100
RPD				N/A	N/A	N/A	N/A	N/A									
273158	S-28	30/06/2021	soil	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100
807751	QA3A	30/06/2021	soil	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<20	<20	56	<50
RPD				N/A	N/A	N/A	N/A	N/A									
273158	TS-02	30/06/2021	soil														
273158	QA2	30/06/2021	soil														
RPD																	
273158	TS-02	30/06/2021	soil														
807751	QA2A	30/06/2021	soil														
RPD																	

Notes:  
 RPD: Relative Percent Difference (50% Variance Threshold)  
 EQL: Estimate Quantitation Limit  
 N/A: RPD Could Not Be Calculated

# **APPENDIX E**

Laboratory Documentation



# CHAIN OF CUSTODY - Client

## ENVIROLAB GROUP - National phone number 1300 42 43 44

**Client:** ENV Solutions  
**Contact Person:** Ben Pieterse  
**Project Mgr:** Ben Pieterse  
**Sampler:** BP  
**Address:** 313 River Street, Ballina, NSW

**Client Project Name / Number / Site etc (ie report title):** 216010  
**PO No.:**  
**Envirolab Quote No.:**  
**Date results required:**  
**Or choose: standard / same day / 1 day / 2 day / 3 day**  
*Note: Inform lab in advance if urgent turnaround is required - surcharges apply*  
**Report format: esdat / equis /**  
**Lab Comments:**  
**0111, 0121, 0122 to confirm for equipment testing**

**Phone:** 0478 170 771  
**Email:** ben@envsolutions.com.au & labresults@envsolutions.com.au

### Sample information

Envirolab Sample ID	Client Sample ID or information	Depth	Date sampled	Type of sample	OCs	Metals	Combo/a	Asbestos in material	Tests Required
1	S-01	0-0.1	29.6.21	soil			X		
2	S-02	0-0.1	29.6.21	soil	X	X			
3	S-2_0.4	0.35-0.45	30.6.21	Soil	X	X			
4	S-03	0-0.1	29.6.21	Soil	X	X			
5	S-3_0.5	0.45-0.55	29.6.21	Soil	X	X			
6	S-04	0-0.1	29.6.21	Soil	X	X			
7	S-05	0-0.1	29.6.21	Soil	X	X			
8	S-06	0-0.1	29.6.21	Soil			X		
9	S-06_0.4	0.35-0.45	29.6.21	Soil	X	X			
10	S-07	0-0.1	29.6.21	Soil	X	X			
11	S-08	0-0.1	29.6.21	Soil	X	X			
12	S-09	0-0.1	29.6.21	Soil	X	X			
13	S-10	0-0.1	29.6.21	Soil	X	X			
14	S-11	0-0.1	29.6.21	Soil	X	X			
15	S-12	0-0.1	29.6.21	Soil	X	X			
16	S-13	0-0.1	29.6.21	Soil	X	X			
17	S-14	0-0.1	29.6.21	Soil	X	X			

**Relinquished by (Company):** ENV Solutions  
**Print Name:** Ben Pieterse  
**Date & Time:** 1.7.21  
**Signature:** BP

**Received by (Company):** EUS SVP  
**Print Name:** EMMA CARROLL  
**Date & Time:** 2-7-21  
**Signature:** [Signature]

**Lab use only:**  
**Samples Received:** (C) or Ambient (circle one)  
**Temperature Received at:** 7C (if applicable)  
**Transported by:** Hand delivered / courier

**Comments:**  
 Provide as much information about the sample as you can

**Envirolab Services**  
 12 Ashley St  
 Chatswood NSW 2017  
 Ph: (02) 9910 6200

**Job No:** 27358  
**Date Received:** 2-7-21  
**Time Received:** 1015  
**Received By:** EC  
**Temp:** Cool/Ambient  
**Cooling:** Ice/Freezer  
**Security:** Initial/Broken/None

**Sydney Lab - Envirolab Services**  
 12 Ashley St, Chatswood, NSW 2067  
 Ph 02 9910 6200 / sydney@envirolab.com.au

**Perth Lab - MPL Laboratories**  
 16-18 Hayden Crt Myaree, WA 6154  
 Ph 08 9317 2505 / lab@mpl.com.au

**Melbourne Lab - Envirolab Services**  
 1A Dalmore Drive Scoresby VIC 3179  
 Ph 03 9763 2500 / melbourne@envirolab.com.au

**Brisbane Office - Envirolab Services**  
 20a, 10-20 Depot St, Banyo, QLD 4014  
 Ph 07 3266 9532 / brisbane@envirolab.com.au

**Adelaide Office - Envirolab Services**  
 7a The Parade, Norwood, SA 5067  
 Ph 0406 350 706 / adelaide@envirolab.com.au

EnviroLab Sample ID	Client Sample ID or information	Depth	Date sampled	Type of sample	OCPs	Metals	Combo10a	Asbestos in material									Provide as much information about the sample as you can
18	S-15	0-0.1	29.6.21	Soil			X										
19	S-16	0-0.1	29.6.21	Soil	X	X											
20	S-17	0-0.1	29.6.21	Soil	X	X											
21	S-18	0-0.1	29.6.21	Soil			X										
22	S-19	0-0.1	29.6.21	Soil	X	X											
23	S-20	0-0.1	29.6.21	Soil	X	X											
24	S-21	0-0.1	29.6.21	Soil			X										
25	S-22	0-0.1	29.6.21	Soil	X	X											
26	S-23	0-0.1	29.6.21	Soil	X	X											
27	S-24	0-0.1	29.6.21	Soil	X	X											
28	S-25	0-0.1	29.6.21	Soil	X	X											
29	S-26	0-0.1	29.6.21	Soil	X	X											
30	S-27	0-0.1	29.6.21	Soil	X	X											
31	S-28	0-0.1	30.6.21	Soil			X										
32	S-28_AS	0-0.1	30.6.21	Cement Board				X									
33	TS-01	0-0.1	30.6.21	Soil			X										
34	TS-02	0-0.1	30.6.21	Soil	X	X											
35	TS-03	0-0.1	30.6.21	Soil	X	X											
36	TS-04	0-0.1	30.6.21	Soil	X	X											
37	TS-05	0-0.1	30.6.21	Soil	X	X											
38	TS-06	0-0.1	30.6.21	Soil			X										
39	TS-07	0-0.1	30.6.21	Soil	X	X											
40	TS-08	0-0.1	30.6.21	Soil	X	X											
41	TS-09	0-0.1	30.6.21	Soil			X										
42	TS-10	0-0.1	30.6.21	Soil	X	X											
43	QA1		29.6.21	Soil	X	X											Forward to eurofins
44	QA1A		29.6.21	Soil	X	X											Forward to eurofins
45	QA2		30.6.21	Soil	X	X											Forward to eurofins
46	QA2A		30.6.21	Soil	X	X											Forward to eurofins
47	QA3		30.6.21	Soil			X										Forward to eurofins
48	QA3A		30.6.21	Soil			X										Forward to eurofins

**Relinquished by (Company):** ENV Solutions  
**Print Name:** Ben Pieterse  
**Date & Time:** 1.7.21  
**Signature:** BP

**Received by (Company):** ELS SVP  
**Print Name:** Emma Carroll  
**Date & Time:** 2.7.21 1015  
**Signature:**

**Lab use only:**  
**Samples Received:** Cool or Ambient (circle one)  
**Temperature Received at:** 7°C (if applicable)  
**Transported by:** Hand delivered / courier



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

## SAMPLE RECEIPT ADVICE

Client Details	
<b>Client</b>	ENV Solutions Pty Ltd
<b>Attention</b>	Ben Pieterse

Sample Login Details	
<b>Your reference</b>	216010
<b>Envirolab Reference</b>	273158
<b>Date Sample Received</b>	02/07/2021
<b>Date Instructions Received</b>	02/07/2021
<b>Date Results Expected to be Reported</b>	09/07/2021

Sample Condition	
<b>Samples received in appropriate condition for analysis</b>	Yes
<b>No. of Samples Provided</b>	44 Soil, 1 Material
<b>Turnaround Time Requested</b>	Standard
<b>Temperature on Receipt (°C)</b>	7
<b>Cooling Method</b>	Ice
<b>Sampling Date Provided</b>	YES

Comments	
Nil	

Please direct any queries to:

Aileen Hie	Jacinta Hurst
<b>Phone:</b> 02 9910 6200	<b>Phone:</b> 02 9910 6200
<b>Fax:</b> 02 9910 6201	<b>Fax:</b> 02 9910 6201
<b>Email:</b> ahie@envirolab.com.au	<b>Email:</b> jhurst@envirolab.com.au

Analysis Underway, details on the following page:



Envirolab Services Pty Ltd

ABN 37 112 535 645

12 Ashley St Chatswood NSW 2067

ph 02 9910 6200 fax 02 9910 6201

customerservice@envirolab.com.au

www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBsin Soil	Acid Extractable metaisin soil	Misc Soil - Inorg	Asbestos ID - soils	Asbestos ID - materials
S-01-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	
S-02-0-0.1				✓			✓			
S-02-0.35-0.45				✓			✓			
S-03-0-0.1				✓			✓			
S-03-0.45-0.55				✓			✓			
S-04-0-0.1				✓			✓			
S-05-0-0.1				✓			✓			
S-06-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	
S-06-0.35-0.45				✓			✓			
S-07-0-0.1				✓			✓			
S-08-0-0.1				✓			✓			
S-09-0-0.1				✓			✓			
S-10-0-0.1				✓			✓			
S-11-0-0.1				✓			✓			
S-12-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	
S-13-0-0.1				✓			✓			
S-14-0-0.1				✓			✓			
S-15-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	
S-16-0-0.1				✓			✓			
S-17-0-0.1				✓			✓			
S-18-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	
S-19-0-0.1				✓			✓			
S-20-0-0.1				✓			✓			
S-21-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	
S-22-0-0.1				✓			✓			
S-23-0-0.1				✓			✓			
S-24-0-0.1				✓			✓			
S-25-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	
S-26-0-0.1				✓			✓			
S-27-0-0.1				✓			✓			
S-28-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	
S-28 AS-0-0.1										✓



Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBsin Soil	Acid Extractable metalsin soil	Misc Soil - Inorg	Asbestos ID - soils	Asbestos ID - materials
TS-01-0-0.1				✓			✓			
TS-02-0-0.1				✓			✓			
TS-03-0-0.1				✓			✓			
TS-04-0-0.1				✓			✓			
TS-05-0-0.1				✓			✓			
TS-06-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TS-07-0-0.1				✓			✓			
TS-08-0-0.1				✓			✓			
TS-09-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	
TS-10-0-0.1				✓			✓			
QA1				✓			✓			
QA2				✓			✓			
QA3	✓	✓	✓	✓	✓	✓	✓	✓	✓	

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

### Additional Info

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

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

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

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

## CERTIFICATE OF ANALYSIS 273158

Client Details	
<b>Client</b>	ENV Solutions Pty Ltd
<b>Attention</b>	Ben Pieterse
<b>Address</b>	313 River St, Ballina, NSW, 2478

Sample Details	
<b>Your Reference</b>	<u>216010</u>
<b>Number of Samples</b>	44 Soil, 1 Material
<b>Date samples received</b>	02/07/2021
<b>Date completed instructions received</b>	02/07/2021

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.	
<b>Please refer to the last page of this report for any comments relating to the results.</b>	

Report Details	
<b>Date results requested by</b>	09/07/2021
<b>Date of Issue</b>	09/07/2021
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. <b>Tests not covered by NATA are denoted with *</b>	

**Asbestos Approved By**

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

**Results Approved By**

Diego Bigolin, Team Leader, Inorganics  
 Dragana Tomas, Senior Chemist  
 Giovanni Agosti, Group Technical Manager  
 Lucy Zhu, Asbestos Supervisor  
 Steven Luong, Organics Supervisor  
 Thomas Beenie, Lab Technician

**Authorised By**



Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		273158-1	273158-8	273158-15	273158-18	273158-21
Your Reference	UNITS	S-01	S-06	S-12	S-15	S-18
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
TRH C <sub>6</sub> - C <sub>9</sub>	mg/kg	<25	<25	<25	<25	<25
TRH C <sub>6</sub> - C <sub>10</sub>	mg/kg	<25	<25	<25	<25	<25
vTPH C <sub>6</sub> - C <sub>10</sub> less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	91	87	103	84	95

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		273158-24	273158-28	273158-31	273158-38	273158-41
Your Reference	UNITS	S-21	S-25	S-28	TS-06	TS-09
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	30/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
TRH C <sub>6</sub> - C <sub>9</sub>	mg/kg	<25	<25	<25	<25	<25
TRH C <sub>6</sub> - C <sub>10</sub>	mg/kg	<25	<25	<25	<25	<25
vTPH C <sub>6</sub> - C <sub>10</sub> less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	103	95	83	86	81

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		273158-45
Your Reference	UNITS	QA3
Depth		-
Date Sampled		30/06/2021
Type of sample		Soil
Date extracted	-	05/07/2021
Date analysed	-	05/07/2021
TRH C <sub>6</sub> - C <sub>9</sub>	mg/kg	<25
TRH C <sub>6</sub> - C <sub>10</sub>	mg/kg	<25
vTPH C <sub>6</sub> - C <sub>10</sub> less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<3
Surrogate aaa-Trifluorotoluene	%	93

svTRH (C10-C40) in Soil						
Our Reference		273158-1	273158-8	273158-15	273158-18	273158-21
Your Reference	UNITS	S-01	S-06	S-12	S-15	S-18
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
TRH C <sub>10</sub> - C <sub>14</sub>	mg/kg	<50	<50	<50	<50	<50
TRH C <sub>15</sub> - C <sub>28</sub>	mg/kg	<100	<100	<100	<100	<100
TRH C <sub>29</sub> - C <sub>36</sub>	mg/kg	<100	<100	<100	<100	<100
TRH >C <sub>10</sub> -C <sub>16</sub>	mg/kg	<50	<50	<50	<50	<50
TRH >C <sub>10</sub> - C <sub>16</sub> less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C <sub>16</sub> -C <sub>34</sub>	mg/kg	<100	<100	<100	<100	<100
TRH >C <sub>34</sub> -C <sub>40</sub>	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	86	90	89	92	84

svTRH (C10-C40) in Soil						
Our Reference		273158-24	273158-28	273158-31	273158-38	273158-41
Your Reference	UNITS	S-21	S-25	S-28	TS-06	TS-09
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	30/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	05/07/2021	05/07/2021	06/07/2021	06/07/2021	06/07/2021
TRH C <sub>10</sub> - C <sub>14</sub>	mg/kg	<50	<50	<50	<50	<50
TRH C <sub>15</sub> - C <sub>28</sub>	mg/kg	<100	130	<100	<100	<100
TRH C <sub>29</sub> - C <sub>36</sub>	mg/kg	110	740	<100	<100	170
TRH >C <sub>10</sub> -C <sub>16</sub>	mg/kg	<50	<50	<50	<50	<50
TRH >C <sub>10</sub> - C <sub>16</sub> less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C <sub>16</sub> -C <sub>34</sub>	mg/kg	100	680	<100	<100	130
TRH >C <sub>34</sub> -C <sub>40</sub>	mg/kg	<100	390	<100	<100	160
Total +ve TRH (>C10-C40)	mg/kg	100	1,100	<50	<50	290
Surrogate o-Terphenyl	%	86	103	88	84	94

svTRH (C10-C40) in Soil		
Our Reference		273158-45
Your Reference	UNITS	QA3
Depth		-
Date Sampled		30/06/2021
Type of sample		Soil
Date extracted	-	05/07/2021
Date analysed	-	06/07/2021
TRH C <sub>10</sub> - C <sub>14</sub>	mg/kg	<50
TRH C <sub>15</sub> - C <sub>28</sub>	mg/kg	<100
TRH C <sub>29</sub> - C <sub>36</sub>	mg/kg	<100
TRH >C <sub>10</sub> -C <sub>16</sub>	mg/kg	<50
TRH >C <sub>10</sub> - C <sub>16</sub> less Naphthalene (F2)	mg/kg	<50
TRH >C <sub>16</sub> -C <sub>34</sub>	mg/kg	<100
TRH >C <sub>34</sub> -C <sub>40</sub>	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	79

PAHs in Soil						
Our Reference		273158-1	273158-8	273158-15	273158-18	273158-21
Your Reference	UNITS	S-01	S-06	S-12	S-15	S-18
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	105	111	107	114	108

PAHs in Soil						
Our Reference		273158-24	273158-28	273158-31	273158-38	273158-41
Your Reference	UNITS	S-21	S-25	S-28	TS-06	TS-09
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	30/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	110	119	108	110	117

PAHs in Soil		
Our Reference		273158-45
Your Reference	UNITS	QA3
Depth		-
Date Sampled		30/06/2021
Type of sample		Soil
Date extracted	-	05/07/2021
Date analysed	-	06/07/2021
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	108

Organochlorine Pesticides in soil						
Our Reference		273158-1	273158-2	273158-3	273158-4	273158-5
Your Reference	UNITS	S-01	S-02	S-02	S-03	S-03
Depth		0-0.1	0-0.1	0.35-0.45	0-0.1	0.45-0.55
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	91	91	92	89	93

Organochlorine Pesticides in soil						
Our Reference		273158-6	273158-7	273158-8	273158-9	273158-10
Your Reference	UNITS	S-04	S-05	S-06	S-06	S-07
Depth		0-0.1	0-0.1	0-0.1	0.35-0.45	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	97	92	99	91	96

Organochlorine Pesticides in soil						
Our Reference		273158-11	273158-12	273158-13	273158-14	273158-15
Your Reference	UNITS	S-08	S-09	S-10	S-11	S-12
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	97	101	100	94

Organochlorine Pesticides in soil						
Our Reference		273158-16	273158-17	273158-18	273158-19	273158-20
Your Reference	UNITS	S-13	S-14	S-15	S-16	S-17
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	104	103	99	95	97

Organochlorine Pesticides in soil						
Our Reference		273158-21	273158-22	273158-23	273158-24	273158-25
Your Reference	UNITS	S-18	S-19	S-20	S-21	S-22
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	90	92	92	93	96

Organochlorine Pesticides in soil						
Our Reference		273158-26	273158-27	273158-28	273158-29	273158-30
Your Reference	UNITS	S-23	S-24	S-25	S-26	S-27
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	101	104	109	108	102

Organochlorine Pesticides in soil						
Our Reference		273158-31	273158-33	273158-34	273158-35	273158-36
Your Reference	UNITS	S-28	TS-01	TS-02	TS-03	TS-04
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		30/06/2021	30/06/2021	30/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	93	92	94	98

Organochlorine Pesticides in soil						
Our Reference		273158-37	273158-38	273158-39	273158-40	273158-41
Your Reference	UNITS	TS-05	TS-06	TS-07	TS-08	TS-09
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		30/06/2021	30/06/2021	30/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	93	99	89	92	104

Organochlorine Pesticides in soil					
Our Reference		273158-42	273158-43	273158-44	273158-45
Your Reference	UNITS	TS-10	QA1	QA2	QA3
Depth		0-0.1	-	-	-
Date Sampled		30/06/2021	29/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	103	95	92	100

Organophosphorus Pesticides in Soil						
Our Reference		273158-1	273158-8	273158-15	273158-18	273158-21
Your Reference	UNITS	S-01	S-06	S-12	S-15	S-18
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	91	99	94	99	90

Organophosphorus Pesticides in Soil						
Our Reference		273158-24	273158-28	273158-31	273158-38	273158-41
Your Reference	UNITS	S-21	S-25	S-28	TS-06	TS-09
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	30/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	93	109	98	99	104

Organophosphorus Pesticides in Soil		
Our Reference		273158-45
Your Reference	UNITS	QA3
Depth		-
Date Sampled		30/06/2021
Type of sample		Soil
Date extracted	-	05/07/2021
Date analysed	-	06/07/2021
Dichlorvos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Chlorpyrifos	mg/kg	<0.1
Parathion	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Ethion	mg/kg	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1
Surrogate TCMX	%	100

PCBs in Soil						
Our Reference		273158-1	273158-8	273158-15	273158-18	273158-21
Your Reference	UNITS	S-01	S-06	S-12	S-15	S-18
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	91	99	94	99	90

PCBs in Soil						
Our Reference		273158-24	273158-28	273158-31	273158-38	273158-41
Your Reference	UNITS	S-21	S-25	S-28	TS-06	TS-09
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	30/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	93	109	98	99	104

PCBs in Soil		
Our Reference		273158-45
Your Reference	UNITS	QA3
Depth		-
Date Sampled		30/06/2021
Type of sample		Soil
Date extracted	-	05/07/2021
Date analysed	-	06/07/2021
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCMX	%	100

Acid Extractable metals in soil						
Our Reference		273158-1	273158-2	273158-3	273158-4	273158-5
Your Reference	UNITS	S-01	S-02	S-02	S-03	S-03
Depth		0-0.1	0-0.1	0.35-0.45	0-0.1	0.45-0.55
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Date analysed	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Arsenic	mg/kg	<4	5	4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	1	18	35	<1	<1
Copper	mg/kg	<1	33	36	<1	<1
Lead	mg/kg	2	97	87	1	<1
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	13	35	<1	<1
Zinc	mg/kg	5	96	81	4	1

Acid Extractable metals in soil						
Our Reference		273158-6	273158-7	273158-8	273158-9	273158-10
Your Reference	UNITS	S-04	S-05	S-06	S-06	S-07
Depth		0-0.1	0-0.1	0-0.1	0.35-0.45	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Date analysed	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Arsenic	mg/kg	7	<4	6	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	11	<1	13	4	8
Copper	mg/kg	18	2	14	<1	2
Lead	mg/kg	82	2	130	4	8
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	<1	3	<1	1
Zinc	mg/kg	72	9	63	2	21

Acid Extractable metals in soil						
Our Reference		273158-11	273158-12	273158-13	273158-14	273158-15
Your Reference	UNITS	S-08	S-09	S-10	S-11	S-12
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Date analysed	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Arsenic	mg/kg	5	<4	6	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	13	10	23	6	3
Copper	mg/kg	12	12	8	2	2
Lead	mg/kg	41	63	33	7	4
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	3	4	1	<1
Zinc	mg/kg	65	45	83	15	11

Acid Extractable metals in soil						
Our Reference		273158-16	273158-17	273158-18	273158-19	273158-20
Your Reference	UNITS	S-13	S-14	S-15	S-16	S-17
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Date analysed	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Arsenic	mg/kg	9	7	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	25	21	6	6	8
Copper	mg/kg	7	5	3	4	5
Lead	mg/kg	24	22	13	10	24
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	6	2	2	2
Zinc	mg/kg	25	23	17	6	18

Acid Extractable metals in soil						
Our Reference		273158-21	273158-22	273158-23	273158-24	273158-25
Your Reference	UNITS	S-18	S-19	S-20	S-21	S-22
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Date analysed	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	8	5	7	7
Copper	mg/kg	<1	3	2	2	<1
Lead	mg/kg	2	15	3	6	6
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	2	<1	1	2
Zinc	mg/kg	5	12	14	12	7

Acid Extractable metals in soil						
Our Reference		273158-26	273158-27	273158-28	273158-29	273158-30
Your Reference	UNITS	S-23	S-24	S-25	S-26	S-27
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Date analysed	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Arsenic	mg/kg	<4	5	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	18	17	9	14	5
Copper	mg/kg	3	5	2	4	3
Lead	mg/kg	14	20	12	18	13
Mercury	mg/kg	<0.1	0.1	0.1	0.1	<0.1
Nickel	mg/kg	3	5	5	5	3
Zinc	mg/kg	21	19	6	8	7

Acid Extractable metals in soil						
Our Reference		273158-31	273158-33	273158-34	273158-35	273158-36
Your Reference	UNITS	S-28	TS-01	TS-02	TS-03	TS-04
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		30/06/2021	30/06/2021	30/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Date analysed	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Arsenic	mg/kg	<4	6	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	9	1	<1	6
Copper	mg/kg	3	3	<1	<1	8
Lead	mg/kg	21	6	2	1	15
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	<1	<1	<1	3
Zinc	mg/kg	10	12	2	1	110

Acid Extractable metals in soil						
Our Reference		273158-37	273158-38	273158-39	273158-40	273158-41
Your Reference	UNITS	TS-05	TS-06	TS-07	TS-08	TS-09
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		30/06/2021	30/06/2021	30/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Date analysed	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Arsenic	mg/kg	<4	8	<4	<4	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	<1	10	<1	8	12
Copper	mg/kg	<1	19	<1	3	13
Lead	mg/kg	<1	13	<1	9	26
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Nickel	mg/kg	<1	4	<1	1	3
Zinc	mg/kg	1	33	2	17	22

Acid Extractable metals in soil					
Our Reference		273158-42	273158-43	273158-44	273158-45
Your Reference	UNITS	TS-10	QA1	QA2	QA3
Depth		0-0.1	-	-	-
Date Sampled		30/06/2021	29/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Date analysed	-	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Arsenic	mg/kg	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	13	4	<1	7
Copper	mg/kg	7	<1	<1	2
Lead	mg/kg	20	4	1	19
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	<1	<1	2
Zinc	mg/kg	32	1	2	8

Misc Soil - Inorg						
Our Reference		273158-1	273158-8	273158-15	273158-18	273158-21
Your Reference	UNITS	S-01	S-06	S-12	S-15	S-18
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Total Cyanide	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference		273158-24	273158-28	273158-31	273158-38	273158-41
Your Reference	UNITS	S-21	S-25	S-28	TS-06	TS-09
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	30/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Total Cyanide	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg		
Our Reference		273158-45
Your Reference	UNITS	QA3
Depth		-
Date Sampled		30/06/2021
Type of sample		Soil
Date prepared	-	05/07/2021
Date analysed	-	05/07/2021
Total Cyanide	mg/kg	<0.5
Total Phenolics (as Phenol)	mg/kg	<5

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Moisture						
Our Reference		273158-1	273158-2	273158-3	273158-4	273158-5
Your Reference	UNITS	S-01	S-02	S-02	S-03	S-03
Depth		0-0.1	0-0.1	0.35-0.45	0-0.1	0.45-0.55
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Moisture	%	9.5	19	26	17	5.8

Moisture						
Our Reference		273158-6	273158-7	273158-8	273158-9	273158-10
Your Reference	UNITS	S-04	S-05	S-06	S-06	S-07
Depth		0-0.1	0-0.1	0-0.1	0.35-0.45	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Moisture	%	42	9.6	42	17	37

Moisture						
Our Reference		273158-11	273158-12	273158-13	273158-14	273158-15
Your Reference	UNITS	S-08	S-09	S-10	S-11	S-12
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Moisture	%	49	41	49	31	15

Moisture						
Our Reference		273158-16	273158-17	273158-18	273158-19	273158-20
Your Reference	UNITS	S-13	S-14	S-15	S-16	S-17
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Moisture	%	49	46	26	21	21

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Moisture						
Our Reference		273158-21	273158-22	273158-23	273158-24	273158-25
Your Reference	UNITS	S-18	S-19	S-20	S-21	S-22
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Moisture	%	9.5	35	17	20	22

Moisture						
Our Reference		273158-26	273158-27	273158-28	273158-29	273158-30
Your Reference	UNITS	S-23	S-24	S-25	S-26	S-27
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Moisture	%	43	49	55	59	47

Moisture						
Our Reference		273158-31	273158-33	273158-34	273158-35	273158-36
Your Reference	UNITS	S-28	TS-01	TS-02	TS-03	TS-04
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		30/06/2021	30/06/2021	30/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Moisture	%	35	19	11	8.9	20

Moisture						
Our Reference		273158-37	273158-38	273158-39	273158-40	273158-41
Your Reference	UNITS	TS-05	TS-06	TS-07	TS-08	TS-09
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		30/06/2021	30/06/2021	30/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Moisture	%	10	22	12	16	37

Moisture					
Our Reference		273158-42	273158-43	273158-44	273158-45
Your Reference	UNITS	TS-10	QA1	QA2	QA3
Depth		0-0.1	-	-	-
Date Sampled		30/06/2021	29/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	05/07/2021	05/07/2021	05/07/2021	05/07/2021
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Moisture	%	37	16	13	37

Asbestos ID - soils						
Our Reference		273158-1	273158-8	273158-15	273158-18	273158-21
Your Reference	UNITS	S-01	S-06	S-12	S-15	S-18
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	09/07/2021	09/07/2021	09/07/2021	09/07/2021	09/07/2021
Sample mass tested	g	Approx. 35g	Approx. 20g	Approx. 30g	Approx. 30g	Approx. 30g
Sample Description	-	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected				

Asbestos ID - soils						
Our Reference		273158-24	273158-28	273158-31	273158-38	273158-41
Your Reference	UNITS	S-21	S-25	S-28	TS-06	TS-09
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	30/06/2021	30/06/2021	30/06/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	09/07/2021	09/07/2021	09/07/2021	09/07/2021	09/07/2021
Sample mass tested	g	Approx. 30g	Approx. 15g	Approx. 20g	Approx. 40g	Approx. 15g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks	Brown fine-grained soil & debris
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected				

Asbestos ID - soils		
Our Reference		273158-45
Your Reference	UNITS	QA3
Depth		-
Date Sampled		30/06/2021
Type of sample		Soil
Date analysed	-	09/07/2021
Sample mass tested	g	Approx. 20g
Sample Description	-	Brown fine-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg  Organic fibres detected
Trace Analysis	-	No asbestos detected

Asbestos ID - materials		
Our Reference		273158-32
Your Reference	UNITS	S-28 AS
Depth		0-0.1
Date Sampled		30/06/2021
Type of sample		Material
Date analysed	-	05/07/2021
Mass / Dimension of Sample	-	57.14g
Sample Description	-	Beige fibre cement material
Asbestos ID in materials	-	No asbestos detected Organic fibres detected
Trace Analysis	-	No asbestos detected

Method ID	Methodology Summary
<b>ASB-001</b>	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
<b>Inorg-008</b>	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
<b>Inorg-014</b>	Cyanide - free, total, weak acid dissociable by segmented flow analyser (in line dialysis with colourimetric finish).  Solids/Filters and sorbents are extracted in a caustic media prior to analysis. Impingers are pH adjusted as required prior to analysis.  Cyanides amenable to Chlorination - samples are analysed untreated and treated with hyperchlorite to assess the potential for chlorination of cyanide forms. Based on APHA latest edition, 4500-CN_G,H.
<b>Inorg-031</b>	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
<b>Metals-020</b>	Determination of various metals by ICP-AES.
<b>Metals-021</b>	Determination of Mercury by Cold Vapour AAS.
<b>Org-020</b>	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.
<b>Org-020</b>	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).
<b>Org-021</b>	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
<b>Org-021</b>	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore " Total +ve PCBs" is simply a sum of the positive individual PCBs.
<b>Org-022</b>	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.

Method ID	Methodology Summary
<b>Org-022/025</b>	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
<b>Org-022/025</b>	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS.
<b>Org-022/025</b>	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.
<b>Org-022/025</b>	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.
<b>Org-022/025</b>	<p>For soil results:-</p> <ol style="list-style-type: none"> <li>1. 'EQ PQL' values are assuming all contributing PAHs reported as &lt;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.</li> <li>2. 'EQ zero' values are assuming all contributing PAHs reported as &lt;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.</li> <li>3. 'EQ half PQL' values are assuming all contributing PAHs reported as &lt;PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above.</li> </ol> <p>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.</p>
<b>Org-023</b>	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
<b>Org-023</b>	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.
<b>Org-023</b>	<p>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.</p> <p>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.</p>

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QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	273158-8
Date extracted	-			05/07/2021	1	05/07/2021	05/07/2021		05/07/2021	05/07/2021
Date analysed	-			05/07/2021	1	05/07/2021	05/07/2021		05/07/2021	05/07/2021
TRH C <sub>6</sub> - C <sub>9</sub>	mg/kg	25	Org-023	<25	1	<25	<25	0	108	86
TRH C <sub>6</sub> - C <sub>10</sub>	mg/kg	25	Org-023	<25	1	<25	<25	0	108	86
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	95	78
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	109	86
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	111	90
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	112	89
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	106	86
naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	97	1	91	89	2	94	78

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	18	05/07/2021	05/07/2021		[NT]	[NT]
Date analysed	-			[NT]	18	05/07/2021	05/07/2021		[NT]	[NT]
TRH C <sub>6</sub> - C <sub>9</sub>	mg/kg	25	Org-023	[NT]	18	<25	<25	0	[NT]	[NT]
TRH C <sub>6</sub> - C <sub>10</sub>	mg/kg	25	Org-023	[NT]	18	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	18	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	18	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	18	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	18	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	18	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-023	[NT]	18	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	18	84	84	0	[NT]	[NT]

Client Reference: 216010

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	273158-8
Date extracted	-			05/07/2021	1	05/07/2021	05/07/2021		05/07/2021	05/07/2021
Date analysed	-			05/07/2021	1	05/07/2021	05/07/2021		05/07/2021	05/07/2021
TRH C <sub>10</sub> - C <sub>14</sub>	mg/kg	50	Org-020	<50	1	<50	<50	0	79	92
TRH C <sub>15</sub> - C <sub>28</sub>	mg/kg	100	Org-020	<100	1	<100	<100	0	87	111
TRH C <sub>29</sub> - C <sub>36</sub>	mg/kg	100	Org-020	<100	1	<100	<100	0	70	70
TRH >C <sub>10</sub> -C <sub>16</sub>	mg/kg	50	Org-020	<50	1	<50	<50	0	79	92
TRH >C <sub>16</sub> -C <sub>34</sub>	mg/kg	100	Org-020	<100	1	<100	<100	0	87	111
TRH >C <sub>34</sub> -C <sub>40</sub>	mg/kg	100	Org-020	<100	1	<100	<100	0	70	70
Surrogate o-Terphenyl	%		Org-020	74	1	86	86	0	90	90

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	18	05/07/2021	05/07/2021		[NT]	[NT]
Date analysed	-			[NT]	18	05/07/2021	05/07/2021		[NT]	[NT]
TRH C <sub>10</sub> - C <sub>14</sub>	mg/kg	50	Org-020	[NT]	18	<50	<50	0	[NT]	[NT]
TRH C <sub>15</sub> - C <sub>28</sub>	mg/kg	100	Org-020	[NT]	18	<100	<100	0	[NT]	[NT]
TRH C <sub>29</sub> - C <sub>36</sub>	mg/kg	100	Org-020	[NT]	18	<100	<100	0	[NT]	[NT]
TRH >C <sub>10</sub> -C <sub>16</sub>	mg/kg	50	Org-020	[NT]	18	<50	<50	0	[NT]	[NT]
TRH >C <sub>16</sub> -C <sub>34</sub>	mg/kg	100	Org-020	[NT]	18	<100	<100	0	[NT]	[NT]
TRH >C <sub>34</sub> -C <sub>40</sub>	mg/kg	100	Org-020	[NT]	18	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	18	92	74	22	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	24	05/07/2021	05/07/2021		[NT]	[NT]
Date analysed	-			[NT]	24	05/07/2021	05/07/2021		[NT]	[NT]
TRH C <sub>10</sub> - C <sub>14</sub>	mg/kg	50	Org-020	[NT]	24	<50	<50	0	[NT]	[NT]
TRH C <sub>15</sub> - C <sub>28</sub>	mg/kg	100	Org-020	[NT]	24	<100	<100	0	[NT]	[NT]
TRH C <sub>29</sub> - C <sub>36</sub>	mg/kg	100	Org-020	[NT]	24	110	110	0	[NT]	[NT]
TRH >C <sub>10</sub> -C <sub>16</sub>	mg/kg	50	Org-020	[NT]	24	<50	<50	0	[NT]	[NT]
TRH >C <sub>16</sub> -C <sub>34</sub>	mg/kg	100	Org-020	[NT]	24	100	110	10	[NT]	[NT]
TRH >C <sub>34</sub> -C <sub>40</sub>	mg/kg	100	Org-020	[NT]	24	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	24	86	85	1	[NT]	[NT]

Client Reference: 216010

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	05/07/2021	05/07/2021		[NT]	[NT]
Date analysed	-			[NT]	31	06/07/2021	05/07/2021		[NT]	[NT]
TRH C <sub>10</sub> - C <sub>14</sub>	mg/kg	50	Org-020	[NT]	31	<50	<50	0	[NT]	[NT]
TRH C <sub>15</sub> - C <sub>28</sub>	mg/kg	100	Org-020	[NT]	31	<100	<100	0	[NT]	[NT]
TRH C <sub>29</sub> - C <sub>36</sub>	mg/kg	100	Org-020	[NT]	31	<100	<100	0	[NT]	[NT]
TRH >C <sub>10</sub> -C <sub>16</sub>	mg/kg	50	Org-020	[NT]	31	<50	<50	0	[NT]	[NT]
TRH >C <sub>16</sub> -C <sub>34</sub>	mg/kg	100	Org-020	[NT]	31	<100	<100	0	[NT]	[NT]
TRH >C <sub>34</sub> -C <sub>40</sub>	mg/kg	100	Org-020	[NT]	31	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	31	88	92	4	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	05/07/2021	05/07/2021		[NT]	[NT]
Date analysed	-			[NT]	41	06/07/2021	05/07/2021		[NT]	[NT]
TRH C <sub>10</sub> - C <sub>14</sub>	mg/kg	50	Org-020	[NT]	41	<50	<50	0	[NT]	[NT]
TRH C <sub>15</sub> - C <sub>28</sub>	mg/kg	100	Org-020	[NT]	41	<100	<100	0	[NT]	[NT]
TRH C <sub>29</sub> - C <sub>36</sub>	mg/kg	100	Org-020	[NT]	41	170	260	42	[NT]	[NT]
TRH >C <sub>10</sub> -C <sub>16</sub>	mg/kg	50	Org-020	[NT]	41	<50	<50	0	[NT]	[NT]
TRH >C <sub>16</sub> -C <sub>34</sub>	mg/kg	100	Org-020	[NT]	41	130	240	59	[NT]	[NT]
TRH >C <sub>34</sub> -C <sub>40</sub>	mg/kg	100	Org-020	[NT]	41	160	270	51	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	41	94	100	6	[NT]	[NT]

Client Reference: 216010

QUALITY CONTROL: PAHs in Soil				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	273158-8
Date extracted	-			05/07/2021	1	05/07/2021	05/07/2021		05/07/2021	05/07/2021
Date analysed	-			06/07/2021	1	06/07/2021	06/07/2021		06/07/2021	06/07/2021
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	94
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	77	82
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	86	95
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	119	105
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	100	90
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	102	93
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	70	74
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	81	95
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	102	1	105	113	7	114	100

QUALITY CONTROL: PAHs in Soil				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	273158-45
Date extracted	-			[NT]	18	05/07/2021	05/07/2021		05/07/2021	05/07/2021
Date analysed	-			[NT]	18	06/07/2021	06/07/2021		06/07/2021	06/07/2021
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	92	90
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	81	79
Fluorene	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	91	88
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	103	109
Anthracene	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	88	93
Pyrene	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	89	95
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	78	76
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	18	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	18	<0.05	<0.05	0	98	100
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	18	114	114	0	98	106

Client Reference: 216010

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	24	05/07/2021	05/07/2021		[NT]	[NT]
Date analysed	-			[NT]	24	06/07/2021	06/07/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	24	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	24	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	24	110	111	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	05/07/2021	05/07/2021		[NT]	[NT]
Date analysed	-			[NT]	31	06/07/2021	06/07/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	31	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	31	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	31	108	111	3	[NT]	[NT]

Client Reference: 216010

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	05/07/2021	05/07/2021		[NT]	[NT]
Date analysed	-			[NT]	41	06/07/2021	06/07/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	41	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	41	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	41	117	114	3	[NT]	[NT]

Client Reference: 216010

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	273158-8
Date extracted	-			05/07/2021	1	05/07/2021	05/07/2021		05/07/2021	05/07/2021
Date analysed	-			06/07/2021	1	06/07/2021	06/07/2021		06/07/2021	06/07/2021
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	90	96
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	89	96
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	109	95
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	115	95
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	110	97
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	101
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	121	95
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	76	114
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	99	95
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	88
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	98	1	91	90	1	90	97

Client Reference: 216010

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	273158-33
Date extracted	-			[NT]	18	05/07/2021	05/07/2021		05/07/2021	05/07/2021
Date analysed	-			[NT]	18	06/07/2021	06/07/2021		06/07/2021	06/07/2021
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	89	87
HCB	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	85	83
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	81	73
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	101	105
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	97	105
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	92	106
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	99	105
Endrin	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	102	80
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	83	90
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	74	78
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	18	99	99	0	93	89

Client Reference: 216010

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	273158-45
Date extracted	-			[NT]	24	05/07/2021	05/07/2021		05/07/2021	05/07/2021
Date analysed	-			[NT]	24	06/07/2021	06/07/2021		06/07/2021	06/07/2021
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	85	83
HCB	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	81	83
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	79	69
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	117	103
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	114	93
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	109	104
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	105	97
Endrin	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	90	76
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	99	88
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	74	76
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	24	93	92	1	95	93

Client Reference: 216010

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	05/07/2021	05/07/2021		[NT]	[NT]
Date analysed	-			[NT]	31	06/07/2021	06/07/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	31	98	100	2	[NT]	[NT]

Client Reference: 216010

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	05/07/2021	05/07/2021		[NT]	[NT]
Date analysed	-			[NT]	41	06/07/2021	06/07/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	41	104	100	4	[NT]	[NT]

Client Reference: 216010

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	273158-8
Date extracted	-			05/07/2021	1	05/07/2021	05/07/2021		05/07/2021	05/07/2021
Date analysed	-			06/07/2021	1	06/07/2021	06/07/2021		06/07/2021	06/07/2021
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	116	88
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	95	89
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	73	85
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	80	124
Chlorpyrifos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	105	97
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	73	80
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	83	93
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	98	1	91	90	1	90	97

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	273158-45
Date extracted	-			[NT]	18	05/07/2021	05/07/2021		05/07/2021	05/07/2021
Date analysed	-			[NT]	18	06/07/2021	06/07/2021		06/07/2021	06/07/2021
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	96	88
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	82	81
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	71	71
Malathion	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	98	108
Chlorpyrifos	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	95	95
Parathion	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	73	78
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	83	91
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	18	99	99	0	93	93

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			[NT]	24	05/07/2021	05/07/2021		05/07/2021	[NT]
Date analysed	-			[NT]	24	06/07/2021	06/07/2021		06/07/2021	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	96	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	93	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	79	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	116	[NT]
Chlorpyrifos	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	109	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	82	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	99	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	24	93	92	1	95	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	05/07/2021	05/07/2021		[NT]	[NT]
Date analysed	-			[NT]	31	06/07/2021	06/07/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	31	98	100	2	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	05/07/2021	05/07/2021		[NT]	[NT]
Date analysed	-			[NT]	41	06/07/2021	06/07/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	41	104	100	4	[NT]	[NT]

Client Reference: 216010

QUALITY CONTROL: PCBs in Soil				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	273158-8
Date extracted	-			05/07/2021	1	05/07/2021	05/07/2021		05/07/2021	05/07/2021
Date analysed	-			06/07/2021	1	06/07/2021	06/07/2021		06/07/2021	06/07/2021
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	120	92
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	98	1	91	90	1	90	97

QUALITY CONTROL: PCBs in Soil				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	273158-45
Date extracted	-			[NT]	18	05/07/2021	05/07/2021		05/07/2021	05/07/2021
Date analysed	-			[NT]	18	06/07/2021	06/07/2021		06/07/2021	06/07/2021
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	18	<0.1	<0.1	0	98	102
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	18	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	18	99	99	0	93	93

QUALITY CONTROL: PCBs in Soil				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			[NT]	24	05/07/2021	05/07/2021		05/07/2021	[NT]
Date analysed	-			[NT]	24	06/07/2021	06/07/2021		06/07/2021	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	24	<0.1	<0.1	0	114	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	24	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	24	93	92	1	95	[NT]

Client Reference: 216010

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	05/07/2021	05/07/2021		[NT]	[NT]
Date analysed	-			[NT]	31	06/07/2021	06/07/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	31	98	100	2	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	05/07/2021	05/07/2021		[NT]	[NT]
Date analysed	-			[NT]	41	06/07/2021	06/07/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	41	104	100	4	[NT]	[NT]

Client Reference: 216010

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	273158-8
Date prepared	-			08/07/2021	1	08/07/2021	08/07/2021		08/07/2021	08/07/2021
Date analysed	-			08/07/2021	1	08/07/2021	08/07/2021		08/07/2021	08/07/2021
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	109	91
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	105	94
Chromium	mg/kg	1	Metals-020	<1	1	1	2	67	98	91
Copper	mg/kg	1	Metals-020	<1	1	<1	<1	0	95	82
Lead	mg/kg	1	Metals-020	<1	1	2	2	0	106	#
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	96	84
Nickel	mg/kg	1	Metals-020	<1	1	<1	<1	0	94	87
Zinc	mg/kg	1	Metals-020	<1	1	5	7	33	107	78

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	273158-33
Date prepared	-			[NT]	18	08/07/2021	08/07/2021		08/07/2021	08/07/2021
Date analysed	-			[NT]	18	08/07/2021	08/07/2021		08/07/2021	08/07/2021
Arsenic	mg/kg	4	Metals-020	[NT]	18	<4	<4	0	111	102
Cadmium	mg/kg	0.4	Metals-020	[NT]	18	<0.4	<0.4	0	107	104
Chromium	mg/kg	1	Metals-020	[NT]	18	6	5	18	104	108
Copper	mg/kg	1	Metals-020	[NT]	18	3	2	40	103	99
Lead	mg/kg	1	Metals-020	[NT]	18	13	10	26	113	106
Mercury	mg/kg	0.1	Metals-021	[NT]	18	<0.1	<0.1	0	95	97
Nickel	mg/kg	1	Metals-020	[NT]	18	2	1	67	102	105
Zinc	mg/kg	1	Metals-020	[NT]	18	17	14	19	116	98

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	273158-45
Date prepared	-			[NT]	24	08/07/2021	08/07/2021		08/07/2021	08/07/2021
Date analysed	-			[NT]	24	08/07/2021	08/07/2021		08/07/2021	08/07/2021
Arsenic	mg/kg	4	Metals-020	[NT]	24	<4	<4	0	100	103
Cadmium	mg/kg	0.4	Metals-020	[NT]	24	<0.4	<0.4	0	99	103
Chromium	mg/kg	1	Metals-020	[NT]	24	7	7	0	100	99
Copper	mg/kg	1	Metals-020	[NT]	24	2	2	0	95	96
Lead	mg/kg	1	Metals-020	[NT]	24	6	6	0	106	94
Mercury	mg/kg	0.1	Metals-021	[NT]	24	<0.1	<0.1	0	92	98
Nickel	mg/kg	1	Metals-020	[NT]	24	1	1	0	97	99
Zinc	mg/kg	1	Metals-020	[NT]	24	12	12	0	103	102

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	31	08/07/2021	08/07/2021		[NT]	[NT]
Date analysed	-			[NT]	31	08/07/2021	08/07/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	31	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	31	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	31	7	7	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	31	3	3	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	31	21	24	13	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	31	2	2	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	31	10	9	11	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	41	08/07/2021	08/07/2021		[NT]	[NT]
Date analysed	-			[NT]	41	08/07/2021	08/07/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	41	5	5	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	41	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	41	12	11	9	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	41	13	12	8	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	41	26	28	7	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	41	0.3	0.4	29	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	41	3	3	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	41	22	22	0	[NT]	[NT]

Client Reference: 216010

QUALITY CONTROL: Misc Soil - Inorg				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	273158-8
Date prepared	-			05/07/2021	1	05/07/2021	05/07/2021		05/07/2021	05/07/2021
Date analysed	-			05/07/2021	1	05/07/2021	05/07/2021		05/07/2021	05/07/2021
Total Cyanide	mg/kg	0.5	Inorg-014	<0.5	1	<0.5	<0.5	0	101	93
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	1	<5	<5	0	100	96

QUALITY CONTROL: Misc Soil - Inorg				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	31	05/07/2021	05/07/2021		[NT]	[NT]
Date analysed	-			[NT]	31	05/07/2021	05/07/2021		[NT]	[NT]
Total Cyanide	mg/kg	0.5	Inorg-014	[NT]	31	<0.5	<0.5	0	[NT]	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	[NT]	31	<5	<5	0	[NT]	[NT]

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

Quality Control Definitions	
<b>Blank</b>	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.
<b>Duplicate</b>	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.
<b>Matrix Spike</b>	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.
<b>LCS (Laboratory Control Sample)</b>	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.
<b>Surrogate Spike</b>	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
<p>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.</p> <p>Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.</p> <p>Spikes for Physical and Aggregate Tests are not applicable.</p> <p>For VOCs in water samples, three vials are required for duplicate or spike analysis.</p> <p>Duplicates: &gt;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; &lt;10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Measurement Uncertainty estimates are available for most tests upon request.</p> <p>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.</p> <p>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.</p>

## Report Comments

8 metals in soil - # Percent recovery is not possible to report due to the inhomogeneous nature of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

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

Note: Samples were sub-sampled from jars provided by the client.

## Ming To

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**From:** Greta Petzold  
**Sent:** Monday, 12 July 2021 10:25 AM  
**To:** Ben Pieterse; Samplereceipt  
**Cc:** Simon Song; Lab Results  
**Subject:** RE: Results for Registration 273158 216010

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged  
**Categories:** Additional

*Ref: 273158-A.  
TAT Standard.  
Due: 19/07/2021  
M7.*

Hi Ben,

We'll get that booked in for you

Kind Regards,

**Greta Petzold | Senior Report Coordinator | Envirolab Services**

**Great Science. Great Service.**

12 Ashley Street Chatswood NSW 2067  
T 612 9910 6200  
E [GPetzold@envirolab.com.au](mailto:GPetzold@envirolab.com.au) | W [www.envirolab.com.au](http://www.envirolab.com.au)

Follow us on: [LinkedIn](#) | [Facebook](#) | [Twitter](#)

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

**From:** Ben Pieterse <[ben@envsolutions.com.au](mailto:ben@envsolutions.com.au)>  
**Sent:** Monday, 12 July 2021 9:41 AM  
**To:** Greta Petzold <[GPetzold@envirolab.com.au](mailto:GPetzold@envirolab.com.au)>; Lab Results <[labresults@envsolutions.com.au](mailto:labresults@envsolutions.com.au)>  
**Cc:** Simon Song <[ssong@envirolab.com.au](mailto:ssong@envirolab.com.au)>  
**Subject:** RE: Results for Registration 273158 216010

**CAUTION:** This email originated from outside of the organisation. Do not act on instructions, click links or open attachments unless you recognise the sender and know the content is authentic and safe.

Hi Greta,

Could I please request TRH analysis on the following samples:

19 S-16  
27 S-24  
29 S-26  
30 S-27

Thanks,

**Ben Pieterse**  
Environmental Scientist | **ENV Solutions**  
313 River St Ballina  
PO Box 248 Ballina NSW 2478 | M: 0478 170 771



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

## SAMPLE RECEIPT ADVICE

Client Details	
<b>Client</b>	ENV Solutions Pty Ltd
<b>Attention</b>	Ben Pieterse

Sample Login Details	
<b>Your reference</b>	216010
<b>Envirolab Reference</b>	273158-A
<b>Date Sample Received</b>	02/07/2021
<b>Date Instructions Received</b>	12/07/2021
<b>Date Results Expected to be Reported</b>	19/07/2021

Sample Condition	
<b>Samples received in appropriate condition for analysis</b>	Yes
<b>No. of Samples Provided</b>	additional analyses on 4 soils
<b>Turnaround Time Requested</b>	Standard
<b>Temperature on Receipt (°C)</b>	7
<b>Cooling Method</b>	Ice
<b>Sampling Date Provided</b>	YES

Comments	
Nil	

Please direct any queries to:

Aileen Hie	Jacinta Hurst
<b>Phone: 02 9910 6200</b>	<b>Phone: 02 9910 6200</b>
<b>Fax: 02 9910 6201</b>	<b>Fax: 02 9910 6201</b>
<b>Email: ahie@envirolab.com.au</b>	<b>Email: jhurst@envirolab.com.au</b>

Analysis Underway, details on the following page:



**EnviroLab Services Pty Ltd**

ABN 37 112 535 645

12 Ashley St Chatswood NSW 2067

ph 02 9910 6200 fax 02 9910 6201

customerservice@envirolab.com.au

www.envirolab.com.au

Sample ID	TRH in Soil (C6-C9) NEPM	svTRH (C10-C40) in Soil	On Hold
S-01-0-0.1			✓
S-02-0-0.1			✓
S-02-0.35-0.45			✓
S-03-0-0.1			✓
S-03-0.45-0.55			✓
S-04-0-0.1			✓
S-05-0-0.1			✓
S-06-0-0.1			✓
S-06-0.35-0.45			✓
S-07-0-0.1			✓
S-08-0-0.1			✓
S-09-0-0.1			✓
S-10-0-0.1			✓
S-11-0-0.1			✓
S-12-0-0.1			✓
S-13-0-0.1			✓
S-14-0-0.1			✓
S-15-0-0.1			✓
S-16-0-0.1	✓	✓	
S-17-0-0.1			✓
S-18-0-0.1			✓
S-19-0-0.1			✓
S-20-0-0.1			✓
S-21-0-0.1			✓
S-22-0-0.1			✓
S-23-0-0.1			✓
S-24-0-0.1	✓	✓	
S-25-0-0.1			✓
S-26-0-0.1	✓	✓	
S-27-0-0.1	✓	✓	
S-28-0-0.1			✓
S-28 AS-0-0.1			✓



**EnviroLab Services Pty Ltd**

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12 Ashley St Chatswood NSW 2067

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Sample ID	TRH In Soil (C6-C9) NEPM	svTRH (C10-C40) In Soil	On Hold
TS-01-0-0.1			✓
TS-02-0-0.1			✓
TS-03-0-0.1			✓
TS-04-0-0.1			✓
TS-05-0-0.1			✓
TS-06-0-0.1			✓
TS-07-0-0.1			✓
TS-08-0-0.1			✓
TS-09-0-0.1			✓
TS-10-0-0.1			✓
QA1			✓
QA2			✓
QA3			✓

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

### Additional Info

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

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

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

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

## CERTIFICATE OF ANALYSIS 273158-A

Client Details	
<b>Client</b>	ENV Solutions Pty Ltd
<b>Attention</b>	Ben Pieterse
<b>Address</b>	313 River St, Ballina, NSW, 2478

Sample Details	
<b>Your Reference</b>	<u>216010</u>
<b>Number of Samples</b>	additional analyses on 4 soils
<b>Date samples received</b>	02/07/2021
<b>Date completed instructions received</b>	12/07/2021

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	
<b>Date results requested by</b>	19/07/2021
<b>Date of Issue</b>	19/07/2021
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. <b>Tests not covered by NATA are denoted with *</b>	

**Results Approved By**  
 Dragana Tomas, Senior Chemist  
 Josh Williams, LC Supervisor

**Authorised By**



Nancy Zhang, Laboratory Manager

TRH in Soil (C6-C9) NEPM					
Our Reference		273158-A-19	273158-A-27	273158-A-29	273158-A-30
Your Reference	UNITS	S-16	S-24	S-26	S-27
Depth		0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	13/07/2021	13/07/2021	13/07/2021	13/07/2021
Date analysed	-	13/07/2021	13/07/2021	13/07/2021	13/07/2021
TRH C <sub>6</sub> - C <sub>9</sub>	mg/kg	<25	<25	<25	<25
TRH C <sub>6</sub> - C <sub>10</sub>	mg/kg	<25	<25	<25	<25
Surrogate aaa-Trifluorotoluene	%	106	91	94	90

svTRH (C10-C40) in Soil					
Our Reference		273158-A-19	273158-A-27	273158-A-29	273158-A-30
Your Reference	UNITS	S-16	S-24	S-26	S-27
Depth		0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021	29/06/2021	29/06/2021
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	13/07/2021	13/07/2021	13/07/2021	13/07/2021
Date analysed	-	13/07/2021	13/07/2021	13/07/2021	13/07/2021
TRH C <sub>10</sub> - C <sub>14</sub>	mg/kg	<50	<50	<50	<50
TRH C <sub>15</sub> - C <sub>28</sub>	mg/kg	<100	<100	<100	<100
TRH C <sub>29</sub> - C <sub>36</sub>	mg/kg	<100	180	190	<100
TRH >C <sub>10</sub> -C <sub>16</sub>	mg/kg	<50	<50	<50	<50
TRH >C <sub>16</sub> -C <sub>34</sub>	mg/kg	<100	170	180	<100
TRH >C <sub>34</sub> -C <sub>40</sub>	mg/kg	<100	150	170	<100
Total +ve TRH (>C <sub>10</sub> -C <sub>40</sub> )	mg/kg	<50	320	340	<50
Surrogate o-Terphenyl	%	68	75	83	73

Method ID	Methodology Summary
<b>Org-020</b>	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.
<b>Org-020</b>	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.
<b>Org-023</b>	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).  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.

Client Reference: 216010

QUALITY CONTROL: TRH in Soil (C6-C9) NEPM				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			13/07/2021	[NT]	[NT]	[NT]	[NT]	13/07/2021	[NT]
Date analysed	-			13/07/2021	[NT]	[NT]	[NT]	[NT]	13/07/2021	[NT]
TRH C <sub>6</sub> - C <sub>9</sub>	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	102	[NT]
TRH C <sub>6</sub> - C <sub>10</sub>	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	104	[NT]	[NT]	[NT]	[NT]	113	[NT]

Client Reference: 216010

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			13/07/2021	[NT]	[NT]	[NT]	[NT]	13/07/2021	[NT]
Date analysed	-			13/07/2021	[NT]	[NT]	[NT]	[NT]	13/07/2021	[NT]
TRH C <sub>10</sub> - C <sub>14</sub>	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	95	[NT]
TRH C <sub>15</sub> - C <sub>28</sub>	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH C <sub>29</sub> - C <sub>36</sub>	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	80	[NT]
TRH >C <sub>10</sub> -C <sub>16</sub>	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	95	[NT]
TRH >C <sub>16</sub> -C <sub>34</sub>	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH >C <sub>34</sub> -C <sub>40</sub>	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	80	[NT]
Surrogate o-Terphenyl	%		Org-020	67	[NT]	[NT]	[NT]	[NT]	98	[NT]

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

Quality Control Definitions	
<b>Blank</b>	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.
<b>Duplicate</b>	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.
<b>Matrix Spike</b>	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.
<b>LCS (Laboratory Control Sample)</b>	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.
<b>Surrogate Spike</b>	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
<p>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.</p> <p>Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.</p> <p>Spikes for Physical and Aggregate Tests are not applicable.</p> <p>For VOCs in water samples, three vials are required for duplicate or spike analysis.</p> <p>Duplicates: &gt;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; &lt;10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Measurement Uncertainty estimates are available for most tests upon request.</p> <p>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.</p> <p>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.</p>

## Ming To

---

**From:** Greta Petzold  
**Sent:** Monday, 19 July 2021 11:39 AM  
**To:** Ben Pieterse; Samplereceipt  
**Cc:** Lab Results  
**Subject:** RE: Results for Registration 273158-A 216010

Ref: 273158-B.  
TAT: standard  
Due: 26/07/2021  
MT

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Hi Ben,

No worries, we'll get that booked in for you. And as per our phone conversation, you are happy to go ahead with sample out of holding time

Cheers

Kind Regards,

**Greta Petzold | Senior Report Coordinator | Envirolab Services**

**Great Science. Great Service.**

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

**From:** Ben Pieterse <[ben@envsolutions.com.au](mailto:ben@envsolutions.com.au)>  
**Sent:** Monday, 19 July 2021 11:36 AM  
**To:** Greta Petzold <[GPetzold@envirolab.com.au](mailto:GPetzold@envirolab.com.au)>; Lab Results <[labresults@envsolutions.com.au](mailto:labresults@envsolutions.com.au)>  
**Subject:** RE: Results for Registration 273158-A 216010

**CAUTION:** This email originated from outside of the organisation. Do not act on instructions, click links or open attachments unless you recognise the sender and know the content is authentic and safe.

Hi Greta,

As per our call, Could I please schedule samples <sup>28</sup> S-25 and <sup>29</sup> S-26 for silica gel clean-up / TRH analysis (S-25 being from the original lab batch of 273158).

Kind regards,

**Ben Pieterse**  
Environmental Scientist | **ENV Solutions**  
313 River St Ballina  
PO Box 248 Ballina NSW 2478 | M: 0478 170 771  
[ben@envsolutions.com.au](mailto:ben@envsolutions.com.au) | [www.envsolutions.com.au](http://www.envsolutions.com.au)



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## SAMPLE RECEIPT ADVICE

Client Details	
<b>Client</b>	ENV Solutions Pty Ltd
<b>Attention</b>	Ben Pieterse

Sample Login Details	
<b>Your reference</b>	216010
<b>Envirolab Reference</b>	273158-B
<b>Date Sample Received</b>	02/07/2021
<b>Date Instructions Received</b>	19/07/2021
<b>Date Results Expected to be Reported</b>	26/07/2021

Sample Condition	
<b>Samples received in appropriate condition for analysis</b>	Holding time exceedance
<b>No. of Samples Provided</b>	additional analysis
<b>Turnaround Time Requested</b>	Standard
<b>Temperature on Receipt (°C)</b>	7
<b>Cooling Method</b>	Ice
<b>Sampling Date Provided</b>	YES

Comments
Please contact the laboratory within 24 hours if you wish to cancel the aforementioned testing. Otherwise testing will proceed as per the COC and hence invoice accordingly.

Please direct any queries to:

Aileen Hie	Jacinta Hurst
<b>Phone:</b> 02 9910 6200	<b>Phone:</b> 02 9910 6200
<b>Fax:</b> 02 9910 6201	<b>Fax:</b> 02 9910 6201
<b>Email:</b> ahie@envirolab.com.au	<b>Email:</b> jhurst@envirolab.com.au

Analysis Underway, details on the following page:



**EnviroLab Services Pty Ltd**

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Sample ID	sTPH in Soil (C10-C40)-Silica	On Hold
S-01-0-0.1		✓
S-02-0-0.1		✓
S-02-0.35-0.45		✓
S-03-0-0.1		✓
S-03-0.45-0.55		✓
S-04-0-0.1		✓
S-05-0-0.1		✓
S-06-0-0.1		✓
S-06-0.35-0.45		✓
S-07-0-0.1		✓
S-08-0-0.1		✓
S-09-0-0.1		✓
S-10-0-0.1		✓
S-11-0-0.1		✓
S-12-0-0.1		✓
S-13-0-0.1		✓
S-14-0-0.1		✓
S-15-0-0.1		✓
S-16-0-0.1		✓
S-17-0-0.1		✓
S-18-0-0.1		✓
S-19-0-0.1		✓
S-20-0-0.1		✓
S-21-0-0.1		✓
S-22-0-0.1		✓
S-23-0-0.1		✓
S-24-0-0.1		✓
S-25-0-0.1	✓	
S-26-0-0.1	✓	
S-27-0-0.1		✓
S-28-0-0.1		✓
S-28 AS-0-0.1		✓



**EnviroLab Services Pty Ltd**

ABN 37 112 535 645

12 Ashley St Chatswood NSW 2067

ph 02 9910 6200 fax 02 9910 6201

customerservice@envirolab.com.au

www.envirolab.com.au

Sample ID	sTPH in Soil (C10-C40)-Silica	On Hold
TS-01-0-0.1		✓
TS-02-0-0.1		✓
TS-03-0-0.1		✓
TS-04-0-0.1		✓
TS-05-0-0.1		✓
TS-06-0-0.1		✓
TS-07-0-0.1		✓
TS-08-0-0.1		✓
TS-09-0-0.1		✓
TS-10-0-0.1		✓
QA1		✓
QA2		✓
QA3		✓

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

### Additional Info

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

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

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

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

## CERTIFICATE OF ANALYSIS 273158-B

### Client Details

<b>Client</b>	ENV Solutions Pty Ltd
<b>Attention</b>	Ben Pieterse
<b>Address</b>	313 River St, Ballina, NSW, 2478

### Sample Details

<b>Your Reference</b>	<u>216010</u>
<b>Number of Samples</b>	additional analysis
<b>Date samples received</b>	02/07/2021
<b>Date completed instructions received</b>	19/07/2021

### 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

<b>Date results requested by</b>	26/07/2021
<b>Date of Issue</b>	22/07/2021
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Accredited for compliance with ISO/IEC 17025 - Testing. <b>Tests not covered by NATA are denoted with *</b>	

#### Results Approved By

Dragana Tomas, Senior Chemist

#### Authorised By



Nancy Zhang, Laboratory Manager

sTPH in Soil (C10-C40)-Silica			
Our Reference		273158-B-28	273158-B-29
Your Reference	UNITS	S-25	S-26
Depth		0-0.1	0-0.1
Date Sampled		29/06/2021	29/06/2021
Type of sample		Soil	Soil
Date extracted	-	21/07/2021	21/07/2021
Date analysed	-	22/07/2021	22/07/2021
TPH C <sub>10</sub> - C <sub>14</sub>	mg/kg	<50	<50
TPH C <sub>15</sub> - C <sub>28</sub>	mg/kg	<100	<100
TPH C <sub>29</sub> - C <sub>36</sub>	mg/kg	100	<100
TPH >C <sub>10</sub> -C <sub>16</sub>	mg/kg	<50	<50
TPH >C <sub>16</sub> -C <sub>34</sub>	mg/kg	100	<100
TPH >C <sub>34</sub> -C <sub>40</sub>	mg/kg	<100	<100
Surrogate o-Terphenyl	%	108	91

Method ID	Methodology Summary
<b>Org-020</b>	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.

Client Reference: 216010

QUALITY CONTROL: sTPH in Soil (C10-C40)-Silica					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			21/07/2021	28	21/07/2021	21/07/2021		21/07/2021	[NT]
Date analysed	-			21/07/2021	28	22/07/2021	22/07/2021		22/07/2021	[NT]
TPH C <sub>10</sub> - C <sub>14</sub>	mg/kg	50	Org-020	<50	28	<50	<50	0	83	[NT]
TPH C <sub>15</sub> - C <sub>28</sub>	mg/kg	100	Org-020	<100	28	<100	<100	0	87	[NT]
TPH C <sub>29</sub> - C <sub>36</sub>	mg/kg	100	Org-020	<100	28	100	<100	0	64	[NT]
TPH >C <sub>10</sub> -C <sub>16</sub>	mg/kg	50	Org-020	<50	28	<50	<50	0	83	[NT]
TPH >C <sub>16</sub> -C <sub>34</sub>	mg/kg	100	Org-020	<100	28	100	<100	0	87	[NT]
TPH >C <sub>34</sub> -C <sub>40</sub>	mg/kg	100	Org-020	<100	28	<100	<100	0	64	[NT]
Surrogate o-Terphenyl	%		Org-020	79	28	108	91	17	112	[NT]

QUALITY CONTROL: sTPH in Soil (C10-C40)-Silica					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	29	21/07/2021	21/07/2021		[NT]	[NT]
Date analysed	-			[NT]	29	22/07/2021	22/07/2021		[NT]	[NT]
TPH C <sub>10</sub> - C <sub>14</sub>	mg/kg	50	Org-020	[NT]	29	<50	<50	0	[NT]	[NT]
TPH C <sub>15</sub> - C <sub>28</sub>	mg/kg	100	Org-020	[NT]	29	<100	<100	0	[NT]	[NT]
TPH C <sub>29</sub> - C <sub>36</sub>	mg/kg	100	Org-020	[NT]	29	<100	<100	0	[NT]	[NT]
TPH >C <sub>10</sub> -C <sub>16</sub>	mg/kg	50	Org-020	[NT]	29	<50	<50	0	[NT]	[NT]
TPH >C <sub>16</sub> -C <sub>34</sub>	mg/kg	100	Org-020	[NT]	29	<100	<100	0	[NT]	[NT]
TPH >C <sub>34</sub> -C <sub>40</sub>	mg/kg	100	Org-020	[NT]	29	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	29	91	92	1	[NT]	[NT]

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

Quality Control Definitions	
<b>Blank</b>	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.
<b>Duplicate</b>	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.
<b>Matrix Spike</b>	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.
<b>LCS (Laboratory Control Sample)</b>	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.
<b>Surrogate Spike</b>	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
<p>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.</p> <p>Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.</p> <p>Spikes for Physical and Aggregate Tests are not applicable.</p> <p>For VOCs in water samples, three vials are required for duplicate or spike analysis.</p> <p>Duplicates: &gt;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; &lt;10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Measurement Uncertainty estimates are available for most tests upon request.</p> <p>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.</p> <p>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.</p>





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NSW 2478



NATA Accredited  
Accreditation Number 1261  
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing  
NATA is a signatory to the ILAC Mutual Recognition  
Arrangement for the mutual recognition of the  
equivalence of testing, medical testing, calibration,  
inspection, proficiency testing scheme providers and  
reference materials producers reports and certificates.

Attention: Ben Pieterse

Report 807751-S

Project name

Project ID 216010

Received Date Jul 02, 2021

Client Sample ID			QA1A	QA2A	QA3A
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S21-JI04640	S21-JI04641	S21-JI04642
Date Sampled			Jun 29, 2021	Jun 30, 2021	Jun 30, 2021
Test/Reference	LOR	Unit			
<b>Organochlorine Pesticides</b>					
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
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
Dibutylchloroendate (surr.)	1	%	129	114	116
Tetrachloro-m-xylene (surr.)	1	%	65	60	91
<b>Heavy Metals</b>					
Arsenic	2	mg/kg	< 2	< 2	2.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	5.5	11	11
Copper	5	mg/kg	< 5	< 5	< 5
Lead	5	mg/kg	< 5	< 5	26
Mercury	0.1	mg/kg	< 0.1	< 0.1	0.1
Nickel	5	mg/kg	< 5	< 5	< 5
Zinc	5	mg/kg	< 5	< 5	7.0

Client Sample ID			QA1A	QA2A	QA3A
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S21-JI04640	S21-JI04641	S21-JI04642
Date Sampled			Jun 29, 2021	Jun 30, 2021	Jun 30, 2021
Test/Reference	LOR	Unit			
% Moisture	1	%	16	12	35
Cyanide (total)	1	mg/kg	-	-	< 1
<b>Total Recoverable Hydrocarbons</b>					
TRH C6-C9	20	mg/kg	-	-	< 20
TRH C10-C14	20	mg/kg	-	-	< 20
TRH C15-C28	50	mg/kg	-	-	56
TRH C29-C36	50	mg/kg	-	-	< 50
TRH C10-C36 (Total)	50	mg/kg	-	-	56
Naphthalene <sup>N02</sup>	0.5	mg/kg	-	-	< 0.5
TRH C6-C10	20	mg/kg	-	-	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	-	-	< 20
TRH >C10-C16	50	mg/kg	-	-	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	-	-	< 50
TRH >C16-C34	100	mg/kg	-	-	120
TRH >C34-C40	100	mg/kg	-	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	-	120
<b>BTEX</b>					
Benzene	0.1	mg/kg	-	-	< 0.1
Toluene	0.1	mg/kg	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2
o-Xylene	0.1	mg/kg	-	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	103
<b>Polycyclic Aromatic Hydrocarbons</b>					
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	1.2
Acenaphthene	0.5	mg/kg	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	-	-	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	< 0.5
Total PAH*	0.5	mg/kg	-	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	-	87
p-Terphenyl-d14 (surr.)	1	%	-	-	90

Client Sample ID			QA1A	QA2A	QA3A
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S21-JI04640	S21-JI04641	S21-JI04642
Date Sampled			Jun 29, 2021	Jun 30, 2021	Jun 30, 2021
Test/Reference	LOR	Unit			
<b>Organophosphorus Pesticides</b>					
Azinphos-methyl	0.2	mg/kg	-	-	< 0.2
Bolstar	0.2	mg/kg	-	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	-	< 0.2
Chlorpyrifos	0.2	mg/kg	-	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	-	< 0.2
Coumaphos	2	mg/kg	-	-	< 2
Demeton-S	0.2	mg/kg	-	-	< 0.2
Demeton-O	0.2	mg/kg	-	-	< 0.2
Diazinon	0.2	mg/kg	-	-	< 0.2
Dichlorvos	0.2	mg/kg	-	-	< 0.2
Dimethoate	0.2	mg/kg	-	-	< 0.2
Disulfoton	0.2	mg/kg	-	-	< 0.2
EPN	0.2	mg/kg	-	-	< 0.2
Ethion	0.2	mg/kg	-	-	< 0.2
Ethoprop	0.2	mg/kg	-	-	< 0.2
Ethyl parathion	0.2	mg/kg	-	-	< 0.2
Fenitrothion	0.2	mg/kg	-	-	< 0.2
Fensulfothion	0.2	mg/kg	-	-	< 0.2
Fenthion	0.2	mg/kg	-	-	< 0.2
Malathion	0.2	mg/kg	-	-	< 0.2
Merphos	0.2	mg/kg	-	-	< 0.2
Methyl parathion	0.2	mg/kg	-	-	< 0.2
Mevinphos	0.2	mg/kg	-	-	< 0.2
Monocrotophos	2	mg/kg	-	-	< 2
Naled	0.2	mg/kg	-	-	< 0.2
Omethoate	2	mg/kg	-	-	< 2
Phorate	0.2	mg/kg	-	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	-	< 0.2
Pyrazophos	0.2	mg/kg	-	-	< 0.2
Ronnel	0.2	mg/kg	-	-	< 0.2
Terbufos	0.2	mg/kg	-	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	-	< 0.2
Tokuthion	0.2	mg/kg	-	-	< 0.2
Trichloronate	0.2	mg/kg	-	-	< 0.2
Triphenylphosphate (surr.)	1	%	-	-	84
<b>Polychlorinated Biphenyls</b>					
Aroclor-1016	0.5	mg/kg	-	-	< 0.5
Aroclor-1221	0.1	mg/kg	-	-	< 0.1
Aroclor-1232	0.5	mg/kg	-	-	< 0.5
Aroclor-1242	0.5	mg/kg	-	-	< 0.5
Aroclor-1248	0.5	mg/kg	-	-	< 0.5
Aroclor-1254	0.5	mg/kg	-	-	< 0.5
Aroclor-1260	0.5	mg/kg	-	-	< 0.5
Total PCB*	0.5	mg/kg	-	-	< 0.5
Dibutylchlorodate (surr.)	1	%	-	-	116
Tetrachloro-m-xylene (surr.)	1	%	-	-	91

Client Sample ID			QA1A	QA2A	QA3A
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S21-JI04640	S21-JI04641	S21-JI04642
Date Sampled			Jun 29, 2021	Jun 30, 2021	Jun 30, 2021
Test/Reference	LOR	Unit			
<b>Phenols (Halogenated)</b>					
2-Chlorophenol	0.5	mg/kg	-	-	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	-	-	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	-	-	< 1
2,4,6-Trichlorophenol	1	mg/kg	-	-	< 1
2,6-Dichlorophenol	0.5	mg/kg	-	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	-	-	< 1
Pentachlorophenol	1	mg/kg	-	-	< 1
Tetrachlorophenols - Total	10	mg/kg	-	-	< 10
Total Halogenated Phenol*	1	mg/kg	-	-	< 1
<b>Phenols (non-Halogenated)</b>					
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	-	-	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	-	-	< 5
2-Nitrophenol	1	mg/kg	-	-	< 1
2,4-Dimethylphenol	0.5	mg/kg	-	-	< 0.5
2,4-Dinitrophenol	5	mg/kg	-	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	< 0.4
Total cresols*	0.5	mg/kg	-	-	< 0.5
4-Nitrophenol	5	mg/kg	-	-	< 5
Dinoseb	20	mg/kg	-	-	< 20
Phenol	0.5	mg/kg	-	-	< 0.5
Phenol-d6 (surr.)	1	%	-	-	58
Total Non-Halogenated Phenol*	20	mg/kg	-	-	< 20

**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.

<b>Description</b>	<b>Testing Site</b>	<b>Extracted</b>	<b>Holding Time</b>
<b>Eurofins Suite B15</b>			
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Jul 02, 2021	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Sydney	Jul 02, 2021	14 Days
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Jul 02, 2021	28 Days
<b>Metals M8</b> - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Jul 02, 2021	180 Days
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jul 02, 2021	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jul 02, 2021	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jul 02, 2021	14 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jul 02, 2021	14 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Jul 02, 2021	14 Days
Phenols (Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Jul 02, 2021	14 Days
Phenols (non-Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Jul 02, 2021	14 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Jul 02, 2021	14 Days
Cyanide (total) - Method: E054 Total Cyanide	Sydney	Jul 02, 2021	14 Days



# Environment Testing

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IANZ # 1280

**Company Name:** ENV Solutions Pty Ltd  
**Address:** 1/35 North Creek Road  
Ballina  
NSW 2478

**Project Name:** 216010

**Order No.:** 807751  
**Report #:** 0421 519 354  
**Phone:**  
**Fax:**

**Received:** Jul 2, 2021 1:50 PM  
**Due:** Jul 9, 2021  
**Priority:** 5 Day  
**Contact Name:** Ben Pieterse

**Eurofins Analytical Services Manager : Elvis Dsouza**

Sample Detail		Matrix		LAB ID
No	Sample ID	Sample Date	Sampling Time	LAB ID
1	QA1A	Jun 29, 2021	Soil	S21-J104640
2	QA2A	Jun 30, 2021	Soil	S21-J104641
3	QA3A	Jun 30, 2021	Soil	S21-J104642
<b>Test Counts</b>				
Asbestos - AS4964				
Cyanide (total)				
Organochlorine Pesticides				
Metals M8				
Eurofins Suite B15				
Moisture Set				
Eurofins Suite B7A				

**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**

<b>Dry</b>	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
<b>LOR</b>	Limit of Reporting.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>CRM</b>	Certified Reference Material - reported as percent recovery.
<b>Method Blank</b>	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.
<b>Surr - Surrogate</b>	The addition of a like compound to the analyte target and reported as percentage recovery.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>USEPA</b>	United States Environmental Protection Agency
<b>APHA</b>	American Public Health Association
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>QSM</b>	US Department of Defense Quality Systems Manual Version 5.3
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>NCP</b>	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.
<b>TEQ</b>	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
<b>Method Blank</b>							
<b>Organochlorine Pesticides</b>							
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	
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	
<b>Method Blank</b>							
<b>Heavy Metals</b>							
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	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
<b>Method Blank</b>							
Cyanide (total)	mg/kg	< 1			1	Pass	
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons</b>							
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	
<b>Method Blank</b>							
<b>BTEX</b>							
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	

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
o-Xylene	mg/kg	< 0.1		0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3		0.3	Pass	
<b>Method Blank</b>						
<b>Polycyclic Aromatic Hydrocarbons</b>						
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	
<b>Method Blank</b>						
<b>Organophosphorus Pesticides</b>						
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	

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Tokuthion	mg/kg	< 0.2		0.2	Pass	
Trichloronate	mg/kg	< 0.2		0.2	Pass	
<b>Method Blank</b>						
<b>Polychlorinated Biphenyls</b>						
Aroclor-1016	mg/kg	< 0.5		0.5	Pass	
Aroclor-1221	mg/kg	< 0.1		0.1	Pass	
Aroclor-1232	mg/kg	< 0.5		0.5	Pass	
Aroclor-1242	mg/kg	< 0.5		0.5	Pass	
Aroclor-1248	mg/kg	< 0.5		0.5	Pass	
Aroclor-1254	mg/kg	< 0.5		0.5	Pass	
Aroclor-1260	mg/kg	< 0.5		0.5	Pass	
Total PCB*	mg/kg	< 0.5		0.5	Pass	
<b>Method Blank</b>						
<b>Phenols (Halogenated)</b>						
2-Chlorophenol	mg/kg	< 0.5		0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5		0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1		1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1		1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5		0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1		1	Pass	
Pentachlorophenol	mg/kg	< 1		1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10		10	Pass	
<b>Method Blank</b>						
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20		20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5		5	Pass	
2-Nitrophenol	mg/kg	< 1		1	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5		0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5		5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2		0.2	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4		0.4	Pass	
4-Nitrophenol	mg/kg	< 5		5	Pass	
Dinoseb	mg/kg	< 20		20	Pass	
Phenol	mg/kg	< 0.5		0.5	Pass	
<b>LCS - % Recovery</b>						
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	%	91		70-130	Pass	
4,4'-DDD	%	112		70-130	Pass	
4,4'-DDE	%	93		70-130	Pass	
4,4'-DDT	%	113		70-130	Pass	
a-BHC	%	90		70-130	Pass	
Aldrin	%	92		70-130	Pass	
b-BHC	%	88		70-130	Pass	
d-BHC	%	92		70-130	Pass	
Dieldrin	%	88		70-130	Pass	
Endosulfan I	%	92		70-130	Pass	
Endosulfan II	%	89		70-130	Pass	
Endosulfan sulphate	%	82		70-130	Pass	
Endrin	%	121		70-130	Pass	
Endrin aldehyde	%	94		70-130	Pass	
Endrin ketone	%	76		70-130	Pass	
g-BHC (Lindane)	%	86		70-130	Pass	
Heptachlor	%	123		70-130	Pass	
Heptachlor epoxide	%	87		70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Hexachlorobenzene	%	98			70-130	Pass	
Methoxychlor	%	110			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Heavy Metals</b>							
Arsenic	%	103			80-120	Pass	
Cadmium	%	99			80-120	Pass	
Chromium	%	107			80-120	Pass	
Copper	%	107			80-120	Pass	
Lead	%	105			80-120	Pass	
Mercury	%	108			80-120	Pass	
Nickel	%	107			80-120	Pass	
Zinc	%	99			80-120	Pass	
<b>LCS - % Recovery</b>							
Cyanide (total)	%	110			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Total Recoverable Hydrocarbons</b>							
TRH C6-C9	%	77			70-130	Pass	
TRH C10-C14	%	88			70-130	Pass	
Naphthalene	%	91			70-130	Pass	
TRH C6-C10	%	73			70-130	Pass	
TRH >C10-C16	%	87			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>BTEX</b>							
Benzene	%	82			70-130	Pass	
Toluene	%	83			70-130	Pass	
Ethylbenzene	%	85			70-130	Pass	
m&p-Xylenes	%	84			70-130	Pass	
o-Xylene	%	87			70-130	Pass	
Xylenes - Total*	%	85			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Polycyclic Aromatic Hydrocarbons</b>							
Acenaphthene	%	93			70-130	Pass	
Acenaphthylene	%	95			70-130	Pass	
Anthracene	%	96			70-130	Pass	
Benz(a)anthracene	%	93			70-130	Pass	
Benzo(a)pyrene	%	100			70-130	Pass	
Benzo(b&j)fluoranthene	%	106			70-130	Pass	
Benzo(g,h,i)perylene	%	99			70-130	Pass	
Benzo(k)fluoranthene	%	95			70-130	Pass	
Chrysene	%	95			70-130	Pass	
Dibenz(a,h)anthracene	%	108			70-130	Pass	
Fluoranthene	%	96			70-130	Pass	
Fluorene	%	98			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	105			70-130	Pass	
Naphthalene	%	93			70-130	Pass	
Phenanthrene	%	96			70-130	Pass	
Pyrene	%	95			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Organophosphorus Pesticides</b>							
Dimethoate	%	78			70-130	Pass	
Ethion	%	95			70-130	Pass	
Fenitrothion	%	94			70-130	Pass	
Methyl parathion	%	72			70-130	Pass	
Mevinphos	%	101			70-130	Pass	

Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code		
<b>LCS - % Recovery</b>							
<b>Polychlorinated Biphenyls</b>							
Aroclor-1016	%	77	70-130	Pass			
Aroclor-1260	%	94	70-130	Pass			
<b>LCS - % Recovery</b>							
<b>Phenols (Halogenated)</b>							
2-Chlorophenol	%	94	30-130	Pass			
2,4-Dichlorophenol	%	93	30-130	Pass			
2,4,5-Trichlorophenol	%	96	30-130	Pass			
2,4,6-Trichlorophenol	%	88	30-130	Pass			
2,6-Dichlorophenol	%	91	30-130	Pass			
4-Chloro-3-methylphenol	%	104	30-130	Pass			
Pentachlorophenol	%	71	30-130	Pass			
Tetrachlorophenols - Total	%	70	30-130	Pass			
<b>LCS - % Recovery</b>							
<b>Phenols (non-Halogenated)</b>							
2-Cyclohexyl-4,6-dinitrophenol	%	94	30-130	Pass			
2-Methyl-4,6-dinitrophenol	%	114	30-130	Pass			
2-Nitrophenol	%	120	30-130	Pass			
2,4-Dimethylphenol	%	96	30-130	Pass			
2,4-Dinitrophenol	%	110	30-130	Pass			
2-Methylphenol (o-Cresol)	%	97	30-130	Pass			
3&4-Methylphenol (m&p-Cresol)	%	98	30-130	Pass			
4-Nitrophenol	%	120	30-130	Pass			
Dinoseb	%	129	30-130	Pass			
Phenol	%	95	30-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>							
<b>Organochlorine Pesticides</b>							
4,4'-DDE	S21-Jn60078	NCP	%	79	70-130	Pass	
4,4'-DDT	S21-Jn60682	NCP	%	75	70-130	Pass	
a-BHC	S21-Jn60682	NCP	%	80	70-130	Pass	
b-BHC	S21-JI01008	NCP	%	71	70-130	Pass	
d-BHC	S21-Jn60682	NCP	%	71	70-130	Pass	
Dieldrin	S21-Jn60078	NCP	%	77	70-130	Pass	
Endosulfan I	S21-JI01008	NCP	%	71	70-130	Pass	
Endosulfan II	S21-Jn60078	NCP	%	81	70-130	Pass	
Endrin	S21-Jn60399	NCP	%	84	70-130	Pass	
g-BHC (Lindane)	S21-Jn60682	NCP	%	83	70-130	Pass	
Heptachlor	S21-Jn60078	NCP	%	72	70-130	Pass	
Hexachlorobenzene	S21-Jn60682	NCP	%	74	70-130	Pass	
Methoxychlor	S21-JI01008	NCP	%	97	70-130	Pass	
<b>Spike - % Recovery</b>							
<b>Heavy Metals</b>							
Arsenic	S21-JI06563	NCP	%	97	75-125	Pass	
Cadmium	S21-JI06563	NCP	%	97	75-125	Pass	
Chromium	S21-JI06563	NCP	%	101	75-125	Pass	
Copper	S21-JI06563	NCP	%	100	75-125	Pass	
Lead	S21-JI06563	NCP	%	107	75-125	Pass	
Mercury	S21-JI06563	NCP	%	106	75-125	Pass	
Nickel	S21-JI06563	NCP	%	102	75-125	Pass	
Zinc	S21-JI06563	NCP	%	96	75-125	Pass	
<b>Spike - % Recovery</b>							
<b>Organochlorine Pesticides</b>							
				Result 1			

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Chlordanes - Total	S21-JI09400	NCP	%	112		70-130	Pass	
Aldrin	S21-JI09400	NCP	%	110		70-130	Pass	
Endosulfan sulphate	S21-JI09400	NCP	%	94		70-130	Pass	
Endrin ketone	S21-JI09400	NCP	%	96		70-130	Pass	
Heptachlor epoxide	S21-JI09400	NCP	%	106		70-130	Pass	
<b>Spike - % Recovery</b>								
				Result 1				
Cyanide (total)	S21-JI04646	NCP	%	108		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons</b>				Result 1				
TRH C6-C9	S21-JI04818	NCP	%	88		70-130	Pass	
TRH C10-C14	S21-JI02915	NCP	%	71		70-130	Pass	
Naphthalene	S21-JI04818	NCP	%	110		70-130	Pass	
TRH C6-C10	S21-JI04818	NCP	%	87		70-130	Pass	
TRH >C10-C16	S21-JI02915	NCP	%	94		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>BTEX</b>				Result 1				
Benzene	S21-JI04818	NCP	%	94		70-130	Pass	
Toluene	S21-JI04818	NCP	%	96		70-130	Pass	
Ethylbenzene	S21-JI04818	NCP	%	93		70-130	Pass	
m&p-Xylenes	S21-JI04818	NCP	%	98		70-130	Pass	
o-Xylene	S21-JI04818	NCP	%	95		70-130	Pass	
Xylenes - Total*	S21-JI04818	NCP	%	97		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1				
Acenaphthene	S21-JI04800	NCP	%	106		70-130	Pass	
Acenaphthylene	S21-JI04800	NCP	%	105		70-130	Pass	
Anthracene	S21-JI04800	NCP	%	104		70-130	Pass	
Benz(a)anthracene	S21-JI04800	NCP	%	105		70-130	Pass	
Benzo(a)pyrene	S21-JI04800	NCP	%	110		70-130	Pass	
Benzo(b&j)fluoranthene	S21-JI04800	NCP	%	109		70-130	Pass	
Benzo(g,h,i)perylene	S21-JI04800	NCP	%	111		70-130	Pass	
Benzo(k)fluoranthene	S21-JI04800	NCP	%	110		70-130	Pass	
Chrysene	S21-JI04800	NCP	%	108		70-130	Pass	
Dibenz(a,h)anthracene	S21-JI04800	NCP	%	120		70-130	Pass	
Fluoranthene	S21-JI04800	NCP	%	107		70-130	Pass	
Fluorene	S21-JI04800	NCP	%	110		70-130	Pass	
Indeno(1,2,3-cd)pyrene	S21-JI04800	NCP	%	111		70-130	Pass	
Naphthalene	S21-JI04800	NCP	%	105		70-130	Pass	
Phenanthrene	S21-JI04800	NCP	%	109		70-130	Pass	
Pyrene	S21-JI04800	NCP	%	107		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Organophosphorus Pesticides</b>				Result 1				
Diazinon	S21-JI09400	NCP	%	74		70-130	Pass	
Dimethoate	S21-JI10414	NCP	%	93		70-130	Pass	
Ethion	S21-JI09400	NCP	%	105		70-130	Pass	
Fenitrothion	S21-JI09400	NCP	%	97		70-130	Pass	
Mevinphos	S21-JI09400	NCP	%	104		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Polychlorinated Biphenyls</b>				Result 1				
Aroclor-1016	S21-JI09400	NCP	%	93		70-130	Pass	
Aroclor-1260	S21-JI09400	NCP	%	113		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Phenols (Halogenated)</b>				Result 1				

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Chlorophenol	S21-JI10414	NCP	%	85			30-130	Pass	
2.4-Dichlorophenol	S21-JI10414	NCP	%	91			30-130	Pass	
2.4.5-Trichlorophenol	S21-JI10414	NCP	%	111			30-130	Pass	
2.4.6-Trichlorophenol	S21-JI10414	NCP	%	96			30-130	Pass	
2.6-Dichlorophenol	S21-JI10414	NCP	%	90			30-130	Pass	
4-Chloro-3-methylphenol	S21-JI10414	NCP	%	91			30-130	Pass	
Pentachlorophenol	S21-JI10414	NCP	%	114			30-130	Pass	
Tetrachlorophenols - Total	S21-JI10414	NCP	%	113			30-130	Pass	
<b>Spike - % Recovery</b>									
<b>Phenols (non-Halogenated)</b>				Result 1					
2-Nitrophenol	S21-JI10414	NCP	%	124			30-130	Pass	
2.4-Dimethylphenol	S21-JI10414	NCP	%	92			30-130	Pass	
2-Methylphenol (o-Cresol)	S21-JI10414	NCP	%	80			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S21-JI10414	NCP	%	90			30-130	Pass	
4-Nitrophenol	S21-JI10414	NCP	%	122			30-130	Pass	
Phenol	S21-JI10414	NCP	%	80			30-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Organochlorine Pesticides</b>				Result 1	Result 2	RPD			
Chlordanes - Total	S21-JI02290	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-JI02290	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-JI02290	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
<b>Duplicate</b>									
<b>Heavy Metals</b>				Result 1	Result 2	RPD			
Arsenic	S21-JI02450	NCP	mg/kg	2.2	< 2	47	30%	Fail	Q15
Cadmium	S21-JI02450	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-JI02450	NCP	mg/kg	7.3	5.6	26	30%	Pass	
Copper	S21-JI02450	NCP	mg/kg	5.5	< 5	12	30%	Pass	
Lead	S21-JI02450	NCP	mg/kg	36	31	18	30%	Pass	
Mercury	S21-JI02450	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-JI02450	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S21-JI02450	NCP	mg/kg	20	19	5.0	30%	Pass	
<b>Duplicate</b>									
% Moisture	S21-Jn42318	NCP	%	11	10	8.0	30%	Pass	
<b>Duplicate</b>									
<b>Organochlorine Pesticides</b>				Result 1	Result 2	RPD			
Toxaphene	S21-JI02121	NCP	mg/kg	< 10	< 10	<1	30%	Pass	

Duplicate								
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD		
TRH C6-C9	S21-JI03551	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C10-C14	S21-JI02924	NCP	mg/kg	< 20	20	140	30%	Fail Q15
TRH C15-C28	S21-JI02924	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S21-JI02924	NCP	mg/kg	< 50	< 50	<1	30%	Pass
Naphthalene	S21-JI03551	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S21-JI03551	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	S21-JI02924	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S21-JI02924	NCP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S21-JI02924	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S21-JI03551	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S21-JI03551	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S21-JI03551	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S21-JI03551	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S21-JI03551	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total*	S21-JI03551	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S21-JI02121	NCP	mg/kg	0.6	< 0.5	44	30%	Fail Q15
Fluorene	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S21-JI02121	NCP	mg/kg	0.7	< 0.5	34	30%	Fail Q15
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bolstar	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chlorfenvinphos	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chlorpyrifos	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chlorpyrifos-methyl	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Coumaphos	S21-JI02121	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Demeton-S	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Demeton-O	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Diazinon	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dichlorvos	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dimethoate	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Disulfoton	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
EPN	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Ethion	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Ethoprop	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Ethyl parathion	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fenitrothion	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Fensulfthion	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fenthion	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Malathion	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Merphos	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Methyl parathion	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Mevinphos	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Monocrotophos	S21-JI02121	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Naled	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Omethoate	S21-JI02121	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Phorate	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pirimiphos-methyl	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrazophos	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Ronnel	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Terbufos	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tetrachlorvinphos	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tokuthion	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloronate	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S21-JI02121	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Aroclor-1221	S21-JI02121	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Aroclor-1232	S21-JI02121	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Aroclor-1242	S21-JI02121	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Aroclor-1248	S21-JI02121	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Aroclor-1254	S21-JI02121	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Aroclor-1260	S21-JI02121	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Total PCB*	S21-JI02121	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	S21-JI02121	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	S21-JI02121	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	S21-JI02121	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	S21-JI02121	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	S21-JI02121	NCP	mg/kg	< 10	< 10	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	S21-JI02121	NCP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	S21-JI02121	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Nitrophenol	S21-JI02121	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	S21-JI02121	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	S21-JI02121	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	S21-JI02121	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	S21-JI02121	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	S21-JI02121	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	S21-JI02121	NCP	mg/kg	< 0.5	< 0.5	<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
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:**

Elvis Dsouza	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Charl Du Preez	Senior Analyst-Inorganic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (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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# **APPENDIX F**

Site Specific EILs

## Fresh

	Contaminant	National Park and areas of high conservation	Urban residential and open public spaces	Commercial and Industrial
Generic	Arsenic	20	50	80
	DDT	3	180	640
	Naphthalene	10	170	370
	Pb	110	270	440
Soil Specific	Cu			
	Ni			
	Cr III			
	Zn			

## Aged

	Contaminant	National Park and areas of high conservation	Urban residential and open public spaces	Commercial and Industrial
Generic	Arsenic	40	100	160
	DDT	3	180	640
	Naphthalene	10	170	370
	Pb	470	1100	1800
Soil Specific	Cu			
	Ni			
	Cr III			
	Zn			

CEC cmolc/kg dwt	pH	%OC	%Clay
6.5	4.2	1.7	10

Morand, D.T. (1994). *Soil Landscapes of the Lismore-Ballina 1:100000 Sheet Map*, Soil Conservation Service

# APPENDIX

## G

Borelogs

<b>PROJECT NUMBER</b> 216010	<b>DRILLING DATE</b> 29/06/2021
<b>PROJECT NAME</b> Sandhills Wetland Project	<b>TOTAL DEPTH</b> 5.0 m
<b>CLIENT</b> Byron Shire Council	<b>DRILLING COMPANY</b> ENV Solutions
<b>ADDRESS</b> Cowper St, Byron Bay NSW	<b>DRILLING METHOD</b> Solid Flight Augur

**COMMENTS** On Cowper St, near 'Invert' **LOGGED BY** Ben Pieterse

Depth (m)	Graphic Log	Material Description Surface: Grass	Samples (ASS)	Samples (Contam)	Additional Observations
0.2		CLAY: brown, soft, dense, wet, high organic content	BH1_0.1		No anthropogenic refuse, staining or non-natural odour encountered
0.4		SAND: yellow, dry-moist, fine-medium, loose	BH1_0.5		
0.6		Sandy SILT: black, moist, dense, fine, soft	BH1_0.65		
0.8		SAND: grey, moist, fine-medium, loose	BH1_1.0		
1.2		SAND: brown, wet, fine-medium, soft. Saturated from 1.5m	BH1_1.5		
1.6			BH1_2.0		
2.0			BH1_2.5		
2.4			BH1_3.0		
2.8			BH1_3.5		
3.2			BH1_4.0		
3.8		As above, with green-brown colouration	BH1_4.5		Slight sulfur odour
4.2		Sandy CLAY: grey-brown, saturated, medium-firm, dense, fine.	BH1_5.0		
4.4					
4.6					
4.8					
5.0		EOH at target depth of 5.0m			
5.2					
5.4					

<b>PROJECT NUMBER</b> 216010	<b>DRILLING DATE</b> 29/06/2021
<b>PROJECT NAME</b> Sandhills Wetland Project	<b>TOTAL DEPTH</b> 5.0 m
<b>CLIENT</b> Byron Shire Council	<b>DRILLING COMPANY</b> ENV Solutions
<b>ADDRESS</b> Cowper St, Byron Bay NSW	<b>DRILLING METHOD</b> Solid Flight Augur

**COMMENTS** In grass verge north of wetland cell 1 **LOGGED BY** Ben Pieterse

Depth (m)	Graphic Log	Material Description Surface: Grass	Samples (ASS)	Samples (Contam)	Additional Observations
0.2		Sandy CLAY topsoil, brown, wet, firm, organic. (fill)	BH2_0.1		No anthropogenic refuse, staining or non-natural odour encountered  Fill material from surface to 0.55 m
0.4		Sandy CLAY: brown, wet, firm, fine-medium with pale brown CLAY banding (fill)	BH2_0.5		
0.6		SAND: yellow, dry-moist, fine-medium, loose (natural)	BH2_1.0		
1.4			BH2_1.5		
2.0			BH2_2.0		
2.2		Sandy CLAY: grey, moist, soft-medium, fine.	BH2_2.5	Sulfur odour GW from 2.5 m	
2.4		Increase in moisture until saturated at 2.5 m			
3.0		Clayey SAND: grey, saturated, soft, medium sands.	BH2_3.0	No odour	
3.5			BH2_3.5		
4.0			BH2_4.0		
4.5			BH2_4.5		
5.0			BH2_5.0		
5.0		EOH at target depth of 5.0m			

<b>PROJECT NUMBER</b> 216010	<b>DRILLING DATE</b> 29/06/2021
<b>PROJECT NAME</b> Sandhills Wetland Project	<b>TOTAL DEPTH</b> 1.0 m
<b>CLIENT</b> Byron Shire Council	<b>DRILLING COMPANY</b> ENV Solutions
<b>ADDRESS</b> Cowper St, Byron Bay NSW	<b>DRILLING METHOD</b> Hand Augur

<b>COMMENTS</b>	<b>LOGGED BY</b> Tony Coyle
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Depth (m)	Graphic Log	Material Description	Samples (ASS)	Samples (Contam)	Additional Observations
0.2		Clayey SAND: brown, some organic inclusions			No anthropogenic refuse, staining or non-natural odour encountered
		Sand: brown, loose, dry, well sorted			
0.4		SAND: yellow-brown, loose, moist		S-3_0.5	
1.0		Termination at 1.0 m into natural soils			
1.2					
1.4					
1.6					
1.8					
2.0					
2.2					
2.4					
2.6					
2.8					
3.0					
3.2					
3.4					
3.6					
3.8					
4.0					
4.2					
4.4					
4.6					
4.8					
5.0					
5.2					
5.4					

<b>PROJECT NUMBER</b> 216010	<b>DRILLING DATE</b> 29/06/2021
<b>PROJECT NAME</b> Sandhills Wetland Project	<b>TOTAL DEPTH</b> 2.5 m
<b>CLIENT</b> Byron Shire Council	<b>DRILLING COMPANY</b> ENV Solutions
<b>ADDRESS</b> Cowper St, Byron Bay NSW	<b>DRILLING METHOD</b> Hand Augur

**COMMENTS** **LOGGED BY** Tony Coyle

Depth (m)	Graphic Log	Material Description	Samples (ASS)	Samples (Contam)	Additional Observations
0.2		Clayey SAND: organic, dark brown, soft, medium sands	BH3_0.0	S-06_0.4 + QA1 & QA1A	No anthropogenic refuse, staining or non-natural odour encountered
0.4		Clayey SAND, brown, firm, medium sands, well sorted, moist	BH3_0.5		
0.6					
0.8					
1.0					
1.2		SAND: yellow, well sorted, increasing moisture until saturated from 2.0	BH3_1.0		Slight sulfur odour
1.4					
1.6					
1.8					
2.0					
2.2					
2.4					
2.6		EOH at 2.5 m, borehole collapsing in watertable			
2.8					
3.0					
3.2					
3.4					
3.6					
3.8					
4.0					
4.2					
4.4					
4.6					
4.8					
5.0					
5.2					
5.4					

<b>PROJECT NUMBER</b> 216010	<b>DRILLING DATE</b> 29/06/2021
<b>PROJECT NAME</b> Sandhills Wetland Project	<b>TOTAL DEPTH</b> 2.5 m
<b>CLIENT</b> Byron Shire Council	<b>DRILLING COMPANY</b> ENV Solutions
<b>ADDRESS</b> Cowper St, Byron Bay NSW	<b>DRILLING METHOD</b> Hand Augur

**COMMENTS** **LOGGED BY** Tony Coyle

Depth (m)	Graphic Log	Material Description	Samples (ASS)	Samples (Contam)	Additional Observations
0.2		Sandy CLAY: dark grey, very high organic content, spongy-soft	BH4_0.0		No anthropogenic refuse, staining or non-natural odour encountered
0.4		Clayey SAND: dark brown, well sorted, moist	BH4_0.5		
0.6		SAND: brown, moist, firm, medium sands, well-sorted	BH4_1.0		
1.0		Clayey SAND: yellow, saturated, firm. No material recovered from 2.0 m	BH4_1.5		
1.2			BH4_2.0		
1.4					
1.6					
1.8					
2.0					
2.2					
2.4					
2.6		EOH at 2.5 m, borehole collapsing in watertable			
2.8					
3.0					
3.2					
3.4					
3.6					
3.8					
4.0					
4.2					
4.4					
4.6					
4.8					
5.0					
5.2					
5.4					

<b>PROJECT NUMBER</b> 216010	<b>DRILLING DATE</b> 29/06/2021
<b>PROJECT NAME</b> Sandhills Wetland Project	<b>TOTAL DEPTH</b> 2.5 m
<b>CLIENT</b> Byron Shire Council	<b>DRILLING COMPANY</b> ENV Solutions
<b>ADDRESS</b> Cowper St, Byron Bay NSW	<b>DRILLING METHOD</b> Hand Augur

**COMMENTS** **LOGGED BY** Tony Coyle

Depth (m)	Graphic Log	Material Description	Samples (ASS)	Samples (Contam)	Additional Observations
0.2		Silty CLAY: black, moist, fine, spongy	BH5_0.0		No anthropogenic refuse, staining or non-natural odour encountered
0.4		Silty CLAY: black, high silt percentage			
0.6		Clayey SAND: grey, firm	BH5_0.5		
0.8					
1.0			BH5_1.0		
1.2					
1.4					
1.6			BH5_1.5		
1.8					
2.0			BH5_2.0		
2.2		Silty SAND: black			
2.4					
2.5			BH5_2.5		
2.6		EOH at 2.5 m, borehole collapsing in watertable			
2.8					
3.0					
3.2					
3.4					
3.6					
3.8					
4.0					
4.2					
4.4					
4.6					
4.8					
5.0					
5.2					
5.4					

<b>PROJECT NUMBER</b> 216010	<b>DRILLING DATE</b> 29/06/2021
<b>PROJECT NAME</b> Sandhills Wetland Project	<b>TOTAL DEPTH</b> 2.0 m
<b>CLIENT</b> Byron Shire Council	<b>DRILLING COMPANY</b> ENV Solutions
<b>ADDRESS</b> Cowper St, Byron Bay NSW	<b>DRILLING METHOD</b> Hand Augur

**COMMENTS** **LOGGED BY** Tony Coyle

Depth (m)	Graphic Log	Material Description	Samples (ASS)	Samples (Contam)	Additional Observations
0.2		Silty CLAY: black, moist, fine, spongy	BH6_0.0		No anthropogenic refuse, staining or non-natural odour encountered
0.4		Silty CLAY: black, high silt percentage			
0.6		Clayey SAND: grey, firm	BH6_0.5		
0.8					
1.0			BH6_1.0		
1.2					
1.4			BH6_1.5		
1.6			BH6_2.0		
2.0		EOH at 2.5 m, borehole collapsing in watertable			
2.2					
2.4					
2.6					
2.8					
3.0					
3.2					
3.4					
3.6					
3.8					
4.0					
4.2					
4.4					
4.6					
4.8					
5.0					
5.2					
5.4					

<b>PROJECT NUMBER</b> 216010	<b>DRILLING DATE</b> 30/06/2021
<b>PROJECT NAME</b> Sandhills Wetland Project	<b>TOTAL DEPTH</b> 1.0 m
<b>CLIENT</b> Byron Shire Council	<b>DRILLING COMPANY</b> ENV Solutions
<b>ADDRESS</b> Cowper St, Byron Bay NSW	<b>DRILLING METHOD</b> Hand Augur

<b>COMMENTS</b>	<b>LOGGED BY</b> Ben Pieterse
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Depth (m)	Graphic Log	Material Description	Samples (ASS)	Samples (Contam)	Additional Observations
0.2		Sandy CLAY: grey-brown, organic, wet		S-2 0.4	No anthropogenic refuse, staining or non-natural odour encountered
0.4		Clayey Sand: brown, moist, fine, soft (possible fill)			
0.6		Clayey SAND: grey, saturated (natural)			
1.0		Termination at 1.0 m			
1.2					
1.4					
1.6					
1.8					
2.0					
2.2					
2.4					
2.6					
2.8					
3.0					
3.2					
3.4					
3.6					
3.8					
4.0					
4.2					
4.4					
4.6					
4.8					
5.0					
5.2					
5.4					

<b>PROJECT NUMBER</b> 216010	<b>DRILLING DATE</b> 30/06/2021
<b>PROJECT NAME</b> Sandhills Wetland Project	<b>TOTAL DEPTH</b> 0.7 m
<b>CLIENT</b> Byron Shire Council	<b>DRILLING COMPANY</b> ENV Solutions
<b>ADDRESS</b> Cowper St, Byron Bay NSW	<b>DRILLING METHOD</b> Hand Augur

<b>COMMENTS</b>	<b>LOGGED BY</b> Ben Pieterse
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Depth (m)	Graphic Log	Material Description	Samples (ASS)	Samples (Contam)	Additional Observations
0.2 0.4 0.6		Sandy CLAY: dark grey, moist, fine (natural)			No anthropogenic refuse, staining or non-natural odour encountered
0.8 1 1.2 1.4 1.6 1.8 2 2.2 2.4 2.6 2.8 3 3.2 3.4 3.6 3.8 4 4.2 4.4 4.6 4.8 5 5.2 5.4		Termination at 0.7 m. No fill encountered.			

<b>PROJECT NUMBER</b> 216010 <b>PROJECT NAME</b> Sandhills Wetland Project <b>CLIENT</b> Byron Shire Council <b>ADDRESS</b> Cowper St, Byron Bay NSW	<b>DRILLING DATE</b> 30/06/2021 <b>TOTAL DEPTH</b> 0.5 m <b>DRILLING COMPANY</b> ENV Solutions <b>DRILLING METHOD</b> Hand Augur
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**COMMENTS** **LOGGED BY** Ben Pieterse

Depth (m)	Graphic Log	Material Description	Samples (ASS)	Samples (Contam)	Additional Observations
0.2 0.4		Sandy CLAY: dark brown, moist, fine-medium			No anthropogenic refuse, staining or non-natural odour encountered
0.6 0.8 1 1.2 1.4 1.6 1.8 2 2.2 2.4 2.6 2.8 3 3.2 3.4 3.6 3.8 4 4.2 4.4 4.6 4.8 5 5.2 5.4		Termination at 0.5 m. No fill encountered.			

<b>PROJECT NUMBER</b> 216010	<b>DRILLING DATE</b> 30/06/2021
<b>PROJECT NAME</b> Sandhills Wetland Project	<b>TOTAL DEPTH</b> 1.0 m
<b>CLIENT</b> Byron Shire Council	<b>DRILLING COMPANY</b> ENV Solutions
<b>ADDRESS</b> Cowper St, Byron Bay NSW	<b>DRILLING METHOD</b> Hand Augur

<b>COMMENTS</b>	<b>LOGGED BY</b> Ben Pieterse
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Depth (m)	Graphic Log	Material Description	Samples (ASS)	Samples (Contam)	Additional Observations
0.2		SAND: dark grey, moist, medium sands, loose			No anthropogenic refuse, staining or non-natural odour encountered
0.4		SAND: yellow, moist, loose, medium			
1.0		Termination at 1.0 m. No fill encountered.			
1.2					
1.4					
1.6					
1.8					
2.0					
2.2					
2.4					
2.6					
2.8					
3.0					
3.2					
3.4					
3.6					
3.8					
4.0					
4.2					
4.4					
4.6					
4.8					
5.0					
5.2					
5.4					

<b>PROJECT NUMBER</b> 216010	<b>DRILLING DATE</b> 30/06/2021
<b>PROJECT NAME</b> Sandhills Wetland Project	<b>TOTAL DEPTH</b> 0.5 m
<b>CLIENT</b> Byron Shire Council	<b>DRILLING COMPANY</b> ENV Solutions
<b>ADDRESS</b> Cowper St, Byron Bay NSW	<b>DRILLING METHOD</b> Hand Augur

**COMMENTS** area waterlogged **LOGGED BY** Ben Pieterse

Depth (m)	Graphic Log	Material Description	Samples (ASS)	Samples (Contam)	Additional Observations
0.2 0.4		Sandy CLAY: dark grey, saturated, soft, fine, natural			No anthropogenic refuse, staining or non-natural odour encountered
0.6 0.8 1 1.2 1.4 1.6 1.8 2 2.2 2.4 2.6 2.8 3 3.2 3.4 3.6 3.8 4 4.2 4.4 4.6 4.8 5 5.2 5.4		Termination at 0.5 m. No fill encountered.			