

# Appendix I

## Contamination assessment



**Transport for NSW**  
Townson Road Upgrade between Richmond Road and  
Jersey Road - Stage 2  
Contamination assessment

December 2020

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# Executive summary

Transport for NSW (TfNSW) engaged GHD Pty Ltd (GHD) to undertake a Detailed Site Investigation (DSI) for the proposed Townson Road Burdekin Road upgrade. The proposed upgrade is located in the suburbs of Marsden Park and Schofields in the North West Growth Area (NWGA). The proposed upgrade area for Stage 1 and Stage 2 are presented on Figure 1, Appendix A. The objectives of this DSI were to:

- Determine the contamination status of soil, sediment, groundwater and surface water that may be encountered during the construction works
- Provide an assessment of the risk to workers during the construction of the road upgrade
- Undertake preliminary in-situ waste classification of soil that may be encountered during the construction, and assessment of surface water and groundwater in the context of disposal or reuse
- Formulate recommendations for the management and remediation of identified contamination during the construction works (if required).

Prior to the DSI, GHD conducted a Preliminary Site Investigation (PSI) report for the proposed upgrade study area in 2010. Based on findings from the PSI, the potential areas of contamination were identified as:

- Potential for hydrocarbon, heavy metals and asbestos impacts from unknown fill material identified at the dam wall constructed at 55 Townson Road.
- Asbestos containing materials (ACM) at 25 Jersey Road.
- Potential hydrocarbon impact of soil and groundwater related to long term quarrying activities at PGH Bricks and Paver quarry at 75 Townson Road, Schofields.
- Potential per- and poly-fluoroalkyl substances (PFAS) and hydrocarbon impacts in soil, groundwater and surface water associated with historic defence activities at HMAS Nirimba, located adjacent.
- Potential hydrocarbon, metals, pesticide and asbestos impacts from historic rail activities.
- Potential pesticide and herbicide contamination of soil and surface water at Bravo Nursery at 9 Townson Road.
- Potential hydrocarbon impacts of soil and groundwater associated with heavy machinery and truck storage yards observed at 6 and 9 Townson Road.
- Potential hydrocarbon and heavy metals impacts from surrounding service stations (Caltex, BP and 7-Eleven) on Richmond Road.

Further information on the PSI findings are presented on section 2.3 of this report.

Based on completed DSI scope of works completed, the findings are:

- The soil sampling locations were selected for geotechnical investigation purposes, however GHD considered these provided good coverage of the study area for soil investigation purposes.

- Fill material was encountered at depths from 0 metres and 2 metres below surface. The fill profile generally comprised sandy clay, silty clay and clay of medium to high plasticity. Alluvium was encountered underlying fill at depths from 0.2 metres to 2.5 metres. Residual soils were observed below the alluvium from 0.2 metres to 5.2 metres. Bedrock composed of shale and siltstone was recorded from depths of 1.3 metres to 20.4 metres underlying residual soils.
- Two groundwater monitoring events (GMEs) were undertaken by GHD on 29 January 2020 from BH06, BH08, BH09 and BH11, and on 25 May 2020 from BH114 and BH102.
- Static groundwater levels ranged from 13.61 metres Australian Height Datum (AHD) (BH6) to 25.9 metres AHD (BH12). Groundwater is generally assumed to flow towards Bells Creek or Eastern Creek.
- Concentrations of contaminants of potential concern (COPC) in all analysed soil and sediment samples were reported below the adopted health screening criteria. Asbestos was not detected in any soil samples.
- Concentration of COPC in groundwater and surface water samples were below the adopted health screening criteria.
- Concentrations of copper, zinc, nickel and cadmium in groundwater and copper and zinc in surface water samples exceeded the adopted freshwater ecological criteria. These elevated concentrations are considered representative of regional groundwater quality.
- PFAS concentrations in groundwater samples were below the laboratory practical quantitation limit (PQL) and below the adopted freshwater ecological criteria.
- PFAS concentrations in surface water samples were above the PQLs however below the adopted health screening criteria and the freshwater ecological criteria.

Based on these findings, GHD concludes:

- The potential health risk to road construction workers within the study area is considered low from a contamination perspective.
- Fill and sediment at sampling locations are classified as General Solid Waste. Based on other TCLP results, sample PC07\_0.4-0.5 would likely be classified as General Solid Waste if TCLP analysis was undertaken.

The groundwater and surface water sampled met the Sydney Water's acceptance standard for trade wastewater. However, it should be noted that some analysis (ie BOD and suspended solids) of water needs to be undertaken and an agreement with Sydney Water needs to be reached, prior to the discharge of pumped groundwater into Sydney Water's wastewater system. With due regard to the proposed construction works, GHD recommends the following:

- The site boundary for Stage 1 and the proposed site compound area was further delineated as presented in Figure 1 in Appendix A (as shown as 'Current Stage 1 footprint'). Following this update it is considered that soil sampling locations are considered sufficient for the investigation of areas of potential concern as nominated in the PSI (GHD, 2019), with the exception of the residential property at 25 Jersey Road, the three stockpiles of fill located south PGH Bricks and Paver quarry property, the stockpile yard and Bravo nursery, as presented on Figure 2, Appendix A. Further assessment of these areas should be completed prior to construction works.

- In addition, further delineation of the Stage 1 site boundary has also indicated where the proposed site compound area is going to be located. No soil sampling or detailed site inspection has been undertaken for this portion of the site. It is recommended that a site inspection for any indication of asbestos or other signs of contamination be undertaken prior to the site compound area being established.
- An unexpected finds protocol (including asbestos management plan) should be adopted and included in the construction environmental management plan for the management of any unexpected contamination (including asbestos) encountered during proposed works.
- Groundwater assessment was not undertaken on the central portion of the study area from the eastern boundary of Bravo Nursery to Durham Road within Stage 1 construction footprint, and from Durham Road to Eastern Creek within Stage 2 construction footprint as presented in Figure 2 in Appendix A as it is understood that surface levels will be raised for the construction of the road and groundwater is only likely to be encountered for pile installation of Floodplain Bridge and Bells Creek Bridge, and possibly for the installation of underground services. If during construction works groundwater is encountered, this should be managed under the groundwater management plan. Waste management plan(s) should be prepared detailing the additional waste classification sampling, analysis, and waste management protocols required during construction.
- Any dewatering and subsequent treatment of groundwater that may be required during construction works must be carried out in accordance with a groundwater management plan.
- Should surface water be utilised during construction works further assessment and analysis of potential contamination prior to its adequate disposal/reuse should be undertaken.

*This report is subject to, and must be read in conjunction with, the limitations set out in section 10 and the assumptions and qualifications contained throughout the Report.*

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# 1. Introduction

## 1.1 Introduction

GHD Pty Ltd (GHD) was commissioned by Transport for New South Wales (TfNSW) to conduct a Detailed Site Investigation (DSI) for the proposed Townson Road and Burdekin Road upgrade (the proposal). The proposal is located in the suburbs of Marsden Park and Schofields in the North West Growth Area (NWGA), NSW. The study area for Stage 1 and Stage 2 is shown on Figure 1, Appendix A.

The DSI was undertaken following the completion of a Preliminary Site Investigation (GHD, 2019, Ref. 12511195) which identified sources of potential contamination across the study area, as presented in section 2.3 of this report.

The DSI were undertaken in conjunction with a geotechnical investigation undertaken by TfNSW from 4 to 27 August 2019. The geotechnical investigation is presented in *Townson Road to Burdekin Road Concept Design Stage, Geotechnical Factual Report, G5313/1, October 2019*.

As the DSI scope of work of was undertaken as a joint effort between TfNSW and GHD, the roles and responsibilities are presented on Table 1-1.

**Table 1-1 Roles and responsibilities of the DSI**

Entity	Roles and responsibilities
TfNSW	<p>Undertake a geotechnical investigation, including:</p> <ul style="list-style-type: none"><li>• Engagement of subcontractor's supervision of drilling, excavation of test pits</li><li>• Installation of four groundwater monitoring wells (BH06, BH08, BH09 and BH12)</li><li>• Preparation of borehole and test pit logs and of a geotechnical investigation report.</li></ul>
GHD	<ul style="list-style-type: none"><li>• Collection of soil samples for contamination assessment from geotechnical investigation locations. GHD personnel were not present full time during the borehole drilling and test pit excavation</li><li>• Guidance on installation of groundwater monitoring wells</li><li>• Collection of groundwater, surface water and sediment samples for contamination assessment</li><li>• Installation of two groundwater monitoring wells (BH102 and BH114)</li><li>• Preparation of this DSI report</li></ul>

## 1.2 Proposed upgrade works

The proposed road upgrade works is planned to be delivered in two stages:

- Stage 1: widen the existing road to a four lane divided road from Richmond Road to south of Jersey Road, including a bridge over Bells Creek (1.6 kilometres). Stage 1 will be delivered over two stages, these include:
  - Interim phase – construction of two lanes and all earthworks
  - Ultimate phase – completion of remainder of works for a four-lane dual carriageway.
- Stage 2: construct a new 2.0 kilometres four lane divided road through Greenfield, crossing Eastern Creek and the western rail line to meet Burdekin Road in the east. Stage 2 includes one large viaduct structure over Eastern Creek and a rail overbridge with retaining walls and a utilities protection structure.

### 1.3 Objective

The objectives of this DSI are to:

- Determine the contamination status of soil, sediment, groundwater and surface water that may be encountered during the construction works
- Provide an assessment of the risk to workers during the construction of the road upgrade
- Undertake preliminary in-situ waste classification of soil that may be encountered during the construction, and assessment of surface water and groundwater in the context of disposal or reuse
- Formulate recommendations for the management and remediation of identified contamination during the construction works (if required).

### 1.4 Regulatory guidelines

This DSI has been completed with consideration of guidelines made or approved by the NSW EPA under Section 105 of the *Contaminated Land Management Act, 1997*. These guidelines include the following key documents:

- National Environmental Protection Council, *National Environment Protection (Assessment of Site Contamination) Measure (NEPM)*, 2013
- NSW EPA, *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*, 2011
- NSW EPA, *Waste Classification Guidelines, Part 1: Classifying Waste*, 2014
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, August 2018)
- Australian Water Quality Guidelines for Fresh and Marine Waters, Volume 3, primary Industries (ANZECC, October 2000)
- NHMRC (2011). Australian Drinking Water Guidelines Paper 6 National Water Quality Management Strategy, updated May 2019.

The assessment has also been considerate of the following additional relevant guidance:

- The Heads of EPAs Australia and New Zealand (HEPA), PFAS National Environmental Management Plan (NEMP), January 2018
- Australian Standard 4482.1/1997, Guide to the sampling and investigation of potentially contaminated soils, 1997.

### 1.5 Scope of work

The scope of works completed by GHD included the following:

- Collection of soil samples from the following geotechnical investigation locations:
  - 11 borehole locations (BH02 to BH13)
  - 10 pavement core locations (PC01 to PC10)
  - 22 test pit locations (TP01 to TP04, TP07 to TP10 and TP12 to TP25)
- Collection of sediments samples from two locations (SED01 and SED04)
- Groundwater sampling of six groundwater wells (BH06, BH08, BH09, BH12, BH102 and BH114)

- Collection of surface water samples from Eastern Creek (SW04) and Bells Creek (SW01)
- Analysis of selected soil, sediments, groundwater and surface water samples for the contaminants of potential concern (COPC) identified in the PSI (refer to section 2.5)
- Assessment of laboratory analytical results with respective guidelines
- Assessment of analytical results for preliminary in-situ soil waste classification
- Preparation of this report documenting the findings of the contamination investigation and providing any recommendations and remediation options (if required).

## **1.6 Limitations**

Limitations associated with this DSI are provided in section 10 which should be read in conjunction with the entirety of this report.

## 2. Study area and environmental setting

### 2.1 Study area identification

A study area location plan is provided in Figure 1, Appendix A. A summary of available information pertaining to the study area is presented in Table 2-1 below.

**Table 2-1 Study area identification**

Information	Details
Address	Burdekin Road to Townson Road (encompassing Meadow and Jersey Roads), Schofields, NSW, 2762
Current land uses	Commercial, residential, recreational and industrial.
Length of the study area	Approximately 3.6 kilometres
Local Government Area	Blacktown Council
Land Use Zoning of the study area	<ul style="list-style-type: none"> <li>• B5 – Business Development</li> <li>• E2 – Environmental Conservation</li> <li>• R2 – Low Density Residential</li> <li>• R3 – Medium Density Residential</li> <li>• RE1 – Public Recreation</li> <li>• RE2 – Private Recreation</li> <li>• RU4 – Primary Production Small Lots</li> <li>• SP2 – Infrastructure</li> </ul>
Surrounding land use	<ul style="list-style-type: none"> <li>• North: The north of the study area is predominantly rural and low density residential. There is a large commercial quarry north of Meadow Road</li> <li>• East: Predominantly low to medium density residential with some scattered commercial businesses</li> <li>• South: Predominantly low to medium density residential, including new development areas (in the vicinity of a former airfield)</li> <li>• West: Mixed commercial/industrial properties and large business park, some fuel stations observed</li> </ul>

### 2.2 Environmental setting

A summary of the environmental setting for the study area is presented in Table 2-2.

**Table 2-2 Environmental setting**

Aspect	Description
Topography	The topography through the study area varies between 20-40 m Australian Height Datum (AHD). The western and eastern portions are at approximately 30 m AHD, with small variations in the land surface.
Soil and landscapes	<p>Soils are primarily identified as South Creek and Blacktown soil landscape. South Creek soil landscape primarily comprises very deep layered sediments over bedrock or relict soils.</p> <p>The Blacktown soil landscape primarily comprises shallow to moderately deep (&lt;100 cm) Red and brown Podzolic Soils in crests, upper slopes and well drained areas; deep (150-300 cm) Yellow Podzolic Soils and Sodoliths on lower slopes and in areas of poor drainage (Soil Conservation Service of NSW 1:100,000 Soil Landscape Series Sheet 9030, Penrith).</p>

Aspect	Description
Acid sulfate soils (ASS)	The CSIRO Atlas of Australian Acid Sulfate Soils indicates the study area as having a low to extremely low probability of occurrence of acid sulfate soils. Land management activities in the study area are not likely to be affected by acid sulphate soil materials.
Geology	The regional geology presented indicates that the study area is underlain by <ul style="list-style-type: none"> <li>• Quaternary sediments (Qa): fine-grained sand, silt and clay. Quaternary sediments are present beneath the courses of Eastern and Bells Creeks.</li> <li>• St Marys Formation (Ts): laterised sand and clay with ferricrete bands, includes silcrete sandstone and shale boulders. The St Mary's formation is located on a rise directly south of the quarry.</li> <li>• Bringelly Shale (Rwb): carbonaceous claystone, laminate, fine to medium-grained lithic sandstone, rare coal.</li> </ul>
Hydrogeology	The 1:2,000,000 <i>Groundwater in New South Wales, Assessment of Pollution Risk Map</i> indicates the study area is likely to be underlain shale, siltstone in other sedimentary basin rocks, with low potential for groundwater movement. The map also indicates that groundwater salinity is likely to be greater than 14,000 mg/L (in the shallowest aquifer), which is unsuitable for stock use. Standing water level (SWL) was recorded at 4.5 m at GW100443 – 1,011 m east of the study area. SWL was recorded during this DSI from 1.6 m (BH102) to 3.74 m (BH06).

### 2.3 Findings from previous investigations

Prior to this DSI, GHD prepared a Preliminary Site Investigation (PSI) (GHD, Ref 12511195, November, 2019). The findings of PSI are presented in Table 2-3.

**Table 2-3 Summary of PSI (GHD, 2019)**

Year	Observations
Findings	Potential sources of contamination identified on the PSI included: <ul style="list-style-type: none"> <li>• Potential for hydrocarbon, metals and asbestos impacts from unknown fill material identified at the Dam wall constructed at 55 Townson Road</li> <li>• Asbestos containing materials (ACM) at 25 Jersey Road</li> <li>• Potential hydrocarbon impact of soil and groundwater related to long term quarrying activities at PGH Bricks and Paver quarry at 75 Townson Road, Schofields</li> <li>• Potential per- and poly-fluoroalkyl substances (PFAS) and hydrocarbon impacts in soil, groundwater and surface water associated with historic defence activities at HMAS Nirimba</li> <li>• Potential hydrocarbon, metals, pesticide and asbestos impacts from historic rail activities</li> <li>• Potential pesticide and herbicide contamination of soil and surface water at Bravo Nursery at 9 Townson Road, Marsden Park</li> <li>• Potential hydrocarbon impacts of soil and groundwater associated with heavy machinery and truck storage yards observed at 6 and 9 Townson Road</li> <li>• Potential hydrocarbon and heavy metals impacts from surrounding service stations on Richmond Road</li> </ul>
POEO register	Review of POEO records during the PSI investigation, indicated the following four licenced properties within one kilometre radius of the study area: <ul style="list-style-type: none"> <li>• PGH Bricks and Paver Pty Ltd (onsite)</li> <li>• Linfox Australia Pty Ltd (general chemicals storage) – (590 m west)</li> <li>• Blacktown Waste Services Pty Ltd (690 m west)</li> <li>• Sydney Trains (onsite).</li> </ul>

Year	Observations
Recommendations	<p>Based on investigation findings, GHD provided the following recommendations:</p> <ul style="list-style-type: none"> <li>• Targeted soil assessment for potential human health risk and to assess for potential on-site reuse or off-site disposal</li> <li>• Soils and surface water in the surrounds of the PGH Bricks and Paver quarry</li> <li>• Soils and surface water inside the footprint and surrounds of the former HMAS Nirimba</li> <li>• Targeted soil assessment of soils within the rail corridor</li> <li>• Soils and surface water within the Bravo Nursery and surrounding watercourses</li> <li>• Targeted shallow soils assessment and surface water within and surrounding the heavy machinery and truck storage yards observed at 6 and 9 Townson Road</li> <li>• Surface water sampling at the storage yard through the study area via surface water run-off.</li> </ul>

## 2.4 Preliminary Conceptual Site Model

Based on findings from the PSI (GHD, 2019), GHD developed a Preliminary Conceptual Site Model (CSM) as presented in Table 2-4.

**Table 2-4 Preliminary conceptual site model**

Sources	Pathway	Receptor	Potentially Complete?
On-site			
Historical use of uncontrolled fill materials in the study area of unknown origin and quality	Direct contact with contaminated fill or soil	Current site users (residents and commercial/industrial workers)	Possible if contamination is identified
Contamination associated with fly tipping	Inhalation and ingestion of contaminated fill, soil or fibres	Future construction workers during road upgrade works and future intrusive maintenance workers	Possible if contamination is identified
Contamination associated with long-term historic Defence activities	Migration of surface impacts into subsurface soils	Neighbouring property users (residential/commercial/industrial)	Unlikely – offsite residential and commercial land users unlikely to come into direct contact with site soils
Contamination associated with long-term quarrying activities		Terrestrial ecological receptors	Possible if contamination is identified
ACM, hydrocarbon, pesticides and herbicide contamination associated with long-term rail activities	Direct contact or inhalation of vapours from contaminated groundwater	Future intrusive maintenance workers	Possibly complete if earthworks encounter groundwater. Potential to encounter shallow groundwater in area and adjacent Easter Creek
Contamination associated with pesticide and herbicide use at nurseries	Vertical and horizontal migration through the unsaturated zone into the saturated zone and horizontal migration within the groundwater	Future construction workers during road upgrade works	
		Current site users	Unlikely – current users and offsite residential and commercial land users unlikely to come into direct contact with groundwater on site
		Neighbouring property users (residential/commercial/industrial)	
		Ecological receptor (groundwater)	Possible if contamination is identified



Sources	Pathway	Receptor	Potentially Complete?
	Migration of surface water towards down-gradient receptors Absorption onto sediments from surface water or groundwater Discharge of groundwater to surface water bodies	Future construction workers during road upgrade works and future intrusive maintenance workers  Aquatic ecological receptors (Eastern Creek, Bells Creek and standing surface water/groundwater present in study area)	Possible if contamination is identified
<b>Off site</b>			
Hydrocarbon contamination from current and historic fuel/potential storage	Direct contact or inhalation of vapours from contaminated groundwater Vertical and horizontal migration through the unsaturated zone into the saturated zone and horizontal migration within the groundwater	Future intrusive maintenance workers	Possibly complete if earthworks encounter groundwater. Potential to encounter shallow groundwater in area and adjacent Eastern Creek
		Future construction workers during road upgrade works	
		Current site users	Unlikely – current users and offsite residential and commercial land users unlikely to come into direct contact with groundwater on site
		Neighbouring property users (residential/commercial/industrial)	
		Ecological receptor (groundwater)	Possible if contamination is identified

## 2.5 Potential contaminants of concern

Based on the findings of the PSI (GHD, 2019), contaminants of potential concern associated with the study area include:

- Asbestos Containing Material (ACM)
- Hydrocarbons including total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene and xylene (BTEX)
- Polycyclic aromatic hydrocarbons (PAH)
- Phenols
- Heavy metals, including arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc
- Organochlorine pesticides (OCP) and organophosphorus pesticides (OPP)
- Polychlorinated biphenyls (PCBs)
- Per- and poly-fluoroalkyl substances (PFAS).

## 3. Data Quality Objectives (DQO)

### 3.1 Overview

A process for establishing data quality objectives for an investigation has been defined in Schedule B(2) of *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM), 2013. The Data Quality Objective (DQO) process was applied to the investigation to ensure that data collection activities are appropriate to achieve the project objectives.

The DQO process involves seven steps as follows:

- Step 1: State the problem
- Step 2: Identify the decision
- Step 3: Identify inputs to the decision
- Step 4: Define the study boundaries
- Step 5: Develop a decision rule
- Step 6: Specify limits on decision errors
- Step 7: Optimise the design for obtaining data.

The seven DQO steps for this project are defined as follows.

### 3.2 Step 1: State the problem

A number of potential sources of contamination in the study area were identified during the PSI (GHD, 2019). These included defence activities, agricultural and commercial land use including, storage of heavy machinery and trucks, as presented on section 2.3 of this report. The problem is as it stands is that if contamination is present, it may have the potential to impact human health or the environment during the construction phase of the road and/or its future operation.

### 3.3 Step 2: Identify the decisions

The key decisions to be made are considered to be:

- Does soil, sediments, groundwater or surface water within the study area present a potential risk to construction workers and ecological receptors?
- What is the preliminary in-situ waste classification for soil within the study area should disposal of the soil be required during construction work?
- Is there a need for further assessment, remediation and/or management of contamination required (if identified)?

### 3.4 Step 3: Identify inputs to the decision

Soil, sediment, groundwater and surface water samples to be collected as outlined in section 1.5 to provide sufficient information to allow for evaluation of the questions set out in section 3.3.

Collected samples analysed for contaminants of potential concern (COPC) including asbestos, metals, BTEX, TRH, PAH, OCP, OPP, PCB and PFAS.

Results analysed against respective guidelines as presented on section 4 of this report and based on laboratory results findings, GHD will revise the preliminary CSM.

GHD will prepare a report documenting the findings of the investigation and provide any recommendations and remediation options (if required).

### **3.5 Step 4: Define the study boundaries**

The lateral boundary of the study area is illustrated on Figure 1, Appendix A.

The maximum vertical boundary for the study area was 20.4 metres, which the deepest groundwater well (BH09) installed. However, soil sampling and investigation was to a maximum of three metres depth.

The time boundary of the investigation was between the 7 August 2019 and 29 January 2020.

### **3.6 Step 5: Develop a decision rule**

The decision rules adopted in this investigation were:

- The concentrations of contaminant of potential concern would be assessed against selected study area investigation levels, which are sourced from NSW EPA endorsed guidelines with reference to study area specific exposure scenarios (see section 4 for further discussion on adopted guidelines).
- When all reported chemical concentrations, or as a minimum, the 95% upper confidence limits of the arithmetic mean concentrations (95% UCL) of all screened chemicals in the study area are below the adopted investigation levels, soil, sediment, groundwater or surface water are considered unlikely constituting an unacceptable risk to potential receptors. In such case, no further investigation, remediation or management is required.
- Conversely, when concentration(s) of contaminant of potential concern exceed the adopted study area investigation levels, further assessment would be required to evaluate the need for additional investigation and/or remediation/management activities.
- The soil analytical results, and where necessary the TCLP leachability results would be assessed in accordance with the Waste Classification Guidelines (NSW EPA, 2014) to determine the likely waste classification categories for the study area soils.
- The investigation work shall stop and report to TfNSW if unexpected finds involving large scale contamination (ie asbestos) are observed during the investigation.

### **3.7 Step 6: Specify limits on decision errors**

Two primary decision error-types may occur due to uncertainties or limitations in the project data set:

- A sample/area may be deemed to pass the nominated criteria, when in fact it does not. This may occur if contamination is 'missed' due to limitations in the sampling plan, or if the project analytical data set is unreliable.
- A sample/area may be deemed to fail the nominated criteria, when in fact it does not. This may occur if the project analytical data set is unreliable, due to inappropriate sampling, sample handling, or analytical procedures.

An assessment will be made as to the likelihood of a decision error being made based on the results of a quality assurance/quality control (QA/QC) assessment and the closeness of the data to assessment criteria. Additionally, statistical methods may be utilised, where applicable, such as 95% Upper Confidence Limit calculations.

The QA/QC assessment will include data quality indicators (DQIs) for completeness, comparability, representativeness, precision and accuracy. The QA/QC assessment is provided in section 6.

The DQIs for sampling techniques and laboratory analysis of collected samples identifies the acceptable level of error for this investigation. The data quality objectives will be assessed by reference to data quality indicators as follows:

- Data representativeness – expresses the degree which sample data accurately and precisely represents a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples in appropriate locations across the study area, and by using an adequate number of sample locations to characterise soil, sediments, surface water and groundwater at the study area. Consistent and repeatable sampling techniques and methods are utilised throughout the sampling.
- Completeness – defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study. If there is insufficient valid data, then additional data are required to be collected.
- Comparability – is a qualitative parameter expressing the confidence with which one data set can be compared with the other. This is achieved through maintaining a level of consistency in techniques used to collect samples and ensuring analysing laboratories use consistent analysis techniques and reporting methods.
- Precision – measures the reproducibility of measurements under a given set of conditions. The precision of the data is assessed by calculating the Relative Per cent Difference (RPD) between duplicate sample pairs.

GHD adopts a nominal acceptance criterion of  $\pm 50\%$  RPD for field duplicates and splits for organics and an acceptance criterion of  $\pm 30\%$  RPD for inorganics. However, it is noted that this will not always be achieved, particularly at low analyte concentrations and in heterogeneous media.

- Accuracy – measures the bias in a measurement system. Accuracy can be undermined by such factors as field contamination of samples, poor preservation of samples, poor sample preparation techniques and poor selection of analytical techniques by the analysing laboratory. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes, laboratory blanks and analyses against reference standards. The nominal “acceptance limits” on laboratory control samples are defined as follows:
  - Laboratory spikes – 60-130% recovery for metals/inorganics and 60-140% for organics
  - Laboratory duplicates – Nominal RPD values of 30% or lower. Higher RPD values are generally considered acceptable when the result is close to the PQL
  - Laboratory Surrogates (Organics only) – 60%-130% recovery
  - Laboratory blanks – <PQL.

### **3.8 Step 7: Optimise the design for obtaining data**

This step involves identifying the most resource effective sampling and analysis design which is required to satisfy the DQOs. The sampling and analysis plan developed to meet this objective is detailed in section 5. The investigation has been conducted by experienced GHD field scientists, with previous experience in the assessment of contaminated sites.

To maintain the integrity and reliability of data the following measures were adopted throughout the course of the investigation:

- Use of relevant guidelines
- Identification to the extent possible of contamination sources from existing information and investigations conducted by others
- Use of robust field and laboratory quality assurance/quality control protocols
- Use of appropriate laboratory limits of reporting.

# 4. Basis for assessment

## 4.1 Relevant guidelines

The framework for the investigation was developed in accordance with guidelines made or approved, by the NSW EPA under Section 105 of the *Contaminated Land Management Act, 1997*. These guidelines include, but are not limited to the following:

- National Environmental Protection Council, *National Environment Protection (Assessment of Site Contamination) Measure (NEPM)*, 2013
- NSW EPA, *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land*, 2020
- NSW EPA, *Waste Classification Guidelines, Part 1: Classifying Waste*, 2014
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, August 2018)
- Australian Water Quality Guidelines for Fresh and Marine Waters, Volume 3, primary Industries (ANZECC, October 2000)
- NHMRC (2011). Australian Drinking Water Guidelines Paper 6 National Water Quality Management Strategy, updated May 2019.

The assessment has also been considerate of the following additional relevant guidance:

- The Heads of EPAs Australia and New Zealand (HEPA), PFAS National Environmental Management Plan (NEMP), January 2018
- Australian Standard 4482.1/1997, Guide to the sampling and investigation of potentially contaminated soils, 1997.

## 4.2 Contamination assessment criteria

### 4.2.1 Assessment criteria – soil and sediments

Soil and sediment investigation levels have been adopted from assessment criteria presented in NEPM (2013) as discussed below. For assessment of PFAS in soil, the NEMP (2018) will be adopted.

Given the objectives of the investigation is to assess the potential human health risk to construction and future maintenance workers of Burdekin Road to Townson Road upgrade, health screening levels (HSL) and health investigation levels (HIL) for commercial/industrial have been selected as the investigation screening criteria as discussed below.

#### *Health screening levels (HSL) for petroleum hydrocarbons*

The NEPM (2013) presents health screening levels (HSLs) for fuel derived petroleum hydrocarbons, which are generic criteria based on a series of reasonably conservative assumptions in order to be protective of human health for a variety of land use types. For the purposes of selecting health based investigation levels for this study area, industrial/commercial land uses have been adopted.

#### *Health investigation levels (HILs) for other contaminants*

For non-petroleum hydrocarbons, the NEPM 2013 HILs have been adopted for commercial industrial purposes. The HILs take into account direct contact pathways, including incidental ingestion and dermal contact.

### ***Ecological investigation levels (EILs) and ecological screening levels (ESLs)***

The NEPM (2013) includes ecological investigation levels (EIL) for heavy metals and naphthalene and ecological screening levels (ESL) for petroleum hydrocarbons. The applicability of ecological screening levels (ESLs) and ecological investigation levels (EILs) to the study area were evaluated. Given that large scale earthworks will occur during the construction of the Burdekin Road to Townson Road upgrade within the study area, including cut and fill, which will disturb most of the current terrestrial ecosystems of the study area. In addition, the completed Burdekin Road to Townson Road upgrade will be paved, limiting sensitive receptors within the study area. Therefore, EILs and ESLs are not included in the current assessment.

### ***Management limits***

The NEPM (2013) includes “management limits” for total petroleum hydrocarbons (TPH). Management limits are applied after consideration of relevant HSLs. Where TPH concentrations are less than the adopted HSL, consideration will be given to management limits for commercial/industrial land use. Management limits for coarse soil have been assumed for this investigation.

### ***Asbestos screening criteria***

Selected soil samples were screened for asbestos using a presence/absence protocol in laboratories. This analytical method does not allow quantification of asbestos concentrations in soil for comparison against the HSL criteria in NEPM (2013). Therefore, the criterion adopted in this DSI is based on positive or negative identification of asbestos in collected soil samples.

### ***PFAS screening criteria***

For assessment of PFAS in soil, human health screening values for industrial/commercial land outlined in the PFAs NEMP (2018) will be adopted for screening PFAS results.

It is noted for the assessment of PFAs in sediments the information available to date does not suggest that humans are likely to come into frequent direct contact with sediments and therefore the absence of screening levels appropriate to the evaluation of this scenario data is not a substantial data gap for this assessment.

## **4.2.2 Assessment criteria – groundwater and surface water**

The closest receiving water body in the study area is Bells Creek in the western portion of the study area and Eastern Creek in the eastern portion of the study area.

Both of these water bodies intersect the study area. It is expected that these creeks flow to the north, and eventually drain into the Hawkesbury River, approximately 13 kilometres north.

The assessment criteria nominated for this assessment is the Australian and New Zealand Australian and New Zealand Environment and Conservation Council Guidelines for Water Quality (ANZECC, 2000) criteria for the 95% protection of freshwater aquatic species<sup>1</sup>.

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<sup>1</sup> The ANZAST (2018) criteria were endorsed by NSW EPA under S105 of the CLM Act on 4 September 2018. At the same time the ANZECC (2000) water quality guidelines were revoked. While the ANZAST (2018) have been endorsed, preliminary review of these guidelines by GHD and others has identified a number of discrepancies with ANZECC (2000) which have yet to be clarified. As such, ANZECC (2000) criteria have still been adopted for the purposes of this report until the issues with ANZAST (2018) have been resolved.



While there are no known potable water abstractions identified in the study area, and town water is supplied to both the study area and surrounding areas, the ADWG (NHMRC, 2011) recreational criteria has been selected to assess the potential health risk in relation to direct contact with surface water during the construction phase. It is a conservative approach, given that surface water bodies with the study area are not used for recreational purpose.

The HSLs for petroleum hydrocarbons for commercial/industrial land use have also been adopted for the groundwater assessment to characterise the risk posed to receptors by potential hydrocarbon vapour intrusion.

For assessment of PFAS in groundwater and surface water, the PFAS NEMP (2018) criteria for 95% protection of freshwater ecosystems will be adopted for screening PFAS results.

PFAS will be further assessed against the NEPM 2018 Recreational Water guidelines as a conservative approach, given the background of potential PFAS contamination in the study area, for the protection of construction workers that may come in contact with PFAS contaminated water.

It is noted surface water from the study area is not considered to be used for recreational purposes, however this guideline has been adopted as a conservative approach to determine if there is any risk to construction workers that may come in contact with surface water.

### **4.3 Waste classification**

For waste classification purposes, the concentrations the chemicals in samples analysed will be compared to the criteria outlined in Table 2 of the NSW EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste*. These guidelines provide criteria provides waste classification for material requiring offsite disposal. The classification process for non-liquid wastes (ie soil) focuses on the potential for waste to release chemical contaminants into the environment through contact with liquids (leachates).

The first test used to chemically assess waste is the Contaminant Threshold (CT) test, which determines the total concentration of each contaminant in the waste sample. The guidelines set different maximum levels for the total concentration of each contaminant in order for waste to be classified as either general solid waste, restricted solid waste or hazardous waste.

The toxicity characteristics leaching procedure (TCLP) test estimates the potential for waste to release chemical contaminants into a leaching liquid. The guidelines set different maximum levels of the leachable concentration of each contaminant in order for waste to be classified as general solid waste, restricted solid waste or hazardous waste.

For samples analysed for PFAS, the concentrations of PFAS will be also compared to the criteria outlined in Table 2 of the NSW EPA (2016) *Addendum to the Waste Classification Guidelines (2014) – Part 1: classifying waste*.

# 5. Sampling and analytical methodology

## 5.1 Methodology

Table 5-1 provide details of investigation methodologies adopted for this DSI. As discussed in section 1.1, TfNSW was responsible for the borehole drilling, well installation and test pit excavation.

**Table 5-1 Investigation methodologies**

Activities	Method
Test pitting	<p>Twenty two test pits were excavated by a track-mounted excavator on 5, 6, 19, 21, 22 and 27 August 2019. Test pitting was carried out by TfNSW as part of the <i>Townson Road to Burdekin Road Concept Design Stage Geotechnical Factual Report, Ref. G5313/1, October 2019</i>.</p> <p>A GHD environmental scientist collected soil samples from spoil brought to the surface by the excavator bucket. Soil samples were generally collected at surface, 0.5 m, every one metre thereafter, and half meters into natural soil. GHD scientist was not present all time during the test pit excavation.</p>
Borehole drilling	<p>Eleven boreholes were drilled by a track-mounted drilling rig on 4, 6, 7, 9, 19, 21, 22, 23 August 2019. Drilling was carried out by TfNSW (October 2019).</p> <p>Soil samples were collected by a GHD environmental scientist from solid stem augering sections generally at surface, 0.5 m, 1.0 m then every metre thereafter half metres into natural soil. GHD scientist was not present all time during the borehole drilling.</p>
Installation of groundwater wells	<p>Six drilled boreholes were converted to monitoring wells.</p> <p>Four groundwater wells (BH06, BH08, BH09 and BH12) were drilled until an obvious groundwater bearing zone was encountered by TfNSW in October 2019. Two groundwater wells (BH114 and BH102) were drilled and installed by GHD in January 2020 and May 2020 respectively. Well construction involved:</p> <ul style="list-style-type: none"> <li>• Class 18 PVC slotted well screen and casing, with screening interval set partially beneath water table (where encountered)</li> <li>• Graded sand backfill in the bore annulus to approximately 0.5 m above the screen interval</li> <li>• Minimum 0.5 m thick bentonite seal around the bore annulus, above the graded sand backfill</li> <li>• The bore annulus above the bentonite seal were backfilled with soil cuttings.</li> </ul> <p>After installation, monitoring wells were purged using a submersible pump. Geotechnical engineers from TfNSW supervised the installation of groundwater monitoring wells (BH06, BH08, BH09 and BH12). GHD provided guidance on the construction of the groundwater monitoring wells.</p> <p>Installation of BH102 and BH114 was undertaken by an experienced geotechnical engineer from GHD.</p>

Activities	Method
Logging of subsurface conditions and well construction details	<p>The soil profile was described in general accordance with the Unified Soil Classification System (USCS) by TfNSW geotechnical engineers, with features such as seepage, discolouration, staining, odours and other indications of contamination noted in test pits and borehole logs, as well as soil sampling information. Test pit, borehole and monitoring well construction logs are provided in Appendix B, as presented on TfNSW <i>Townson Road to Burdekin Road Concept Design Stage, Geotechnical Factual Report, No. G5313/1, October 2019</i>.</p> <p>Borehole logs and monitoring well construction logs are two monitoring wells installed by GHD are included in Appendix C. GHD field notes are also included in Appendix D.</p>

## 5.2 Sampling and analytical program

### 5.2.1 Investigation locations and sampling density

The investigation sampling locations are presented in Figures 2 to 12, Appendix A. The soil sampling locations were selected for geotechnical investigation purposes, however GHD considered these provided good coverage of the study area. The study area covers a linear length of 3.6 kilometres and soil samples were collected for 11 boreholes, 22 test pit and 10 pavement core locations during this investigation. As such, one sampling location for approximately 100 metres linear length of the road corridor was achieved for the DSI.

Investigation locations that targeted the areas of potential concern, as identified in the PSI, are presented on Figure 2, Appendix A, and are further discussed in Table 5-2.

**Table 5-2 Areas of potential concern and geotechnical investigation locations**

Areas of potential concern as nominated in the PSI (GHD, 2019)	Investigation locations (soil/ groundwater)	Comments (any data gap)	Area of concern as presented on Figure 2 on Appendix A
Potential for hydrocarbons, metals and asbestos impacts from unknown fill material identified at the Dam wall constructed at 55 Townson Road.	<p>Soil: TP03, TP04, PC03.</p> <p>Groundwater: No locations.</p>	<p>Sampling was undertaken in proximity of the dam wall but not from the actual fill at this location, as such this is considered a data gap. The site boundary for Stage 1 has been further delineated as presented in Figure 1 and the dam at 55 Townson Road is no longer located within the site boundary.</p> <p>Groundwater not investigated and considered a data gap.</p>	5

Areas of potential concern as nominated in the PSI (GHD, 2019)	Investigation locations (soil/ groundwater)	Comments (any data gap)	Area of concern as presented on Figure 2 on Appendix A
Asbestos containing materials (ACM) at 25 Jersey Road residential property.	Soil: TP17 and TP18	Sampling locations were excavated in proximity of the residential property, but no investigation has been undertaken of this property.  This area of potential concern was not investigated and considered as a data gap.	7
Potential hydrocarbon impact of soil and groundwater related to long term quarrying activities at PGH Bricks and Paver quarry at 75 Townson Road, Schofields.  Potential for hydrocarbons, metals and asbestos impacts related to three stockpiles of fill observed south of PGH Bricks and Paver quarry.	Soil: PC04, BH03, BH13, TP07, TP08, TP09, TP10, PC05, PC06.  Groundwater: No locations.	Sampling was undertaken in proximity of the three stockpiles of fill south of PGH Bricks, but no sampling undertaken from the stockpiles, as such this is considered a data gap. Further assessment should be undertaken prior to construction works.  Groundwater not investigated and considered a data gap.	3, 9, 10, 11
Potential per - and poly-fluoroalkyl substances (PFAS) and hydrocarbon impacts in soil, groundwater and surface water associated with historic defence activities at HMAS Nirimba.	Soil: BH04, BH06, BH07, BH08, BH09, BH10, BH11, BH12, TP20, TP21, TP22, TP23, TP24, TP25, PC07, PC08, PC09.  Groundwater: BH06, BH08, BH09 and BH12.  Surface water: SW04  Sediment: SED04	Investigation locations considered sufficient for PFAS investigation and hydrocarbon impact in soil and groundwater associated with historic defence activities at HMAS Nirimba.  In addition, GHD collected one surface water and one sediment sample from Eastern Creek.	1

Areas of potential concern as nominated in the PSI (GHD, 2019)	Investigation locations (soil/ groundwater)	Comments (any data gap)	Area of concern as presented on Figure 2 on Appendix A
Potential hydrocarbon, metals, pesticide and asbestos impacts from historic rail activities.	Soil: BH9, BH10, BH11, BH12, PC07. Groundwater: BH09 and BH12.	Soil investigation locations considered sufficient for investigation of hydrocarbons, metals, pesticide and asbestos. Groundwater investigations are considered sufficient to assess potential contamination from Blacktown-Richmond railway corridor.	2
Potential pesticide and herbicide contamination of soil and surface water at Bravo Nursery at 9 Townson Road, Marsden Park.	Groundwater: BH102 and BH114 Soil: BH02 and TP01.	Groundwater sampling considered sufficient for the investigation of hydrocarbons, heavy metals and PFAS. Soil sampling locations were excavated in proximity of Bravo Nursery, but no investigation was undertaken within this property. If this property is to be disturbed during construction works, further sampling shall be undertaken.	4
Potential hydrocarbon impacts of soil and groundwater associated with heavy machinery and truck storage yards observed at 6 and 9 Townson Road. Potential hydrocarbon and heavy metals impacts from surrounding service stations on Richmond Road.	Soil: PC01, BH02, TP01, TP02, PC02. Surface water: SW01 Sediments: SE01 Groundwater: BH102 and BH114.	Soil, surface water and sediment investigation locations are considered sufficient for the investigation of hydrocarbons and heavy metals. Groundwater sampling considered sufficient for the investigation of hydrocarbons and heavy metals.	6, 12,13,14

Areas of potential concern as nominated in the PSI (GHD, 2019)	Investigation locations (soil/ groundwater)	Comments (any data gap)	Area of concern as presented on Figure 2 on Appendix A
Potential for hydrocarbons, metals and asbestos impacts related to stockpile yard east of Richmond Road.	Soil: PC01, BH02, Groundwater: BH102, BH114.	Groundwater sampling considered sufficient for the investigation of hydrocarbons and heavy metals.  Sampling locations were excavated in proximity of the stockpile yard but no investigation was undertaken within this property. Further assessment should be undertaken prior to construction works.	8

GHD consider the sampling density for soil investigation was appropriate based on review of existing contamination information and the investigation objectives. This is further discussed in Table 5-3.

**Table 5-3 Summary of groundwater, surface water and sediment sampling locations**

Locations	Media	Purpose
BH102 (near the proposed Bells Creek Bridge)	Groundwater	Potential groundwater impacts associated with Bravo nursery, Richmond Road stockpile yard, and surrounding service stations on Richmond Road.  It is understood that surface levels will be raised for the construction of the road and groundwater is only likely to be encountered for pile installation of Floodplain Bridge and Bells Creek Bridge, as such these locations are considered sufficient for the purpose of this investigation.
BH114 (near the proposed floodplain bridge)	Groundwater	
BH06	Groundwater	Potential groundwater impacts associated with historic defence activities at RAAF Station Schofields/HMAS Nirimba.
BH08	Groundwater	
BH09	Groundwater	
BH12	Groundwater	
SW1	Surface water	Surface water collected from Bells Creek. Sampling location considered representative of surface water quality of Eastern Creek within the study area. The sampling location was also considered appropriate from a safety perspective.
SW2	Surface water	Surface water collected from Eastern Creek. Sampling location considered representative of surface water quality of Bells Creek within the study area. The sampling location was also considered appropriate from a safety perspective.

Locations	Media	Purpose
SED1	Sediment	Sediment collected from Bells Creek. Sampling location considered representative of sediment quality of Eastern Creek within the study area. The sampling location was also considered appropriate from a safety perspective.
SED2	Sediment	Sediments collected from Eastern Creek. Sampling location considered representative of sediment quality of Bells Creek within the study area. The sampling location was also considered appropriate from a safety perspective.

### 5.2.2 Soil sampling

Soil samples were collected using the following methodology:

- Sample jars were filled to minimise headspace. The containers were labelled with the project identification number, sample identification, date collected and sampler's initials.
- Samples for PFAS analysis were placed into PFAS free sample jars provided by laboratory.
- Following the collection of each sample, the jars were placed immediately into ice filled coolers for preservation prior to and during transportation to the project laboratory.
- Samples were accompanied with chain of custody documentation to the project laboratory and were submitted within holding times appropriate to the analysis required.
- Decontamination procedures were used during the soil sampling including the use of new disposable gloves for the collection of each sample, decontamination of sampling equipment between each sampling location (using phosphorus free and PFAS free detergent) and the use of dedicated sampling containers provided by the laboratory.
- Following soil sampling, the test pit excavations were reinstated with excavated soil and nominally compacted using the excavator.
- Following soil sampling, drilling spoil was spread on ground surface if no visual/olfactory evidence of contamination is encountered during drilling. The drilling spoil was to be placed in soil drums to be disposed of off-site if visual/olfactory evidence of contamination was observed during drilling.
- Locations were surveyed by a registered surveyor.

### 5.2.3 Sediment sampling

A hand auger was used to collect two undisturbed sediment samples (SED01 and SED04) collected from Bells Creek and Eastern Creek respectively within the study area. Sediment samples were collected from the surface to a maximum depth of 0.1 mbsg.

The depth of the water column and a description of the sediment was measured and recorded, and is provided in Appendix C.

### 5.2.4 Groundwater sampling

Groundwater monitoring was conducted on 29 January 2019 at four monitoring wells (BH06, BH08, BH09 and BH12) and on 25 May 2020 at two monitoring wells (BH114 and BH102) respectively.

The sampling was conducted using the follow method:

- Prior to gauging the standing water level (SWL) in each monitoring well was recorded. The well was allowed to stand for a few minutes to allow SWL to stabilise under atmospheric conditions.
- The depth of the SWL and non-aqueous phase liquids NAPL (if present) was measured at each monitoring well using an electronic interface meter, along with total well depth with all measurements recorded from top of casing.
- Representative groundwater samples were collected using the following technique:
  - Each groundwater monitoring well was purged using the low-flow sampling techniques with dedicated tubing. The depth of placement of the groundwater sample inlet tube or pump was recorded during sampling and was consistent across monitoring locations.
  - Field parameters (pH, electrical conductivity (EC), oxygen redox potential, dissolved oxygen and temperature) were measured using a calibrated water quality meter (WQM) and recorded during purging to ensure that the extracted groundwater was representative of the surrounding groundwater conditions. When field parameters reach equilibrium, ie consecutive measurements are within 10% of each other for EC, redox and pH, groundwater was deemed to be representative and groundwater samples were collected.
  - Visual observations were recorded, in particular, the absence or presence of a hydrocarbon sheen or odour during purging.
  - Groundwater samples were immediately placed into laboratory prepared bottles suitable for the requested analyses.
  - Sample bottles were filled directly from the pump with a minimal amount of air contact and vials for volatile organic analysis were filled with no headspace. Samples analysed for dissolved metals were field filtered with a dedicated 0.45 µm filter prior to placing the sample into the sample bottle.
  - The containers were labelled with the project identification number, sample identification, date collected and the sampler's initials.
  - Following the collection of each sample, the bottles were placed immediately into ice-filled coolers for preservation prior to and during transportation to the project laboratory.
  - Samples were accompanied with chain of custody documentation to the project laboratory and were submitted within holding times appropriate to the analysis required.
  - Dedicated sampling equipment (ie tubing, bailers, filters etc) were disposed of after each well was sampled with other sampling equipment decontaminated using a mixture of phosphorus free detergent solution and potable water and then rinsed with potable tap water between each well location.

### **5.2.5 Surface water sampling**

Surface water samples were collected on 29 January 2020 from two locations (SW01 and SW04) from Bells Creek and Eastern Creek respectively. Samples were collected by grab sample method using open-top container attached to an extension rod.

Visual observations were recorded, in particular, the absence or presence of a hydrocarbon sheen or odour during purging.

Surface water samples were immediately placed into laboratory prepared bottles suitable for the requested analyses.



Sample bottles were filled directly from the pump with a minimal amount of air contact and vials for volatile organic analysis were filled with no headspace. Samples analysed for dissolved metals were field filtered with a dedicated 0.45 µm filter prior to placing the sample into the sample bottle.

The containers were labelled with the project identification number, sample identification, date collected and the sampler's initials.

Following the collection of each sample, the bottles were placed immediately into ice-filled coolers for preservation prior to and during transportation to the project laboratory.

Samples were accompanied with chain of custody documentation to the project laboratory and were submitted within holding times appropriate to the analysis required.

### 5.3 Analytical schedule

The analytical schedule for sampling is presented in Table 5-4.

**Table 5-4 Analytical schedule**

Sampling Media	Analytical schedule
Soil	Soil samples from each test pit/borehole/pavement core were submitted for laboratory analysis of CoPC including asbestos, heavy metals, TRH, BTEX, PAH, phenols, OCP and PCB. Analytical schedule is presented in Table 5-5.  In addition, one soil sample from each borehole location, six samples from pavement core locations and four from test pit locations were analysed for toxicity characteristic leaching procedure (TCLP) extraction for selected heavy metals.
Sediments	Three sediment samples were submitted for laboratory analysis of COPC including heavy metals, BTEX, TRHs, PAH, OCPs, OPPs and PCBs and PFAS.  Analytical schedule for sediment samples is presented in Table 5-6.
Groundwater	Six groundwater samples were submitted for laboratory analysis of COPC including heavy metals, BTEX, TRHs, PAHs and PFAS.  Analytical schedule for groundwater samples is presented in Table 5-7.
Surface water	Two surface water samples were submitted for laboratory analysis of COPC including heavy metals, BTEX, TRHs, PAHs, OCPs, OPPs, PCBs and PFAS.  Analytical schedule for surface water samples is presented in Table 5-7.

**Table 5-5 Soil analytical schedule**

Location ID	Number of locations	Number of samples submitted for analysis				
		Asbestos	Metals, TRH, PAH, BTEX	Phenols	OCP, OPP	PFAS
BH2, BH3, BH4, BH6 to BH13	12	16	25	12	9	13
TP01 to TP04, TP07 to TP10, TP12 to TP25	22	29	47	21	22	11
PC01 to PC10	10	11	24	10	7	0
Total	44	56	96	43	38	24

**Table 5-6 Sediments analytical schedule**

Location ID	Locations	Metals, TRH, PAH, BTEX	OCP, OPP	PCBs	PFAS
SED01 and SED04	2	2	2	2	1

**Table 5-7 Groundwater and surface water analytical schedule**

Location ID	Locations	Metals, TRH, PAH, BTEX	OCP, OPP	PCBs	PFAS
Groundwater: BH102, BH114, BH6, BH8, BH9, BH12	6	6	-	-	4
Surface water: SW01 and SW04	2	2	2	2	1

## 6. Quality assurance and quality control

### 6.1 QA/QC program

As discussed in section 3, this investigation was undertaken in accordance with QA/QC procedures to measure the reliability of collected data for the purposes of characterising study area conditions. Information in relation to the completion of QA/QC procedures in this investigation is provided in the following sections.

#### 6.1.1 Field QA/QC

The field investigation was conducted in general accordance with GHD's standard field operating procedures. Key requirements of these procedures included:

- Appropriately trained and experienced staff documented study area activities using notes on standard field forms such as daily and sampling logs.
- Decontamination procedures including the use of new disposable gloves for the collection of each sample, decontamination of the sampling equipment between each sampling location and the use of dedicated sampling containers.
- Soil logging procedures – all samples were described using the Unified Soil Classification System: Field Procedure.
- Calibration procedures – all field monitoring equipment were calibrated in accordance with manufacturer's instruction and documentary evidence was filed for record. Field equipment calibration records are presented on Appendix E.
- Sample identification procedures – collected samples were immediately transferred to sample containers of appropriate composition and preservation for the required laboratory analysis. All sample containers were clearly labelled with a sample number, sample location, sample depth, sample date and sampler's initials. The sample containers were transferred to ice-chilled boxes for sample preservation prior to and during shipment to the testing laboratories.
- Chain of custody information requirements – Chain-of-custody forms were completed and forwarded to the relevant testing laboratories for the collected samples as required.
- GHD field quality control procedures used during this investigation included the collection and analysis of intra-laboratory duplicates, rinsate blanks, trip spikes and trip blanks.
- An intra-laboratory duplicate is a single sample divided into two separate sampling containers and sent to the same laboratory. These samples provided a check on the analytical performance of the primary laboratory.
- Duplicates were assessed by calculating the Relative Percentage Difference (RPD) between the primary and duplicate samples.
- Rinsate samples were taken from decontaminated re-usable sampling equipment and analysed. Rinsate samples were analysed at a frequency of one sample per day.
- Trip blanks were laboratory prepared samples, certified free from targeted analytes being tested, and were stored and transported along with primary samples collected from the study area until analysed to check if cross contamination had occurred during the storage and transportation process. Trip blanks were analysed at a frequency of approximately one per sample batch sent to the testing laboratory.

- Trip spikes are laboratory prepared samples spiked with known concentrations of volatile analytes. Trip spikes were stored and transported along with primary samples collected from the study area until analysed for the spiked analytes upon return to the laboratory testing laboratory. Recovered spike concentrations were calculated as a percentage of the original concentrations to measure if loss of volatile in samples has occurred during the sample storage and transportation process.
- The results of field QA/QC samples are discussed in section 6.2.1.

### **6.1.2 Laboratory program**

The primary laboratory used during the investigation was Eurofins (NATA accreditation number 1261) and the secondary laboratory was ALS (NATA accreditation number 825). These laboratories adopted their internal procedures and NATA accredited method in accordance with their quality assurance systems.

Laboratory quality control procedures used during the project included:

- **Laboratory duplicate samples:** The laboratory collects duplicate sub samples from one sample submitted for analytical testing at a rate equivalent to one in 20 samples per analytical batch, or one sample per batch if less than 20 samples are analysed in a batch. A laboratory duplicate provides data on the precision and reproducibility of the test result.
- **Spiked samples:** An authentic field sample is 'spiked' by adding an aliquot of known concentration of the target analyte(s) prior to sample extraction and analysis. A spike documents the effect of the sample matrix on the extraction and analytical techniques. Spiked samples are analysed for each batch where samples are analysed for organic chemicals of concern.
- **Certified reference standards:** A reference standard of known (certified) concentration is analysed along with a batch of samples. The Certified Reference Standard or Laboratory Control Spike provides an indication of the analytical accuracy and the precision of the test method and is used for inorganic analyses.
- **Surrogate standard/spikes:** These are organic compounds which are similar to the analyte of interest in terms of chemical composition, extractability, and chromatographic conditions (retention time), but which are not normally found in environmental samples. These surrogate compounds are 'spiked' into blanks, standards and samples submitted for organic analyses by gas-chromatographic techniques prior to sample extraction. Surrogate samples provide a means of checking that no gross errors have occurred during any stage of the test method leading to significant analyte loss.
- **Method blank:** Usually an organic or aqueous solution that is as free as possible of analytes of interest to which is added all the reagents, in the same volume, as used in the preparation and subsequent analysis of the samples. The reagent blank is carried through the complete sample preparation procedure and contains the same reagent concentrations in the final solution as in the sample solution used for analysis. The reagent blank is used to correct for possible contamination resulting from the preparation or processing of the sample.
- **Laboratory duplicate samples should return RPDs within the NEPM acceptance criteria of 30%. Per cent recovery is used to assess spiked samples and surrogate standards. Per cent recovery; although dependent on the type of analyte tested, concentrations of analytes and sample matrix; should normally range from about 70-130%. Method (laboratory) blanks should return analyte concentrations as 'not detected'.**

The laboratory conducted an assessment of its laboratory QA/QC program internally; however, the results were also independently reviewed and assessed by GHD.

## 6.2 QA/QC assessment results

### 6.2.1 Field QA/QC results

#### *Duplicate samples*

A total of 11 soil, one sediment, two groundwater and one surface water laboratory duplicate samples were collected during this investigation as presented on Table 6-1.

**Table 6-1 Quality control samples summary**

Matrix	QA/QC sample type	Duplicate Sample	Parent Sample	Date collected
Soil	Intra-laboratory duplicate	DUP_011	TP01_0.1-0.2	27 August 2019
Soil	Intra-laboratory duplicate	QC01	TP03_0-0.1	05 August 2019
Soil	Intra-laboratory duplicate	QC02	TP09_0-0.1	06 August 2019
Soil	Intra-laboratory duplicate	QC04	BH02_1.2-1.3	07 August 2019
Soil	Inter-laboratory duplicate	QC05	BH04_0.4-0.5	09 August 2019
Pavement core	Intra-laboratory duplicate	QC07	PC09_0.5-0.6	15 August 2019
Soil	Inter-laboratory duplicate	QC09	TP17_0.0-0.1	19 August 2019
Soil	Intra-laboratory duplicate	QC11	BH06_0.0-0.2	23 August 2019
Soil	Intra-laboratory duplicate	FD03_200819	TP21_0-0.1	20 August 2019
Soil	Intra-laboratory duplicate	FD02_200819	TP23_1.45-1.5	20 August 2019
Soil	Intra-laboratory duplicate	FD01_190827	BH11_0.0-0.2	27 August 2019
Sediment	Intra-laboratory duplicate	SED01	QC02	29 November 2020
Groundwater	Intra-laboratory duplicate	QC01	BH12	29 January 2020
Groundwater	Intra-laboratory duplicate	QC101	BH102	25 May 2020
Surface Water	Inter-laboratory duplicate	QC03	SW04	29 January 2020

Duplicate samples collected during this DSI were analysed by Eurofins with the exception of QC03 analysed by ALS (inter-laboratory duplicate).

The analytical results of these samples, as well as the RPD calculated between the primary and duplicate samples, are summarised in Tables F7 and F8 in Appendix F.

### ***Soil calculated RPDs***

Most RPDs calculated were within the acceptable range, with exception of:

- BH02\_1.2-1.3 and QC04: Copper (55%), F3 (>C16-C34 Fraction) (58C29-C36 Fraction (52%) Nickel (59%)
- TP21\_0-0.1 and FD03\_200819: Nickel (102%)
- TP03\_0-0.1 and QC01: Copper (35%), C10-C14 Fraction (81%), C15-C28 Fraction (40%)
- TP9\_0-0.1 and QC02: (Chromium III+VI) (34%)
- TP23\_1.45-1.5 and FD02 Chromium (III+VI) (33%)
- BH06\_0.0-0.2 and QC11 Arsenic (73%), Chromium (III+VI) (65%).

The elevated RPDs are considered largely attributable to the heterogeneity of fill material encountered, considering the range of concentrations reported for the entire dataset. Overall, GHD notes calculated RPDs between soil primary and duplicate samples are mostly within the acceptance criteria, and the exceeding RPD comprise only 2% of all RPDs calculated between primary and duplicate samples in this project. In addition, the concentrations of specific analytes for which RPD exceedances were reported, were generally low and as such, a relatively small change in concentration between primary and duplicate samples gives rise to a large RPD value. Overall, GHD notes that the variation between the primary and duplicate pairs was not sufficiently large to alter the conclusions of the investigation.

### ***Sediment calculated RPDs***

RPDs calculated between sediment pairs are within the nominated QC criteria, with exception of:

- SED01 and QC2 for zinc (37%), copper (38%), C29-C36 fraction (54%).

The elevated RPDs of zinc are possibly attributable to a number of factors, such as the ubiquity of zinc in the environment and variation in the amount of fine sediment particles during subsampling. In view of the RPDs of other metal analytes comply with the nominated QA/QC criteria, this isolated instance of elevated RPD is not considered materially affecting the assessment outcome. For TRHs it is attributable the low levels of concentrations reported, as reported below the PQLs, as such they are not considered materially affecting the assessment outcome.

### ***Groundwater calculated RPDs***

RPDs calculated between BH12 and QC01 were within the nominated QA/QC criteria for most analytes with the exception of copper (173%), Nickel (133%) and zinc (149%).

RPD calculated between BH02 and QC101 analysed for PAHs were all within the acceptance criteria.

The elevated RPDs are considered attributable to low levels of concentrations reported as these analytes were below the PQLs for the duplicate QC01 sample.

### ***Surface water calculated RPDs***

RPDs calculated between SW04 and QC03 were within the nominated QA/QC criteria for all analytes.

### ***Rinsate samples***

Twelve rinsate samples were collected as part of this investigation and are presented in Tables F10, Appendix F. Nine of the rinsate samples were collected during the soil investigation from 5 August 2019 to 26 August 2019, and three of the rinsate samples were collected as part of the groundwater and surface water investigation on 29 January 2020.

Analytical results for rinsate samples were reported below the laboratory LORs and therefore within the nominated QC criteria with the exception of RB\_210819 (zinc at 0.006 mg/L) collected on 21 August 2019. In light of the zinc results in soils reported well below the nominated assessment criteria, the detected zinc concentration in the rinsate sample is not considered to affect the assessment outcome.

### ***Trip blanks***

Two trip blanks were collected as part of the soil investigation and two trips blank as part of the groundwater and surface water investigation.

Results of the trip blank samples were reported below the laboratory LORs and therefore within the nominated QA/QC criteria as presented in Table F9 and F10, Appendix F.

### ***Trip spikes***

Three trip spike samples were collected during the investigation

- Sample identified as TRIP SPIKE was collected on 07 August 2019 during soil investigation (*Laboratory report reference 671060, Appendix G*)
- Sample identified as TRIP SPIKE was collected on 15 August 2019 during soil investigation (*Laboratory report reference 673140, Appendix G*)
- Sample identified as TRIP SPIKE was collected on 27 August 2019 during soil investigation (*Laboratory report reference 673957, Appendix G*)
- Sample identified as TRIP SPIKE was collected on 06 August 2019 during groundwater investigation (*Laboratory report reference 672730, Appendix G*)
- Sample identified as TRIP SPIKE was collected on 29 January 2020 during groundwater investigation (*Laboratory report reference 699019, Appendix G*)
- Sample identified as TRIP SPIKE was collected on 06 August 2019 during groundwater investigation (*Laboratory report reference 672730, Appendix G*)
- Sample identified as TRIP SPIKE was collected on 25 May 2020 during groundwater investigation (*Laboratory report reference 699019, Appendix G*).

The spike recoveries of these three samples ranged between 74% and 130%, and are considered within the nominated QA/QC criteria as presented in Tables F9 and F10, Appendix F.

## **6.2.2 Laboratory QA/QC results**

### ***Technical holding time***

Samples were extracted within the required technical holding time for chemical analysis as presented in the laboratory transcript, Appendix G.

### **Laboratory program**

The NATA certified laboratory utilised for this assessment (Eurofins MGT) undertook its own quality assurance and quality control procedure for sample analysis. GHD has reviewed the internal laboratory control data provided within the laboratory reports (refer to Appendix G). It is noted comments have been provided by the laboratory where a failure result was reported in laboratory QA/QC procedures.

Comments on failure results provided by the laboratory reports were in:

- Laboratory report Ref. 672730 for nickel (S19-Au32796)
- Laboratory report 673140 for zinc (S19-Au36024, S19-Au36303, S19-Au36039), chromium (S19-Au36039), lead (S19-Au36039 and S19-Au36303), arsenic (S19-Au36303) and nickel (S19-Au36303)
- Laboratory report 699019 for arsenic (M20-Ja30997), cadmium (M20-Ja30997), copper (M20-Ja30997), lead (M20-Ja30997) and nickel (M20-Ja30997)
- For these samples the laboratory reports stated the matrix spike recovery was outside of the recommended acceptance criteria indicating a sample matrix interference
- Laboratory report 673957 for chromium (S19-Au42795) and lead (S19-Au42795)
- Laboratory report 675299 for 4.4'-DDE (S19-Se14314)
- Laboratory report 721605 for lead filtered (S20-My36961).

For these samples the laboratory reports stated that the RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of each report.

Given the concentrations of primary samples and duplicate samples were both low and below the health assessment criteria, these exceedances are not considered having impact on the integrity of the results.

### **6.3 Summary of QA/QC assessment**

The results of the QA/QC program are considered to provide an acceptable degree of confidence in the analytical program completed. Overall, the analytical data set is considered valid and acceptable for characterising the contamination status at the study area.



# 7. Investigation results

## 7.1 Site description

An inspection of the study area by a GHD experienced scientist on 6 August 2019, as part of the previous PSI (GHD, 2020), made the following observations:

- At the time of inspection Burdekin Road was a sealed paved road, 500 metres to the north of the study area was Schofields Train Station. The North Shore & Western Line rail corridor was seen west Burdekin Road.
- HMAS Nirimba consisted of a housing estate development, construction work was ongoing. Jersey Road consisted of a narrow unmarked paved road surrounded to the north and south by rural properties. Most properties appeared to be hobby farms, with many having stables and paddocks for horses.
- Meadow Road consisted of a sealed road, it was bound to the north by PGH Bricks and Paver quarry and bushland to the south. Large stockpiles of soil are visible from the road.
- Townson Road consisted of a sealed road, surrounded predominantly by rural properties with Bravo Nursery located on the northern verge at the western end. There were three service stations on Richmond Road within 150 metres of the study area boundary (Caltex Marsden Park, 7-Eleven Marsden Park, BP Marsden Park).

## 7.2 Field observations– soil

Field investigation and sampling were conducted by TfNSW and GHD from 4 to 27 August 2019. A geotechnical factual report from TfNSW was provided to GHD.

Test pits, boreholes and pavement core locations investigated are presented on Figure 2 to Figure 12, Appendix A.

It is noted logging of subsurface conditions was undertaken by TfNSW and subsurface conditions provided in Table 14 extracted from borehole logs presented on the *Townson Road to Burdekin Road Concept Design Stage Geotechnical Factual Report, Ref. G5313/1, October 2019*, as presented in Appendix B. A summary of the subsurface conditions is provided in Table 7-1.

**Table 7-1 Summary of subsurface conditions**

Geological units	Depth interval (m)	Description
Borehole locations		
Asphalt	0.0 - 0.1	Road surface
Fill	0.0 - 2.05	<p>Sandy CLAY: brown, low plasticity, fine grained sand, trace fine gravel, iron stained.</p> <p>Silty CLAY: brown and red-brown, medium plasticity, with angular siltstone gravel, with fine to coarse grained sand, with some medium to high plasticity pockets.</p> <p>CLAY: brown, red-brown, orange-brown, medium to high plasticity, with fine to medium gravel.</p> <p>Gravelly SAND: brown, fine to medium grained sand, fine to medium, sandstone gravel.</p>

Geological units	Depth interval (m)	Description
Natural alluvium	0.25-5.0	Silty CLAY: dark brown, medium plasticity, trace fine gravel, with fine to medium grained sand, organic odour. Silty CLAY: yellow-brown and pale grey with some red-brown, medium to high plasticity. Clayey SILT: brown, yellow-brown and red-brown, medium plasticity, trace fine grained sand, with some medium to high plasticity pockets.
Residual soil	0.3-5.2	Silty CLAY: pale grey, red-brown and yellow-brown, medium to high plasticity, with fine grained sand.
Bedrock	1.3-20.4	Shale: grey, fresh, thinly laminated. Siltstone: pale grey and yellow-brown, weathered to medium plasticity silty clay.
<b>Pavement core locations</b>		
Road surface	0.0-0.44	Road surface
Fill	0.15-0.7	Silty gravelly CLAY: brown, medium plasticity, fine to coarse, angular to sub-rounded gravel, trace fine and coarse grained sand. Gravelly SAND: brown, fine to medium grained sand, fine to medium, sandstone gravel. Sandy silty CLAY: pale grey and cream, medium plasticity, with fine to coarse grained sand, with fine to medium, sub-rounded to sub-angular gravel.
Alluvium	0.1-1.2	Silty CLAY: brown, high plasticity, with fine to medium sub-angular gravel. Silty sandy GRAVEL: brown to dark brown, fine to coarse gravel, medium plasticity, with fine to coarse grained sand, with clay, (marginal increase in plasticity and gravel content).
Residual soil	0.25-1.5	Silty CLAY: pale brown, grey-brown, mottled red-brown and pale grey, high plasticity, with silt, trace fine grained sand.
Bedrock	1.25-1.5	Siltstone: pale grey, extremely weathered.
<b>Test pit locations</b>		
Fill	0.0-1.6	Silty SAND: dark brown and dark grey-brown, fine to coarse grained sand, low plasticity silt, fine to coarse, angular to sub-rounded gravel, trace of clayey sand pockets, glass and steel. Gravelly CLAY: brown, yellow-brown, medium plasticity, fine to medium angular to sub-angular gravel. Sandy SILT: brown, yellow-brown, low plasticity, fine grained sand, trace fine gravel.

Geological units	Depth interval (m)	Description
Alluvium	0.2-2.5	Sandy SILT: dark brown becoming grey-brown, medium plasticity, with fine to coarse, angular to sub-rounded gravel, with sand, with clay. Silty CLAY: pale grey, pale yellow-brown, medium to high plasticity. Clayey sandy gravel: dark red-brown with some yellow-brown and pale grey, fine to coarse gravel, sub-angular to angular, low plasticity, fine to coarse grained sand, medium plasticity clay.
Residual soil	0.2-2.4	Silty CLAY: red-brown, grey and pale grey, fine to medium, high plasticity silt, with fine to coarse grained sand, cemented pockets with gravel, some roots. CLAY: red, red-brown, pale yellow, grey, high plasticity, trace fine to medium ironstone gravel, with silt.
Bedrock	0.9-2.7	Siltstone: pale grey, red-brown and grey, remoulds to silty clay.

According to the TfNSW logs, groundwater inflow was only observed during drilling at BH02, registered at approximately 3 mbgl.

In general terms, the subsurface conditions encountered across the study area comprised fill overlying residual soil and bedrock.

Fill material was encountered at depths from 0 metres and 2 metres. The fill profile generally comprised sandy clay, silty clay and clay of medium to high plasticity. Alluvium was encountered underlying fill at depths from 0.2 metres to 2.5 metres and comprised primarily of silty clays with medium to high plasticity. Residual soils were observed below the alluvium from 0.2 metres to 5.2 metres bgl and composed of silty clay and clay of medium to high plasticity. Bedrock composed of shale and siltstone and was recorded from depths of 1.3 to 20.4 metres bgl, and were underlying residual soils.

### 7.2.1 Visual and olfactory indications of contamination

Soil samples were evaluated on a qualitative basis for odour and visual signs of contamination (eg hydrocarbon odours, oil staining, petrochemical filming, asbestos fragments, ash, and charcoal) by a GHD environmental scientist. The following observations were noted:

- Visual or olfactory evidence of hydrocarbon impacts were not noted at any sampling location investigated
- Foreign materials such as brick or plastic fragments were observed at various sampling locations as presented on Table 7-2
- Potential asbestos containing material (ACM) was not visually observed at any sampling location.

Table 7-2 provides a summary of the observed foreign materials at sampling locations.

**Table 7-2 Summary of visual and olfactory evidence of foreign material**

Sample location	Material found	Depth (m)
TP03	Plastic fragments	0.2-0.4
TP03	Trace of plastic and glass	0-0.1
TP09	Aluminium cans and plastic	0-0.1
TP10	Trace of glass, plastic, bricks	0.1-0.2
TP25	Fine charcoal pocket	0.9-1.0
TP24	Fine charcoal pocket	0.6-0.7
TP23	Geofabric observed	1.45-1.5
TP21	Plastic tape fragment	0.9-1.0
TP14	Plastic fragments	0-0.2

Soil samples collected were screened for potential VOC presence using a photoionization detector (PID). PID readings varied between 0.1 ppm and 6.8 ppm. The highest readings were recorded at TP19 in samples TP19\_0-0.2 (3.6 ppm), TP12\_0.4-0.5 (6.2 ppm) and TP23\_0.8-0.9 (6.8 ppm). PID readings were recorded in the field notes and are presented in Appendix C.

### 7.3 Field observations– groundwater

#### 7.3.1 Standing water levels

Table 7-3 summarises standing water level observations made during the sampling event on 29 January 2020 and the additional sampling event for BH102 and BH104 on 25 May 2020 prior to the purging of monitoring wells. Groundwater is generally assumed to flow towards Bells Creek or Eastern Creek. Groundwater wells construction details are presented in Appendix B and Appendix C.

**Table 7-3 Standing water levels**

MW ID	Standing water level (mBTOC) <sup>1</sup>	Surface elevation (mAHD)	Stick-up <sup>2</sup> (m)	TOC <sup>3</sup> elevation (mAHD)	Standing water level (mAHD)	Well base (m)
BH06	3.74	16.66	0.69	17.35	13.61	6
BH08	2.337	22.83	0.57	23.4	21.06	15.90
BH09	1.825	24.3	0.54	24.84	23.02	20.34
BH12	1.775	27.67	0	27.67	25.9	11.50
BH102	1.645	26.14	0	26.14	24.5	5.92
BH114	2.011	26.62	0.82	27.44	25.43	5.02

- Notes: 1. mBTOC = metres below top of well casing  
2. Stick-up = Distance between TOC and ground surface.  
3. TOC = top of well casing.

### 7.3.1 Groundwater quality parameters

Table 7-4 summarises the stabilised groundwater quality parameters recorded at the time of sampling, and observations made on purged water.

**Table 7-4 Groundwater quality parameters**

MW ID	Volume purged (L)	Temp (°C)	pH	Electrical Conductivity (µS/cm)	Dissolved Oxygen (ppm)	Redox <sup>1</sup> (mV)	Comment
BH06	6	20.3	7.09	11,506	1.75	185.5	Cloudy, brown/grey, no odour, no sheen, clear
BH08	5	22.6	6.83	11,389	1.94	130	Cloudy grey, turbid, no odour, no sheen, good recharge
BH09	6	22.4	6.69	12,458	2.18	51.5	Clear, hydrogen sulphide smell
BH12	7	21.7	6.51	15,205	1.71	118.2	Slightly cloudy, grey, hydrogen sulphide odour, no sheen
BH102	6	19.1	6.35	25,800	2.50	271	Clear, cloudy, no odour, no sheen
BH114	9	18.4	5.93	14,720	0.39	192.5	Red, cloudy, no odour, no sheen

Note: 1. Redox: Reduction and oxidation potential (+205 mV correction factor)

The groundwater field parameters indicated groundwater is under relative neutral, oxidising and high salinity conditions. The high salinity suggests groundwater is not suitable for beneficial use.

It should be noted groundwater levels are likely to fluctuate with variations in climatic and study area conditions.

### 7.4 Field observations– surface water

Prior to surface water sample collection, field parameters and observations were recorded and are summarised in Table 7-5. No hydrocarbon odour or staining was observed in the collected surface water samples.

**Table 7-5 Surface water quality field parameters (29 January 2020)**

Location ID	Date Sampled	DO <sup>1</sup> (mg/L)	EC <sup>2</sup> (µS/cm)	TDS (mg/L)	pH	Redox <sup>3</sup> (mV)	Temp (°C)	Observations/comments
SW01	29/01/2020	2.45	955	530	7.87	262.8	25.2	Clear/cloudy
SW04	29/01/2020	3.8	801	410	7.84	224.6	27.4	Clear/cloudy

- Notes: 1. DO: Dissolved oxygen  
2. EC: Electrical conductivity  
3. Redox: Reduction and oxidation potential (+205 mV correction factor)

## 7.5 Field observations– sediments

Two sediment samples were collected as part of this investigation. Sediment SED01 was described as sandy clay, brown, wet, low to medium plasticity. Sediment sample SED04 was described as silty clay, dark brown, very wet with organic matter. No hydrocarbon odour, staining or suspected ACM fragments were observed in the sediment samples.

## 7.6 Laboratory analytical results

### 7.6.1 Soil results

The soil investigation laboratory results are presented in Table F1, Appendix F and laboratory reports provided in Appendix G.

Concentrations of heavy metals, BTEX, TRH, PAHs, OCPs and OPPs in soil samples were below the adopted health screening criteria (HIL D/HSL D) and below the management limits for a commercial/industrial land use scenario.

PFAS concentrations were below the adopted health screening criteria for a commercial/industrial land use scenario.

Asbestos was not detected (as presence/absence) at any analysed soil samples and was not visually observed during intrusive sampling.

### 7.6.2 Sediment results

The sediment investigation laboratory results are presented in Table F2, Appendix F and laboratory reports provided in Appendix G.

Concentrations of heavy metals, BTEX, TRH, PAH, OPC, OPP and PCB in sediment samples were below the adopted health screening criteria for commercial/industrial land use.

PFAS concentrations in sediment samples were below the selected health screening criteria (NEMP 2018) for a commercial/industrial land use.

### 7.6.3 Groundwater results

The groundwater investigation laboratory results are presented in Table F3, Appendix F, and laboratory reports provided in Appendix G.

#### PAHs

Concentrations of PAHs were below the adopted screening criteria for freshwater ecosystems.

#### BTEX

BTEX concentrations in groundwater samples were below the adopted health screening criteria (via vapour intrusion) for a commercial/industrial scenario and for freshwater ecosystems.

### **TRHs**

TRHs concentrations in groundwater samples were below the adopted health screening criteria (via vapour intrusion) for a commercial/industrial scenario and for freshwater ecosystems.

### **Heavy metals**

Heavy metals analytical results were reported below the adopted screening criteria for freshwater aquatic ecosystems with the exception of copper and zinc.

- Copper exceeded the selected criteria for fresh waters (0.0014 mg/L) in samples: BH06 (0.021 mg/L), BH08 (0.018 mg/L), BH12(0.014 mg/L), BH102 (0.012 mg/L) and BH114 (0.01 mg/L)
- Zinc exceeded the selected criteria for freshwater aquatic ecosystems (0.005 mg/L) in samples BH06 (0.034 mg/L), BH08 (0.049 mg/L), BH09 (0.031 mg/L), BH12 (0.034 mg/L), BH102 (0.069 mg/L) and BH114 (0.046 mg/L)
- Nickel exceeded the selected criteria for freshwater aquatic ecosystems (0.011 mg/L) in sample BH102 (0.031 mg/L) and BH114 (0.025 mg/L)
- Cadmium exceeded the selected criteria for freshwater aquatic ecosystems in sample BH102 (0.0005 mg/L).

It is noted the toxicity and bioavailability of zinc, cadmium and nickel is influenced by water quality conditions such as hardness. ANZG (2018) provides hardness correction factors that can be applied to the trigger values, however this calculation has not been undertaken as part of this investigation as calcium carbonate (CaCO<sub>3</sub>) concentration was not available at the time of reporting.

### **PFAS**

PFAS concentrations were below the adopted NEMP 2018 freshwater criteria for all samples.

## **7.6.4 Surface water results**

The surface water results are presented in Table F4, Appendix F, and laboratory reports provided in Appendix G.

Surface water samples were analysed for heavy metals, BTEX, TRHs, PAHs, OCPs, OPPs, PCBs and assessed against the criteria for freshwater ecosystems and the ADWG (NHMRC, 2011) recreational criteria. Analytical results were reported below the selected criteria with the exception of the samples presented below:

### **Heavy metals**

Samples exceeding the nominated criteria for freshwater aquatic ecosystems were:

- Chromium (III+VI) exceeded the freshwater criteria of 0.0014 mg/L at SW04 (0.003 mg/L) and its duplicate sample QC03 (0.002 mg/L)
- Zinc exceeded the freshwater criteria of 0.008 mg/L at SW01 (0.009 mg/L), SW04 (0.015 mg/L) and its duplicate sample QC03 (0.011 mg/L).

### **OCP and OPP**

Concentrations of OCP and OPP in surface water samples were below the laboratory PQLs. It is noted the laboratory PQLs for OCP and OPP are higher than the adopted freshwater ecological criteria. Given that concentrations of OCPs and OPPs were not detected in sediment samples, it is unlikely that these will pose a potential risk to the freshwater ecosystems.

## **PCB**

Concentrations of PCB in surface water samples were below the laboratory PQL. It is noted the laboratory PQLs for PCB are higher than the adopted freshwater ecological criteria. Given that concentrations of PCBs were not detected in sediment samples, it is unlikely that these will pose a potential risk to the freshwater ecosystems.

## **PFAS**

PFAS were detected in surface water in sample SW04, however concentrations were below the recreational screening criteria. Therefore, the potential health risk related to direct contact with surface water during road construction activities is considered low.

### **7.6.5 Preliminary waste classification**

#### **Soil**

For preliminary waste classification purposes, soil results were also compared to NSW EPA (2014) waste classification guidelines. A summary is provided below, and results presented in Table F5, Appendix F.

- All analytical results were classified as NSW EPA General Solid Waste criteria (CT1) with the exception of nickel in exceedance of the General Solid Waste criteria (CT1) at ten sampling locations as presented in Table F5 Appenix F.
- As a result of the nickel exceedances, these samples, with the exception of PC07\_0.4-0.5, were further analysed for leachability using the Toxicity Characteristic Leaching Procedure (TCLP). Results of TCLP analysis indicated the samples met the criteria for General Solid Waste SCC1.
- Based on the TCLP nickel results for other samples, sample PC07\_0.4-0.5 can be classified as General Solid Waste if TCLP analysis is proceeded.
- Chromium (III+VI) exceeded the General Solid Waste criteria (CT1) for:
  - TP12\_0.4-0.5 (120 mg/kg)
  - TP15\_0.0-0.2 (110 mg/kg).

These soil samples were further analysed for leachability using the Toxicity Characteristic Leaching Procedure (TCLP). Results of this analysis indicated these samples met the criteria for General Solid Waste SCC1.

- PFAS concentrations and TCLP PFAS in analysed soil samples were within the threshold values for General Solid Waste.
- Asbestos was not detected in any soil samples.

#### **Groundwater and surface water**

The groundwater and surface water within the investigation area have met the Sydney Water's acceptance standard for trade wastewater. However it should be noted that some analysis (ie BOD, suspended solids and total dissolved solids) of water would need to be undertaken and an agreement with Sydney Water reached, prior to the discharge of pumped water into Sydney Water's wastewater system.



## 8. Discussion of findings

### 8.1 Assessment of exposure risks for human health receptors

#### *Soil*

Analytical results for soil samples were within the adopted health screening criteria for commercial/industrial land use, which is considered relevant to the exposure scenarios likely to occur during and post the proposed road construction works. Therefore, the likelihood is considered to be low for soils at the investigated locations to pose a potential health risk to future road construction and maintenance workers from a contamination perspective. However, the soil sampling locations did not target some areas of environmental concern as outlined in the PSI (GHD, 2019). These include the residential property at 25 Jersey Road, the three stockpiles of fill located south PGH Bricks and Paver quarry property, the stockpile yard and Bravo nursery, as presented on Figure 2, Appendix A.

#### *Groundwater*

Analytical results for groundwater samples were within the adopted health screening criteria for the vapour inhalation pathway (commercial/industrial). Therefore, the likelihood is considered to be low for soils at the investigated locations to post a potential health risk to future construction and maintenance workers.

#### *Surface water*

Analytical results of the surface water samples analysed are within the adopted recreational screening criteria for the direct contact pathway. Therefore, the likelihood is considered to be low for surface water at the investigated locations to pose a potential health risk to construction and maintenance workers.

#### *Sediment*

Analytical results of sediment samples were within the adopted health screening criteria for commercial/industrial land use, which is considered relevant to the exposure scenarios likely to occur during and post the proposed construction works. Therefore, the likelihood is considered to be low for sediments at the investigated locations to pose a potential health risk to future construction and maintenance workers.

### 8.2 Assessment of exposure risks for ecological receptors

#### *Groundwater*

Groundwater analytical results indicate concentrations of copper, zinc, nickel and cadmium exceeded the adopted freshwater ecological criteria.

Standing water levels at the study area were measured between approximately 13.61 mAHD at BH06 to 25.9 mAHD at BH12. Elevated concentrations of copper, zinc, nickel and cadmium are inferred to be representative of the regional groundwater quality.

PFAS was not detected in any of the analysed groundwater samples. These results indicate groundwater is not a pathway for PFAS in the study area.

#### *Surface water*

Analytical results of SW04 (collected from Eastern Creek) exceeded the adopted ecological assessment criteria for off-site freshwater receptors for copper and SW04 and SW01 (collected from Bells Creek) exceeded the adopted criteria for zinc.

It is noted hardness correction factors have not been applied to the trigger values for zinc (Table 3.4.3, ANZECC (2000)).

While PFAS concentrations were detected at SW04, the concentrations were below the adopted freshwater ecological criteria.

### **8.3 Preliminary waste classification for soil**

Soil analytical results (both the SCC and TCLP values) were assessed against the criteria outlined in the *Waste Classification Guidelines Part 1: Classifying Waste* (NSW EPA, 2014). Results of this analysis indicated samples met the waste criteria for General Solid Waste, and based on TCLP nickel results for other samples, sample PC07\_0.4-0.5 would likely be classified as General Solid Waste if TCLP analysis was undertaken.

Additionally, natural material which meet the requirements of Virgin Excavated Natural Material (VENM), as provided in the POEO Act 1997, may be classified as VENM.

It should be noted that the above information is not to be used as a waste classification report for off-site disposal for any study area material. Additional waste classification sampling and assessment should be undertaken during the proposed construction works for all materials to be disposed of off-site, and waste classification report(s) in accordance with the requirements outlined on the NSW EPA website (<http://www.epa.nsw.gov.au/wasteregulation/classify-waste.htm>) should be prepared for each individual type of material.

## 8.4 Refined conceptual site model

Based on the findings of the investigation, a refined conceptual site model (CSM) was developed and is presented in Table 8-1.

The CSM shows the source-pathway-receptors linkages identified and a discussion on where they are likely to be complete.

**Table 8-1 Refined conceptual site model**

Sources	Pathway	Receptor	Potentially Complete?
On-site			
Historical use of uncontrolled fill materials in the study area of unknown origin and quality.	Direct contact with contaminated fill or soil.	Current site users (residents and commercial/industrial workers).	<b>Unlikely</b> – Concentrations of COPC were below the adopted health screening criteria.
Contamination associated with fly tipping. Contamination associated with long-term historic Defence activities.	Inhalation and ingestion of contaminated fill, soil or fibres. Migration of surface impacts into subsurface soils.	Future construction workers during road upgrade works and future intrusive maintenance workers.	<b>Unlikely</b> – Concentrations of COPC were below the adopted health screening criteria.
Contamination associated with long-term quarrying activities. ACM, hydrocarbon, pesticides and herbicide contamination associated with long-term rail activities.		Neighbouring property users (commercial/industrial).	<b>Unlikely</b> – offsite residential and commercial land users unlikely to come into direct contact with site soils. Construction management measures should mitigate the risk to offsite receptors.
Contamination associated with pesticide and herbicide use at nurseries.		Terrestrial ecological receptors.	<b>Unlikely</b> – the completed Burdekin Road to Townson Road upgrade will be paved, limiting sensitive receptors within the study area.

Sources	Pathway	Receptor	Potentially Complete?	
	Direct contact or inhalation of vapours from contaminated groundwater.	Future intrusive maintenance workers.	<b>Unlikely</b> – Concentrations of COPC were below the adopted health screening criteria.	
	Vertical and horizontal migration through the unsaturated zone into the saturated zone and horizontal migration within the groundwater.	Future construction workers during road upgrade works.		
			Current site users	<b>Unlikely</b> – Concentrations of COPC were below the adopted health screening criteria. No volatile COPC were reported in groundwater samples.
			Neighbouring property users (residential/commercial/industrial).	
			Ecological receptor (groundwater).	<b>Unlikely</b> – Groundwater representative of the regional groundwater quality.
	Migration of surface water towards down-gradient receptors.	Future construction workers during road upgrade works and future intrusive maintenance workers.	<b>Unlikely</b> – Concentrations of COPC in surface water samples were below the adopted health screening criteria.	
Absorption onto sediments from surface water or groundwater. Discharge of groundwater to surface water bodies.	Aquatic ecological receptors (Eastern Creek, Bells Creek and standing surface water present in study area).	<b>Possible</b> – Concentrations of copper, zinc exceeded the adopted freshwater ecological criteria.		
<b>Off site</b>				
Hydrocarbon contamination from current and historic fuel/potential storage.	Direct contact or inhalation of vapours from contaminated groundwater.	Future intrusive maintenance workers.	<b>Unlikely</b> – Concentrations of COPC were below the adopted health screening criteria.	
	Vertical and horizontal migration through the unsaturated zone into the saturated zone and horizontal migration within the groundwater	Future construction workers during road upgrade works.		

# 9. Conclusions and recommendations

## 9.1 Key findings

In accordance with the objectives detailed in section 1.3, and based on the information contained within this report, the key findings are presented below:

- Soil sampling locations were selected for geotechnical investigation purposes, however GHD considered they provided good coverage of the study area for soil investigation purposes.
- Fill material was encountered at depths from 0 metres and 2 metres below surface. The fill profile generally comprised sandy clay, silty clay and clay of medium to high plasticity. Alluvium was encountered underlying fill at depths from 0.2 metres to 2.5 metres. Residual soils were observed below the alluvium from 0.2 metres to 5.2 metres. Bedrock composed of shale and siltstone was recorded from depths of 1.3 metres to 20.4 metres underlying residual soils.
- Standing groundwater levels ranged from 13.61 metres Australian Height Datum (AHD) (BH6) to 25.9 metres AHD (BH12). Groundwater is generally assumed to flow towards Bells Creek or Eastern Creek.
- Due to limitations on the scope of work, soil sampling locations did not target some areas of environmental concern as outlined in the PSI (GHD, 2019). These include the residential property at 25 Jersey Road, the three stockpiles of fill located south PGH Bricks and Paver quarry property, the stockpile yard and Bravo nursery, as presented on Figure 2, Appendix A. Concentrations of contaminants of potential concern (COPC) in analysed soil and sediment samples were reported below the adopted health screening criteria. Asbestos was not detected in any soil samples.
- Concentration of COPC in groundwater and surface water samples were below the adopted health screening criteria.
- Concentrations of copper, zinc, nickel and cadmium in groundwater and copper and zinc in surface water samples exceeded the adopted freshwater ecological criteria. These elevated concentrations are considered representative of regional groundwater quality.
- PFAS concentrations in groundwater samples were below the laboratory practical quantitation limit (PQL) and below the adopted freshwater ecological criteria.
- PFAS concentrations in surface water samples were above the PQLs however below the adopted health screening criteria and the freshwater ecological criteria.

## 9.2 Conclusions

Based on these key findings, GHD concludes:

- The potential health risk to road construction workers within the study area is considered low from a contamination perspective.
- Fill at the sampling locations are classified as General Solid Waste. Based on other TCLP results, sample PC07\_0.4-0.5 would likely be classified as General Solid Waste if TCLP analysis was undertaken. This information is not to be used as a waste classification report for off-site disposal for any study area material. Additional waste classification sampling and assessment should be undertaken during the proposed construction works for all materials to be disposed of off-site.

- The groundwater and surface water sampled met the Sydney Water's acceptance standard for trade wastewater. However, it should be noted that some analysis (ie BOD and suspended solids) of water needs to be undertaken and an agreement with Sydney Water needs to be reached, prior to the discharge of pumped groundwater into Sydney Water's wastewater system. It is noted a Surface Water and Groundwater Impact Assessment Report has been prepared for the site (GHD, June 2020), which refers to mitigation and management measures for surface and groundwater during the construction and operational phase.

### 9.3 Recommendations

Based on the findings of this investigation, and with due regard to the proposed construction works, GHD recommends the following:

- The site boundary for Stage 1 and the proposed site compound area was further delineated as presented in Figure 1 in Appendix A (as shown as 'Current Stage 1 footprint'). Following this update it is considered that soil sampling locations are sufficient for the investigation of areas of potential concern as nominated in the PSI (GHD, 2019), with the exception of the residential property at 25 Jersey Road, the three stockpiles of fill located south PGH Bricks and Paver quarry property, the stockpile yard and Bravo nursery as presented on Figure 2, Appendix A. Further assessment of these areas should be completed prior to construction works.
- In addition, further delineation of the site boundary has also indicated where the proposed site compound area is going to be located. No soil sampling or site inspection has been undertaken for this portion of the site. It is recommended that a site inspection for any indication of asbestos or other signs of contamination be undertaken prior to the site compound area being established.
- An unexpected finds protocol (including asbestos management plan) should be adopted and included in the construction environmental management plan for the management of any unexpected contamination encountered during the proposed works.
- Groundwater assessment was not undertaken on the central portion of the study area from the eastern boundary of Bravo Nursery to Durham Road within Stage 1 construction footprint, and from Durham Road to Eastern Creek within Stage 2 construction footprint as presented in Figure 2 in Appendix A as it is understood that surface levels will be raised for the construction of the road and groundwater is only likely to be encountered for pile installation of Floodplain Bridge and Bells Creek Bridge, and possibly for the installation of underground services. If during construction works groundwater is encountered, this should be managed under the groundwater management plan.
- Waste management plan(s) should be prepared detailing the additional waste classification sampling, analysis, and waste management protocols required during construction.
- Any dewatering and subsequent treatment of groundwater that may be required during construction works must be carried out in accordance with a groundwater management plan.
- Should surface water be utilised during construction works further assessment and analysis of potential contamination prior to its adequate disposal/reuse should be undertaken.

## 10. Limitations

This report has been prepared by GHD Pty Ltd (GHD) for Transport for NSW (TfNSW) and may only be used and relied on by TfNSW for the purpose agreed between GHD and TfNSW as set out in section 1 of this report.

GHD otherwise disclaims responsibility to any person other than TfNSW arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

GHD has prepared this report on the basis of information provided by TfNSW and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

The opinions, conclusions and any recommendations in this report are based on information obtained from, and testing undertaken at or in connection with, specific sample points. Site conditions at other parts of the site may be different from the site conditions found at the specific sample points.

Investigations undertaken in respect of this report are constrained by the particular site conditions, such as the location of buildings, services and vegetation. As a result, not all relevant site features and conditions may have been identified in this report.

Site conditions (including the presence of hazardous substances and/or site contamination) may change after the date of this Report. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this report if the site conditions change.

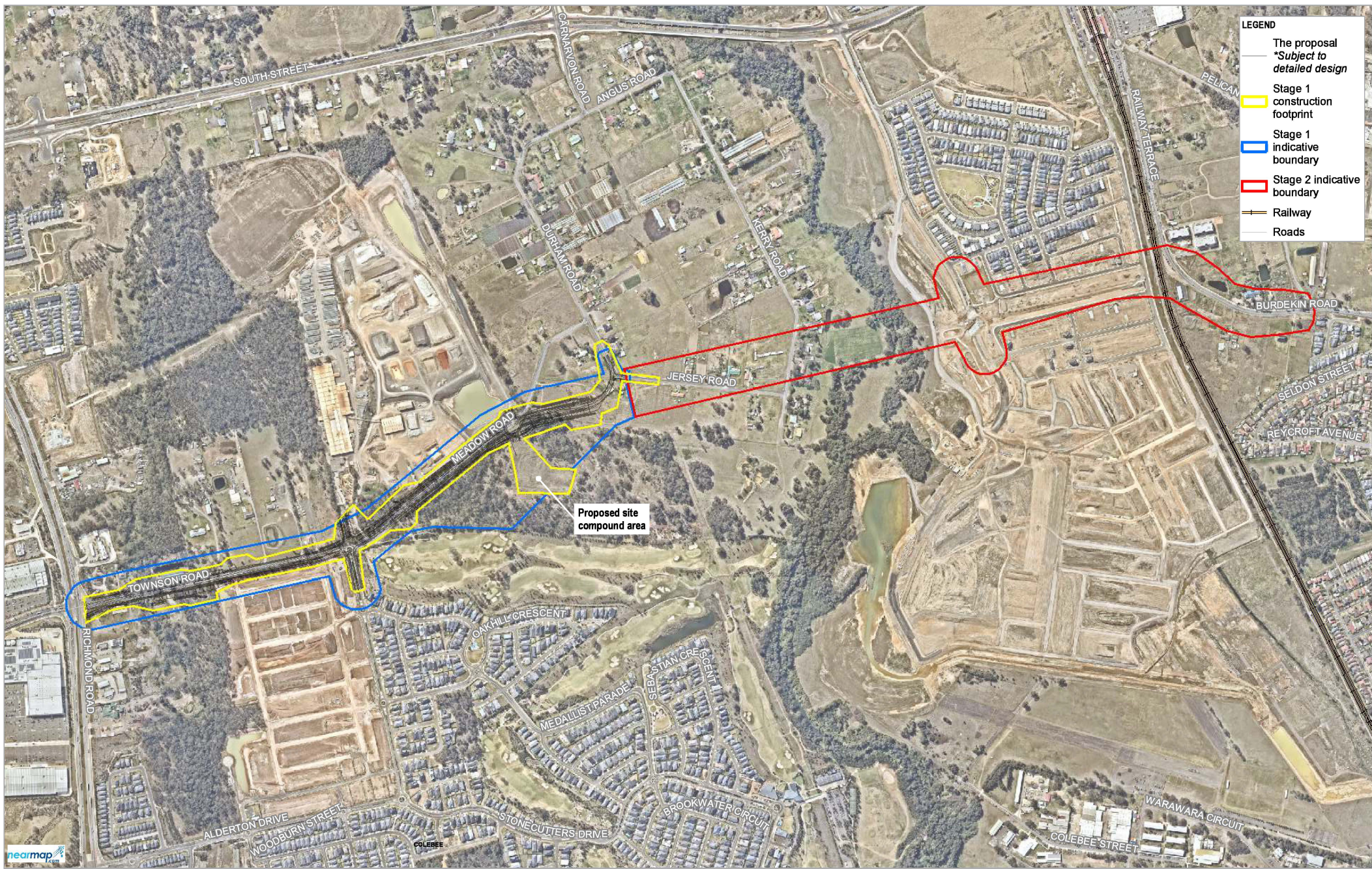
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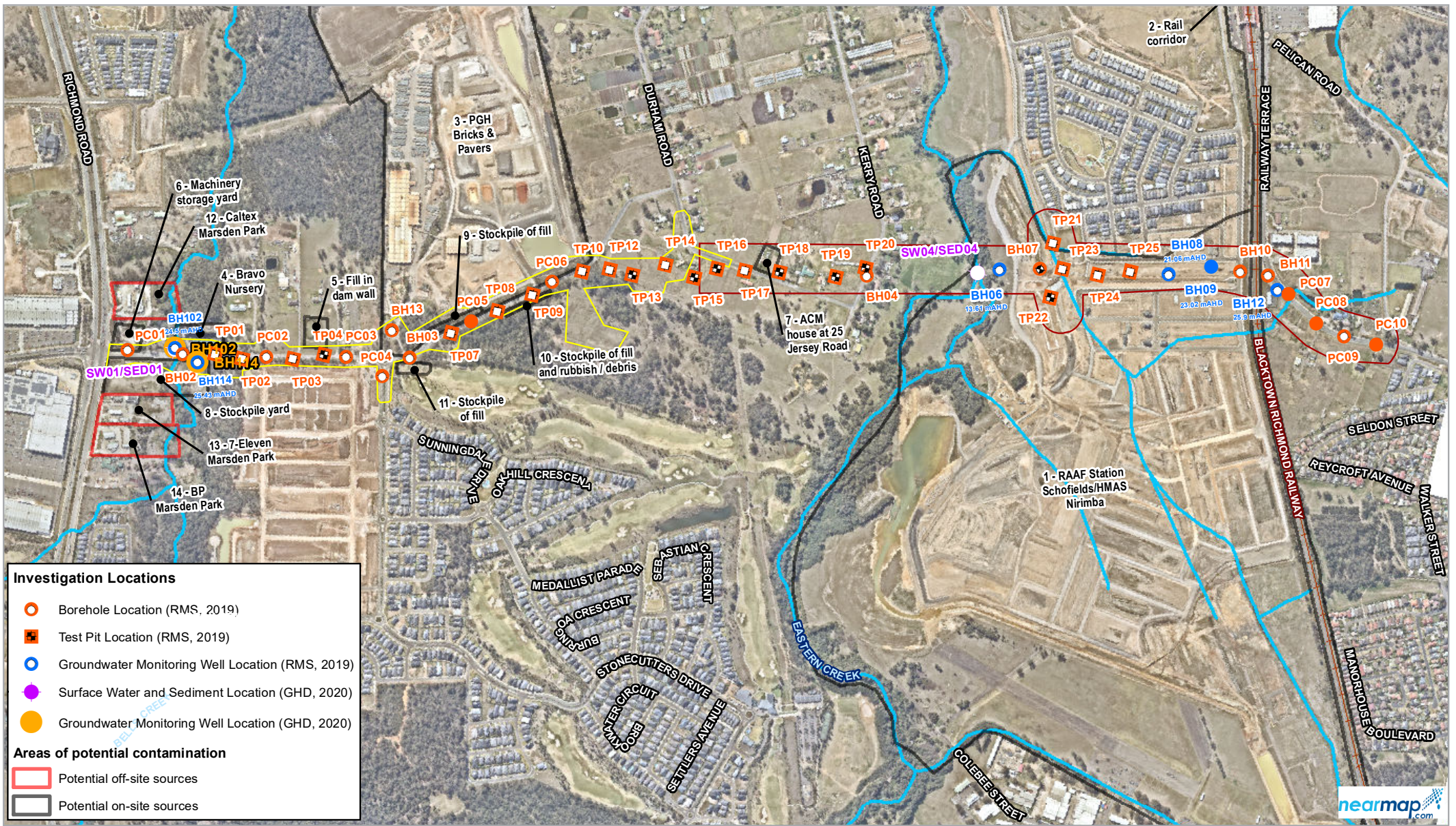
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- Standards Australia. (2005). Australian Standard, Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1 - Non-volatile and semi-volatile compounds, AS4482.1-2005. Sydney: Standards Australia.
- The Heads of EPAs Australia and New Zealand (HEPA), PFAS National Environmental Management Plan (NEMP), January 2018.



## **Appendices**

## **Appendix A** – Figures





**LEGEND**

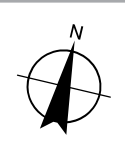
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- Stage 2 indicative boundary
- Waterways
- Railway

Paper Size ISO A4

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Grid: GDA 1994 MGA Zone 56

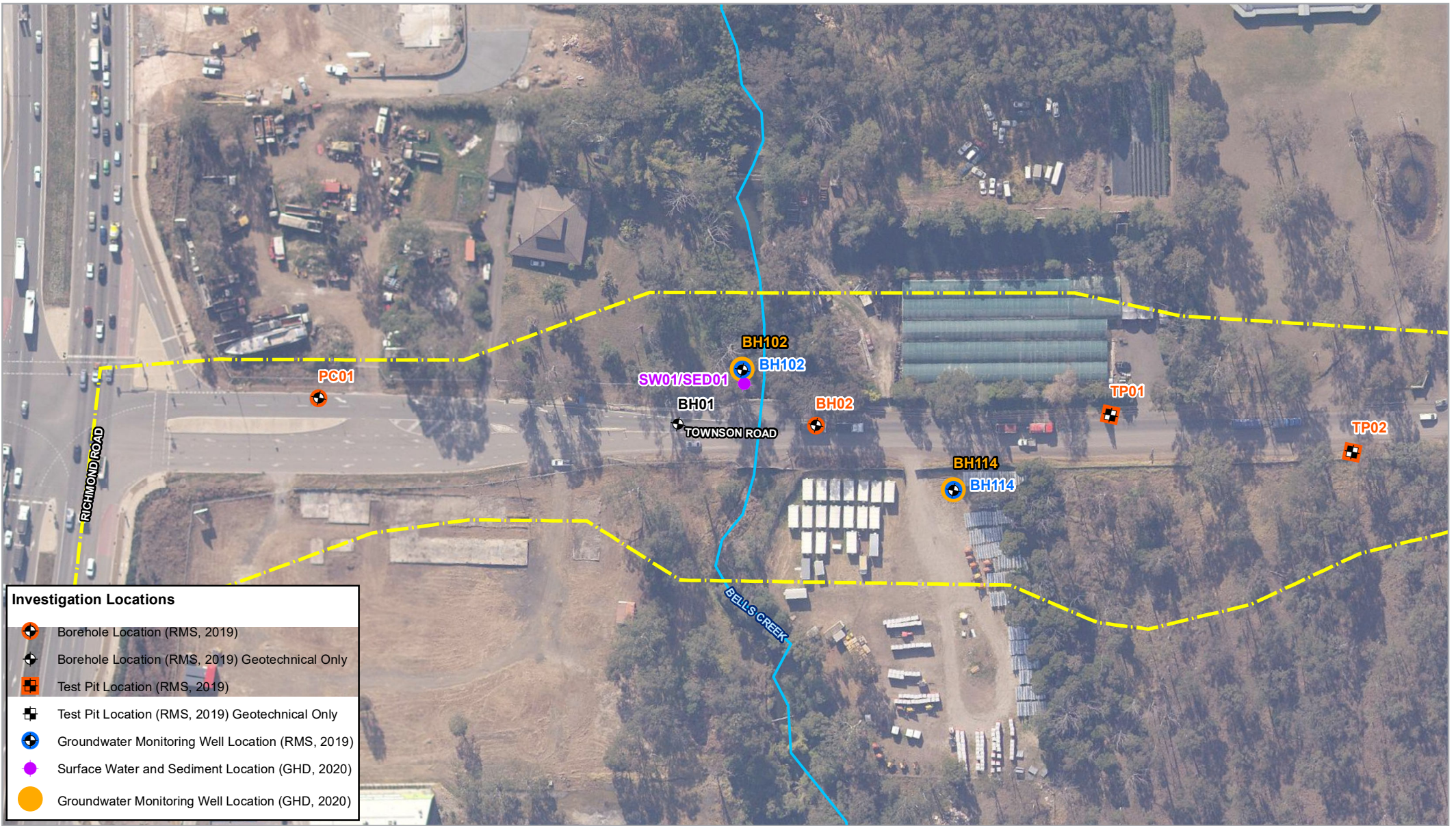


Transport for NSW  
Townson Road Upgrade Stage 1 Between  
Richmond Road and Jersey Road








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Date 05 Nov 2020

**Sampling Locations**





**FIGURE 2**

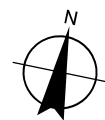
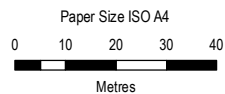


**Investigation Locations**

-  Borehole Location (RMS, 2019)
-  Borehole Location (RMS, 2019) Geotechnical Only
-  Test Pit Location (RMS, 2019)
-  Test Pit Location (RMS, 2019) Geotechnical Only
-  Groundwater Monitoring Well Location (RMS, 2019)
-  Surface Water and Sediment Location (GHD, 2020)
-  Groundwater Monitoring Well Location (GHD, 2020)

**LEGEND**

-  Stage 1 construction footprint
-  Waterways
-  Stage 2 indicative boundary
-  Railway



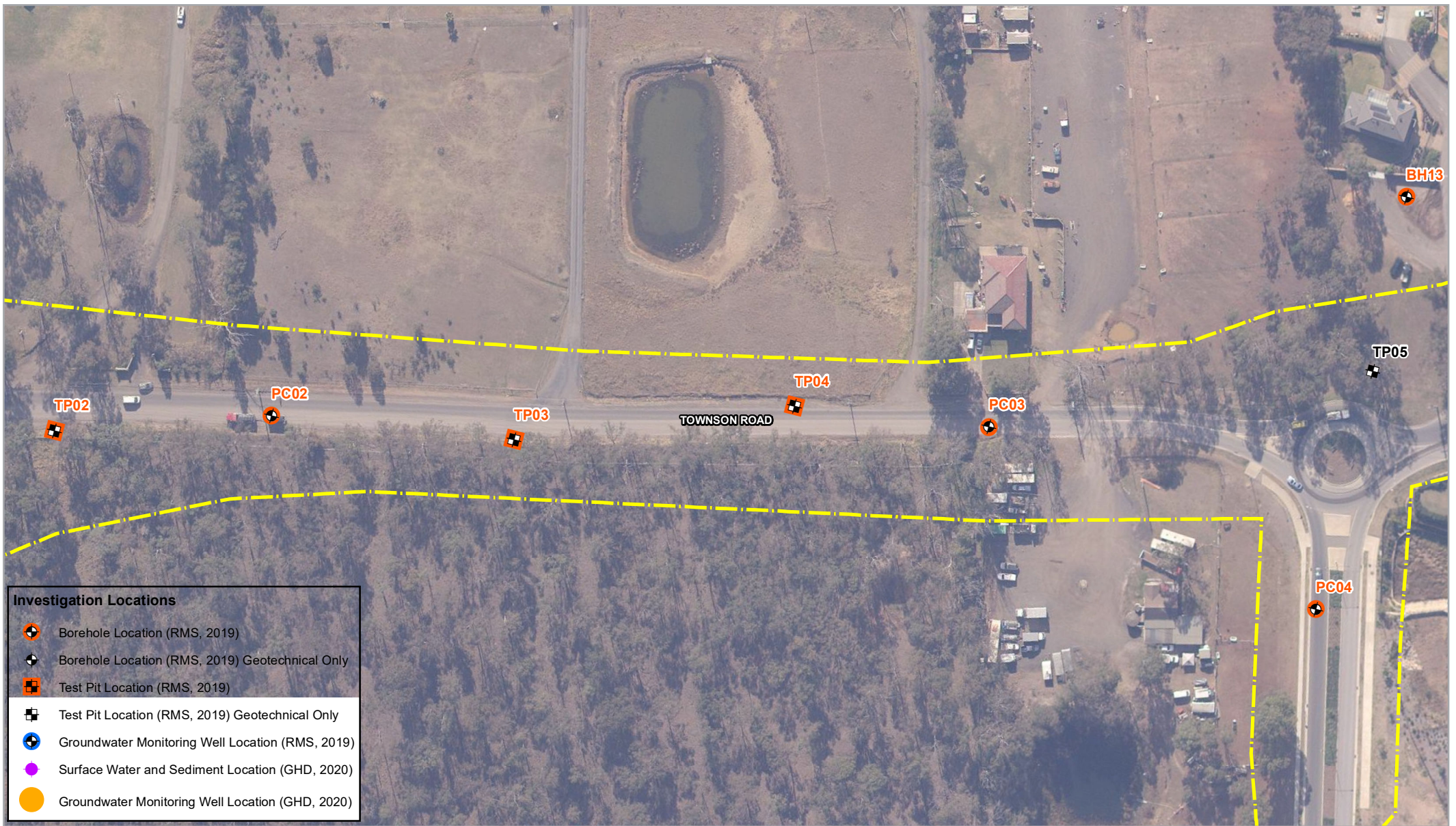
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**Sampling Locations**





**FIGURE 3**




**Investigation Locations**

-  Borehole Location (RMS, 2019)
-  Borehole Location (RMS, 2019) Geotechnical Only
-  Test Pit Location (RMS, 2019)
-  Test Pit Location (RMS, 2019) Geotechnical Only
-  Groundwater Monitoring Well Location (RMS, 2019)
-  Surface Water and Sediment Location (GHD, 2020)
-  Groundwater Monitoring Well Location (GHD, 2020)

**LEGEND**

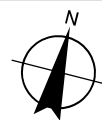
-  Stage 1 construction footprint
-  Stage 2 indicative boundary
-  Waterways
-  Railway

Paper Size ISO A4



Metres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



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**Sampling Locations**

**FIGURE 4**



**LEGEND**

Stage 1 construction footprint    Waterways

Stage 2 indicative boundary    Railway

Paper Size ISO A4

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Metres

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Grid: GDA 1994 MGA Zone 56

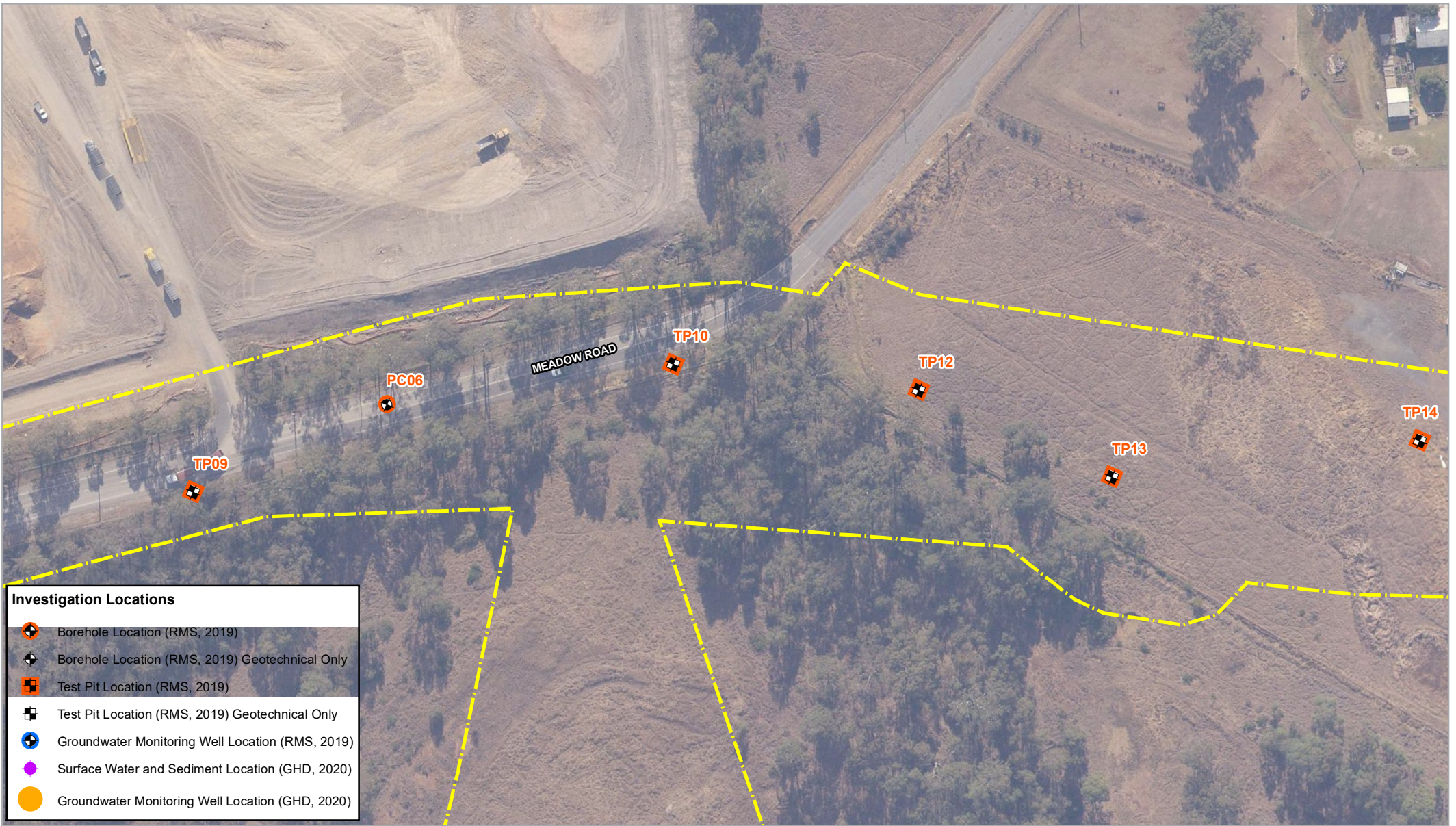


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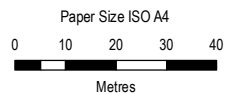
**Sampling Locations**

**FIGURE 5**



**LEGEND**

- Stage 1 construction footprint
- Waterways
- Stage 2 indicative boundary
- Railway



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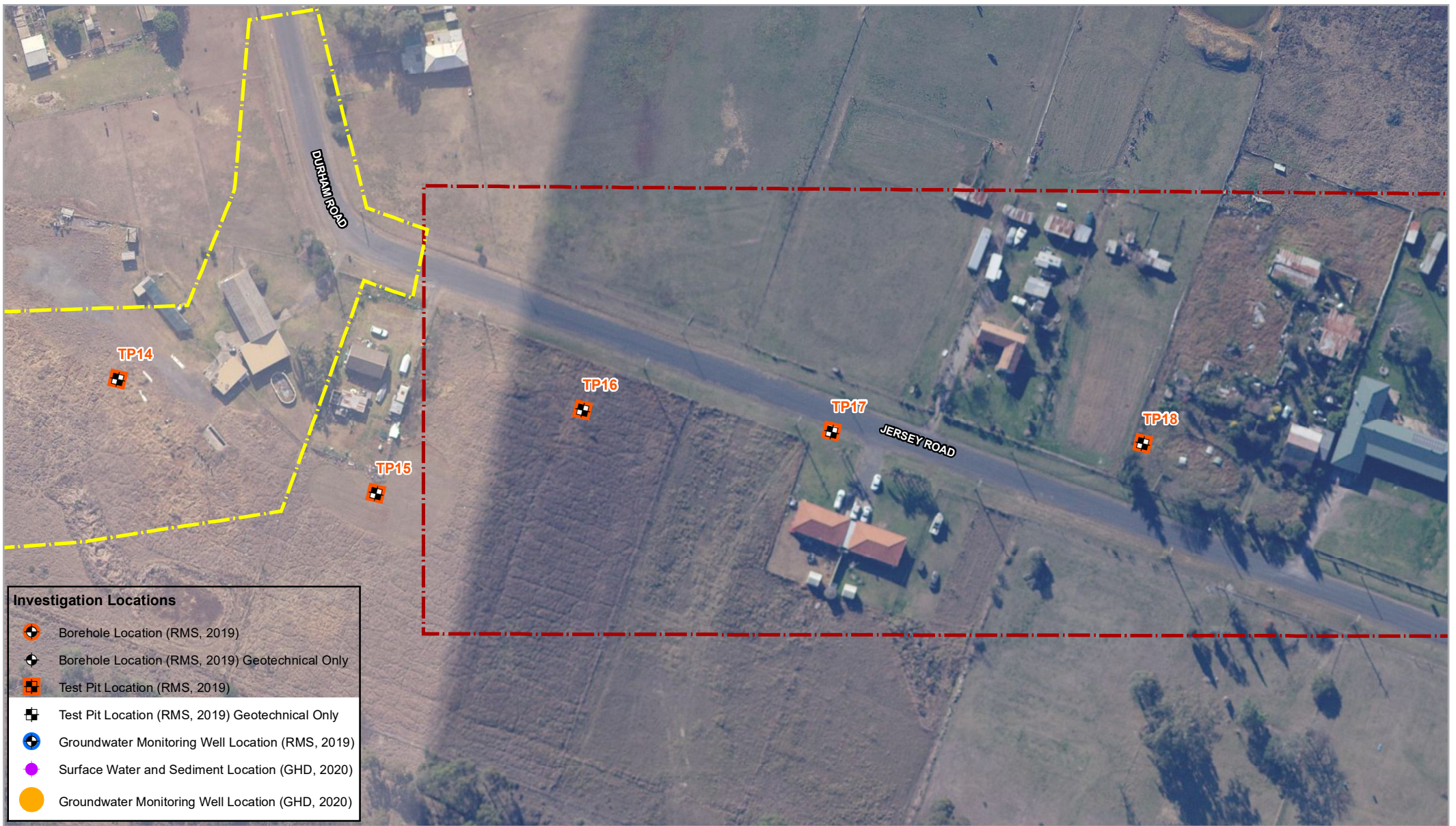
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**Detailed Site Investigation**

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 Date **24 Jul 2020**








**Sampling Locations**

**FIGURE 6**










**Investigation Locations**

-  Borehole Location (RMS, 2019)
-  Borehole Location (RMS, 2019) Geotechnical Only
-  Test Pit Location (RMS, 2019)
-  Test Pit Location (RMS, 2019) Geotechnical Only
-  Groundwater Monitoring Well Location (RMS, 2019)
-  Surface Water and Sediment Location (GHD, 2020)
-  Groundwater Monitoring Well Location (GHD, 2020)

**LEGEND**

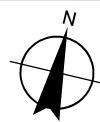
-  Stage 1 construction footprint
-  Waterways
-  Stage 2 indicative boundary
-  Railway

Paper Size ISO A4



Metres

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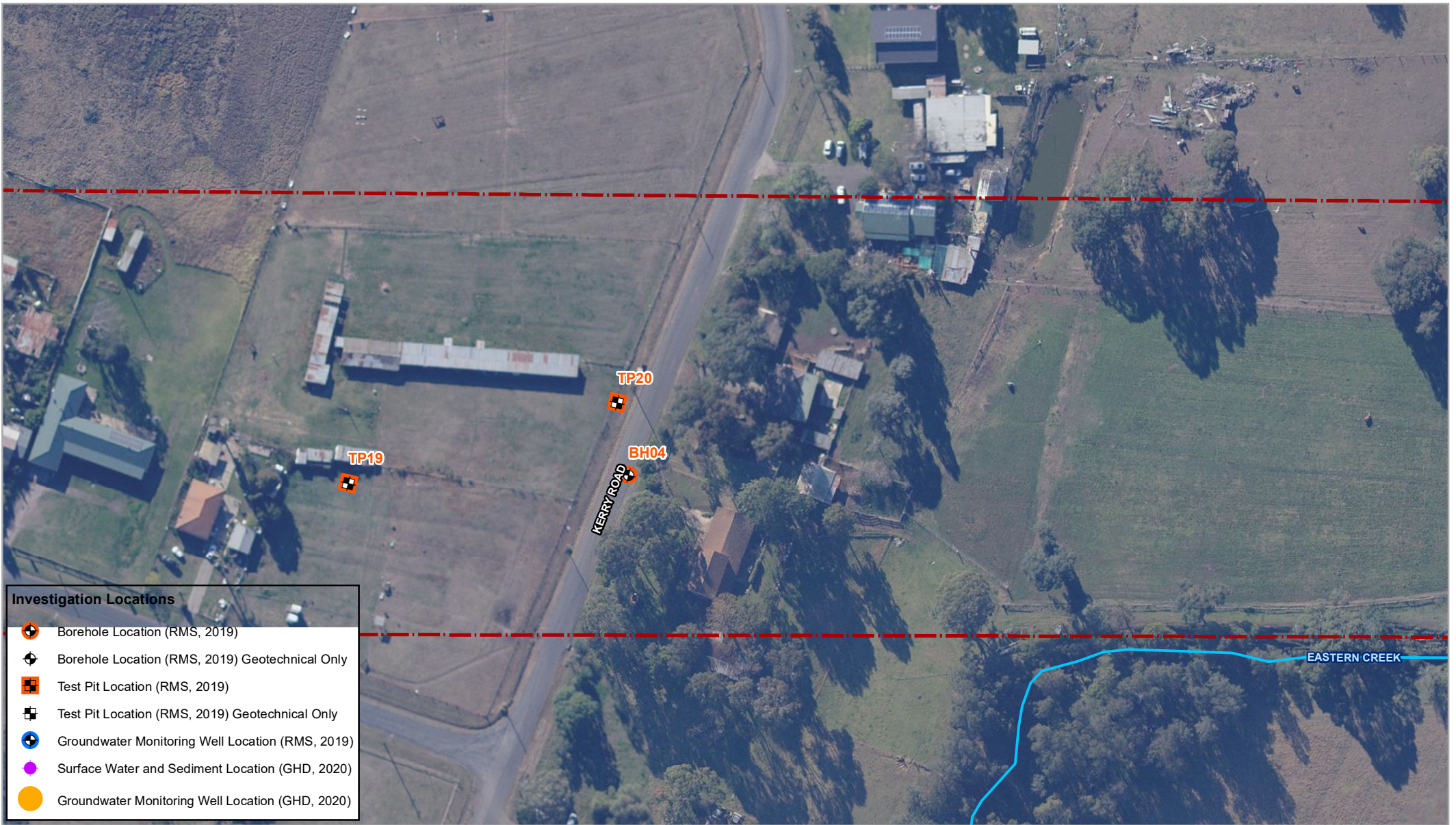


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**Sampling Locations**





**FIGURE 7**

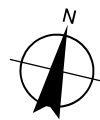
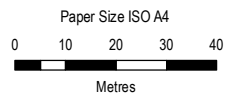


**Investigation Locations**

-  Borehole Location (RMS, 2019)
-  Borehole Location (RMS, 2019) Geotechnical Only
-  Test Pit Location (RMS, 2019)
-  Test Pit Location (RMS, 2019) Geotechnical Only
-  Groundwater Monitoring Well Location (RMS, 2019)
-  Surface Water and Sediment Location (GHD, 2020)
-  Groundwater Monitoring Well Location (GHD, 2020)

**LEGEND**

-  Stage 1 construction footprint
-  Waterways
-  Stage 2 indicative boundary
-  Railway



Map Projection: Transverse Mercator  
 Horizontal Datum: GDA 1994  
 Grid: GDA 1994 MGA Zone 56

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**Sampling Locations**

**FIGURE 8**



**Investigation Locations**

- Borehole Location (RMS, 2019)
- Borehole Location (RMS, 2019) Geotechnical Only
- Test Pit Location (RMS, 2019)
- Test Pit Location (RMS, 2019) Geotechnical Only
- Groundwater Monitoring Well Location (RMS, 2019)
- Surface Water and Sediment Location (GHD, 2020)
- Groundwater Monitoring Well Location (GHD, 2020)

**LEGEND**

- Stage 1 construction footprint
- Waterways
- Stage 2 indicative boundary
- Railway

Paper Size ISO A4

Metres

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Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56

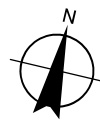
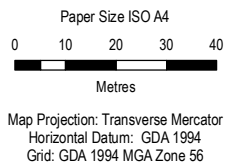
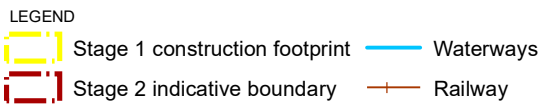
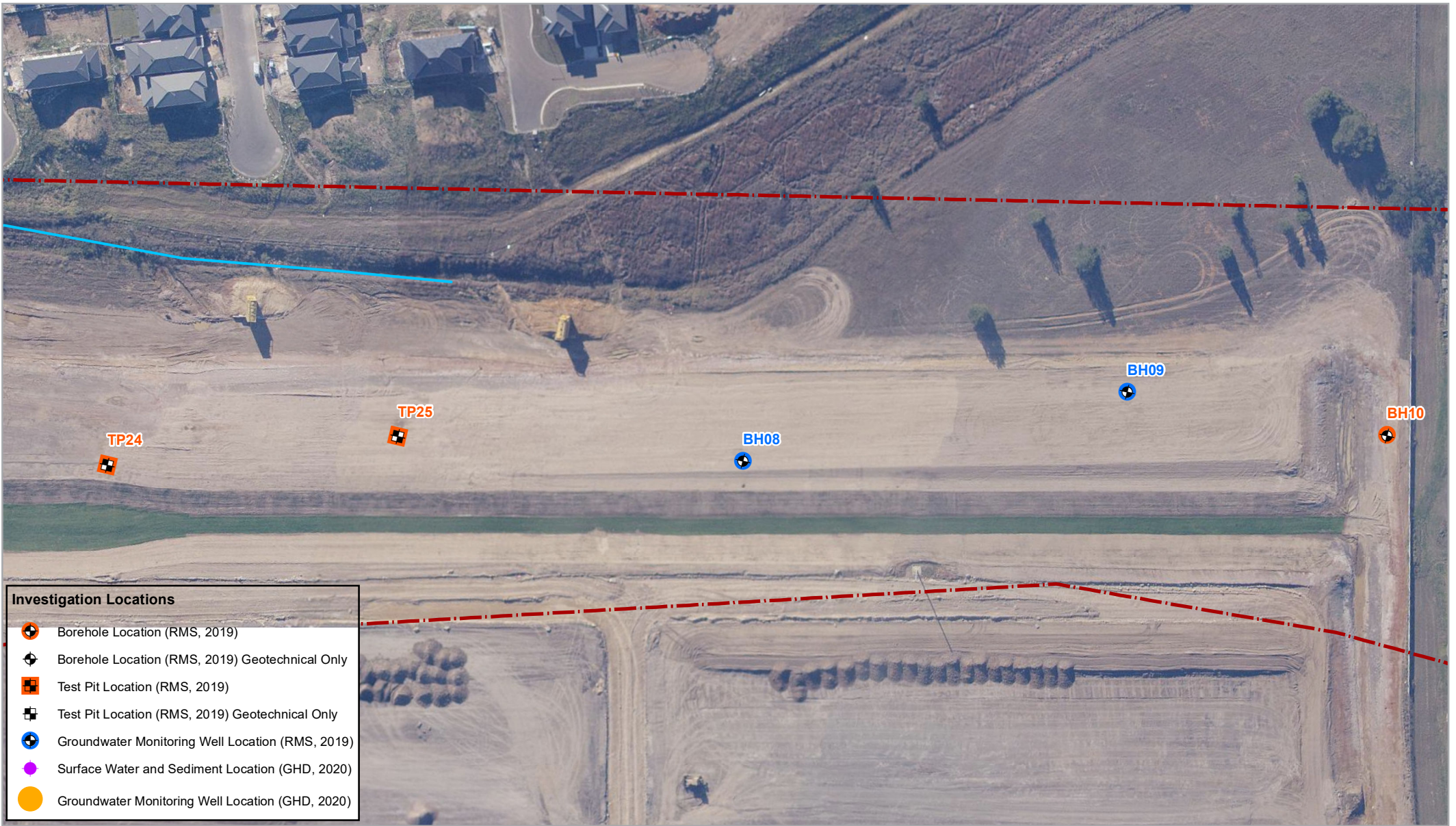


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**Sampling Locations**

**FIGURE 9**

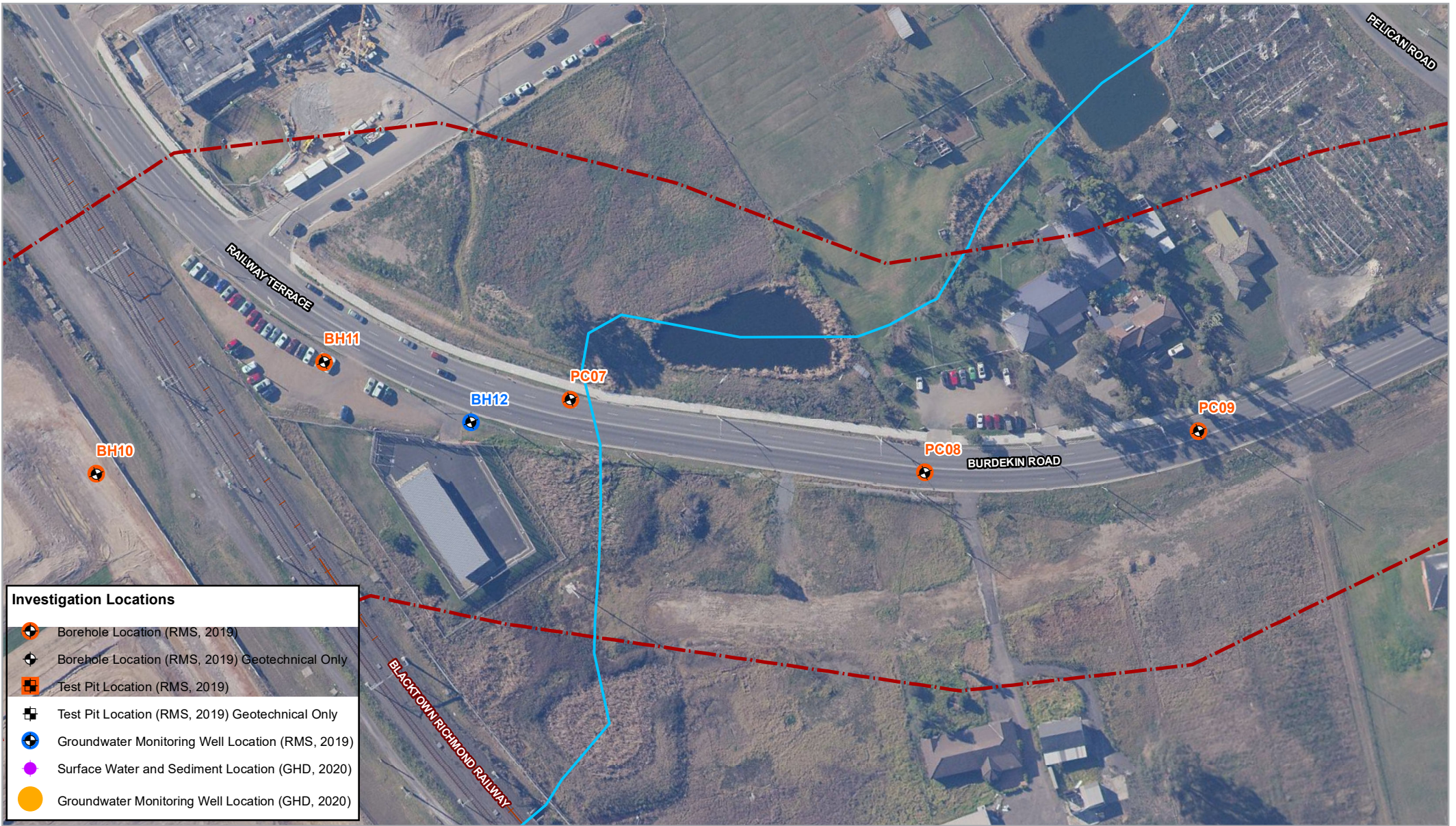


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**Sampling Locations**

**FIGURE 10**



**Investigation Locations**

- Borehole Location (RMS, 2019)
- Borehole Location (RMS, 2019) Geotechnical Only
- Test Pit Location (RMS, 2019)
- Test Pit Location (RMS, 2019) Geotechnical Only
- Groundwater Monitoring Well Location (RMS, 2019)
- Surface Water and Sediment Location (GHD, 2020)
- Groundwater Monitoring Well Location (GHD, 2020)

**LEGEND**

- Stage 1 construction footprint
- Waterways
- Stage 2 indicative boundary
- Railway

Paper Size ISO A4

Metres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



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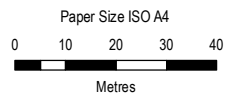
**Sampling Locations**

**FIGURE 11**



- Investigation Locations**
- Borehole Location (RMS, 2019)
  - Borehole Location (RMS, 2019) Geotechnical Only
  - Test Pit Location (RMS, 2019)
  - Test Pit Location (RMS, 2019) Geotechnical Only
  - Groundwater Monitoring Well Location (RMS, 2019)
  - Surface Water and Sediment Location (GHD, 2020)
  - Groundwater Monitoring Well Location (GHD, 2020)

- LEGEND**
- Stage 1 construction footprint
  - Waterways
  - Stage 2 indicative boundary
  - Railway



Map Projection: Transverse Mercator  
 Horizontal Datum: GDA 1994  
 Grid: GDA 1994 MGA Zone 56

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**Sampling Locations**

**FIGURE 12**

**Appendix B** – Borehole Logs (as extracted from TfNSW Geotechnical Factual Report, October 2019)

Report reference:

City of Blacktown Geotechnical Science Unit (2016 September) Townson Road to Burdekin Road,  
Concept Design Stage - Geotechnical Factual Report Issue No. 3



## **Appendix C** – Borehole logs for two GHD installed monitoring wells

**BOREHOLE LOG SHEET**

CLIENT : Transport for NSW  
 PROJECT : Townson-Burdekin Road Detailed Design - Stage 1 Geotechnical Investigation  
 LOCATION : Marsden Park NSW

**HOLE NO : BH102**

SHEET : 1 OF 5

POSITION : E: 300421.8, N: 6267116.6 (MGA94 / 56) SURFACE RL : 26.14 (AHD) ANGLE FROM HORIZONTAL: 90°

RIG TYPE : Drill Techniques D-4T MOUNTING : Utility CONTRACTOR : Stratacore DRILLER : LT

DATE STARTED : 13/5/20 DATE COMPLETED : 14/5/20 DATE LOGGED : 14/5/20 LOGGED BY : JF CHECKED BY : BS

DRILLING				MATERIAL					Installation Type				
PROGRESS	DRILLING & CASING	WATER	DRILLING PENETRATION	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	(COBBLES/BOULDERS/FILL/TOPSOIL) then SOIL NAME: colour, plasticity, primary particle characteristics, secondary and minor components, zoning (origin) and ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, durability, strength, weathering/alteration, defects	MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY	STRUCTURE & Other Observations	Piezometer Log Details	Components
		N/A		0.0		CL	CLAY: brown, low plasticity, trace sand, gravel and rootlets, w>PL (fill)	M			FILL		Gatic Cover
				0.10m									Fill
				0.30m			CLAY: orange-brown, low plasticity, trace sand, w<PL (alluvium)	M			ALLUVIUM		Bentonite
				0.80m									Sand
				1.00m		CL		M	H				
				1.45m							1.30: Su >200 kPa		
				1.50m							1.45: HP In-situ >600 kPa		
				1.80m			CLAY: grey mottled orange, medium plasticity, w<PL				1.50: SPT Recovery: 0.45 m		
				1.95m									
				2.00m		CI		M	vst		2.00: HP In-situ =350 kPa		
				2.50m									
				2.95m									
				3.00m									
				3.36m			CLAY: mottled orange-grey, high plasticity, with fine grained sand, w<PL (residual)				RESIDUAL		Slotted PVC Screen
				3.30m			3.30m, brown-grey.				3.30: HP In-situ >600 kPa		
				4.00m		CH		M	H		3.80: increased drilling resistance		
				4.50m									
				4.60m			INTERLAMINATED SILTSTONE AND SANDSTONE: extremely weathered, very low strength, common carbonaceous fragments (weathered rock)				WEATHERED ROCK		
				4.57m							4.50: SPT Recovery: 0.07 m		

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See Standard Sheets for details of abbreviations & basis of descriptions



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Job No. **12511195**

AGS\_3\_1 RTA\_1\_1 LIB 08.1 GHD 2.04.0 GLB Log GHD NON-CORED DRILL HOLE\_PIEZO 12511195 TOWNSON-BURDEKIN ROAD.GPJ 03/Aug/2020 18:31:10.02.00.04

**BOREHOLE LOG SHEET**

CLIENT : Transport for NSW	<b>HOLE NO : BH102</b>
PROJECT : Townson-Burdekin Road Detailed Design - Stage 1 Geotechnical Investigation	SHEET : 2 OF 5
LOCATION : Marsden Park NSW	
POSITION : E: 300421.8, N: 6267116.6 (MGA94 / 56)	SURFACE RL : 26.14 (AHD)
	ANGLE FROM HORIZONTAL: 90°
RIG TYPE : Drill Techniques D-4T MOUNTING : Utility	CONTRACTOR : Stratacore
	DRILLER : LT
DATE STARTED : 13/5/20	DATE COMPLETED : 14/5/20
DATE LOGGED : 14/5/20	LOGGED BY : JF
	CHECKED BY : BS

DRILLING					MATERIAL					Installation Type				
DRILLING & CASING	WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	SOIL NAME: colour, plasticity, primary particle characteristics, secondary and minor components, zoning (origin) and ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, durability, strength, weathering/alteration, defects	MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY	STRUCTURE & Other Observations	Installation Type	
													Piezometer Log Details	Components
SFA (TC-BI)	N/A				5.0	[Graphic Log Pattern]	-	(COBBLES/BOULDERS/FILL/TOPSOIL) then SOIL NAME: colour, plasticity, primary particle characteristics, secondary and minor components, zoning (origin) and ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, durability, strength, weathering/alteration, defects				WEATHERED ROCK		Components
				6.00m SPT 5080mm N=R 6.08m	6.0	[Graphic Log Pattern]	-	INTERLAMINATED SILTSTONE AND SANDSTONE: extremely weathered, very low strength, common carbonaceous fragments (weathered rock) (continued)				6.00: SPT Recovery: 0.08 m		Base of Piezo at 6.0m
					6.08m	[Graphic Log Pattern]	-	Continued as Cored Drill Hole						
					7.0	[Graphic Log Pattern]	-							
					8.0	[Graphic Log Pattern]	-							
					9.0	[Graphic Log Pattern]	-							
					10.0	[Graphic Log Pattern]	-							

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AGS\_3\_1 RTA\_1\_1 LIB\_08.1 GHD 2.04.0 GLB Log GHD NON-CORED DRILL HOLE\_PIEZO\_12511195 TOWNSON-BURDEKIN ROAD.GPJ 03/Aug/2020 18:31:10.02.00.04

See Standard Sheets for details of abbreviations & basis of descriptions



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**CORE LOG SHEET**

CLIENT : Transport for NSW	<b>HOLE NO : BH102</b>	
PROJECT : Townson-Burdekin Road Detailed Design - Stage 1 Geotechnical Investigation	SHEET : 3 OF 5	
LOCATION : Marsden Park NSW		
POSITION : E: 300421.8, N: 6267116.6 (MGA94 / 56)	SURFACE RL : 26.14 (AHD)	ANGLE FROM HORIZONTAL: 90°
RIG TYPE : Drill Techniques D-4T MOUNTING : Utility	CONTRACTOR : Stratacore	DRILLER : LT
DATE STARTED : 13/5/20	DATE COMPLETED : 14/5/20	DATE LOGGED : 14/5/20
	LOGGED BY : JF	CHECKED BY : BS

DRILLING			MATERIAL				NATURAL FRACTURES	
PROGRESS	LOSS	SAMPLES & FIELD TESTS	DEPTH/RL (m)	DESCRIPTION	WEATHERING	ESTIMATED STRENGTH	SPACING (mm)	ADDITIONAL DATA
DRILLING & CASING	WATER							
			5.0					
			6.0	6.08m START CORING AT 6.08m				
	19% LOSS	d=0.3 a=0.21	6.20m	SILTSTONE: grey, thinly laminated to laminated, with interlaminated fine grained sandstone	MW			
			6.43m	CORE LOSS 0.23m (6.20-6.43)				
			6.5	SILTSTONE: dark grey to grey, laminated, with fine grained sandstone laminations and common carbonaceous laminae	MW			6.52, Pt, 5°, So, Pln, Cn, Cl
		6.87m d=0.3 a=0.38	7.0					
	12% LOSS		7.20m	CORE LOSS 0.34m (7.20-7.54)				7.14-7.20, WSm, 0°, CLAY/ X, 60 mm
			7.54m	SILTSTONE: dark grey, laminated, common carbonaceous laminae	MW - SW			
		7.89m d=0.1 a=0.17	8.0					
			8.40m	8.40m, dark grey and grey, with interlaminated fine grained sandstone.	HW			
		8.61m d=0.29 a=0.29	8.5		MW - SW			
			8.73m	8.73m, common carbonaceous laminae.				
			8.82m	SANDSTONE: fine grained, grey, laminated				
			9.13m	SILTSTONE: dark grey, laminated to thinly laminated				
			9.5	9.43-9.53m, sandstone bed, fine grained, grey.				
		9.69m a=0.16	10.0					9.84-9.91, SS, 50°, Slk, Cu, Cn

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AGS\_3\_1 RTA\_1\_1 LIB\_08.1 GHD 2.04.0 GLB Log GHD CORED DRILL HOLE\_AS17 12511195 TOWNSON-BURDEKIN ROAD.GPJ 03/Aug/2020 18:46 10.02.00.04

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**CORE LOG SHEET**

CLIENT : Transport for NSW  
 PROJECT : Townson-Burdekin Road Detailed Design - Stage 1 Geotechnical Investigation  
 LOCATION : Marsden Park NSW

**HOLE NO : BH102**

SHEET : 4 OF 5

POSITION : E: 300421.8, N: 6267116.6 (MGA94 / 56) SURFACE RL : 26.14 (AHD) ANGLE FROM HORIZONTAL: 90°

RIG TYPE : Drill Techniques D-4T MOUNTING : Utility CONTRACTOR : Stratacore DRILLER : LT

DATE STARTED : 13/5/20 DATE COMPLETED : 14/5/20 DATE LOGGED : 14/5/20 LOGGED BY : JF CHECKED BY : BS

DRILLING			MATERIAL				NATURAL FRACTURES	
PROGRESS	LOSS	SAMPLES & FIELD TESTS	DEPTH/RL (m)	DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50)MPa ● Axial ○ Diametral	SPACING (mm)	ADDITIONAL DATA (joints, partings, seams, zones and veins) Defect type, orientation, roughness and shape, composition or coating, aperture and thickness
DRILLING & CASING	WATER							
			10.0	SILTSTONE: dark grey, laminated to thinly laminated <i>(continued)</i>	MW SW			10.08-10.10, Jt, 60°, So, Pln, Cn
	4% LOSS		10.10-10.31	CORE LOSS 0.05m (10.26-10.31)				
			10.31	SILTSTONE: dark grey, laminated to thinly laminated, with common carbonaceous laminae	MW			10.31-10.40, CSm, 0°, Rf, Un, X
			10.72m a=0.29	10.92m, thinly laminated, with rare carbonaceous laminae.	HW			10.79-10.81, Jt, 70°, Rf, Un, Cn 10.84-10.92, Jt, 70°, Rf, Un, Cn
			11.0	SANDSTONE: fine grained, grey, with siltstone laminations				11.20-11.25, WSm, CLAY, 50 mm 11.29-11.36, Jt, 70°, Rf, Un, Cn
	23% LOSS		11.50	CORE LOSS 0.30m (11.50-11.80)				11.37-11.47, Jt, 70°, Rf, Un, Cn 11.47-11.50, WSm, CLAY, 20 mm
			11.82m a=1.03	SANDSTONE: fine grained, pale grey	MW SW			11.90-11.93, Jt, 60°, Rf, Un, Cn
			12.0	SILTSTONE: dark grey, laminated, with carbonaceous laminae				12.09-12.12, WSm, 0°, CLAY, 30 mm 12.20-12.23, Jt, 60°, Rf, Un, Cn 12.27, ISm, 10°, So, Pln, CLAY, TI 12.29, ISm, 0°, So, Pln, CLAY, TI 12.36-12.38, Jt, 20°, Rf, Un, Cn 12.44, Pt, 5°, Rf, Pln, Cn
			12.47m a=0.46	12.63m, laminated to thinly laminated, with common carbonaceous laminae.	HW			12.57-12.63, WSm, 0°, CLAY, 60 mm 12.70-12.76, SSm, 5°, Rf, So, Cl
	4% LOSS		12.80	CORE LOSS 0.12m (12.80-12.92)				
			13.0	SANDSTONE: fine grained, grey, thinly bedded	MW			12.98-13.08, Jt, 70°, Rf, Un, Cn 13.08-13.12, Jt, 10°, Rf, Un, Cn 13.13, Jt, 10°, Rf, Un, Cn, CSm, 0°, CLAY, (130mm)
			13.12	SILTSTONE: grey to dark grey, thinly laminated to laminated	XW			13.21-13.34, Drilling XXX?
			13.21	13.21m, common carbonaceous fragments and laminae.				
			13.41m d=0.28 a=0.33	INTERLAMINATED SILTSTONE AND SANDSTONE: grey to dark grey, laminated to very thinly bedded, sandstone is fine grained, common carbonaceous laminae	MW SW			13.37, Pt, 0°, Pln, X Co 13.61-13.67, Jt, 60°, Slk, Pln, Cn, Cl 13.65-13.73, Jt, 60°, Rf, Un, Cn
			14.0	SILTSTONE: dark grey to grey, laminated, with common sandstone and carbonaceous laminations				14.20-14.23, WSm, 5°, CLAY, 35 mm
			14.23					
			14.5					
			15.0					

AGS\_3\_1 RTA\_1\_1 LIB 08.1 GHD 2.04.0 GLB Log GHD CORED DRILL HOLE\_AS17 12511195 TOWNSON-BURDEKIN ROAD.GPJ 03/Aug/2020 18:46 10.02.00.04

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**CORE LOG SHEET**

CLIENT : Transport for NSW	<b>HOLE NO : BH102</b>	
PROJECT : Townson-Burdekin Road Detailed Design - Stage 1 Geotechnical Investigation	SHEET : 5 OF 5	
LOCATION : Marsden Park NSW	POSITION : E: 300421.8, N: 6267116.6 (MGA94 / 56)	SURFACE RL : 26.14 (AHD)
RIG TYPE : Drill Techniques D-4T MOUNTING : Utility	CONTRACTOR : Stratacore	DRILLER : LT
DATE STARTED : 13/5/20	DATE COMPLETED : 14/5/20	DATE LOGGED : 14/5/20
LOGGED BY : JF	CHECKED BY : BS	

DRILLING			MATERIAL				NATURAL FRACTURES	
PROGRESS	DEPTH (m)	DESCRIPTION	WEATHERING	ESTIMATED STRENGTH	SPACING (mm)	ADDITIONAL DATA		
DRILLING & CASING	DEPTH	ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, durability, strength, weathering/alteration, defects	WEATHERING	Is(50)MPa Diameter	SPACING (mm)	Defect type, orientation or coating, aperture and thickness		
4% LOSS	15.0	SILTSTONE: dark grey to grey, laminated, with common sandstone and carbonaceous laminations ( <i>continued</i> )	MW SW			15.02-15.06, WSm, 5°, CLAY, 40 mm 15.08-15.12, Jt, 40°, Rf, Un, Cn		
15.39m d=0.31 a=0.4	15.50	15.50m				15.25-15.32, Jt, 70°, Rf, Un, Cn		
11% LOSS	15.5	CORE LOSS 0.11m (15.50-15.61)						
15.78m d=1.04 a=1.1	15.85m	SANDSTONE: fine grained, pale grey, thinly bedded, common carbonaceous fragments	SW					
16.00m a=0.66	16.0	SILTSTONE: dark grey, laminated						
	16.15m	SANDSTONE: grey, laminated to very thinly bedded, rare bioturbation				16.11-16.18, Jt, 60°, Rf, Ir, Cn, Ti		
	16.50	16.37m, becoming siltstone, dark grey, thinly laminated to laminated.						
	16.5	BOREHOLE BH102 TERMINATED AT 16.50 m Target depth						
	17.0							
	17.5							
	18.0							
	18.5							
	19.0							
	19.5							
	20.0							

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AGS\_3\_1 RTA\_1\_1 LIB\_08.1 GHD 2.04.0 GLB Log GHD CORED DRILL HOLE\_AS17 12511195 TOWNSON-BURDEKIN ROAD.GPJ 03/Aug/2020 18:46 10.02.00.04

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**BOREHOLE LOG SHEET**

CLIENT : Transport for NSW	<b>HOLE NO : BH114</b>	
PROJECT : Townson-Burdekin Road Detailed Design - Stage 1 Geotechnical Investigation	SHEET : 2 OF 5	
LOCATION : Marsden Park NSW		
POSITION : E: 300497.1, N: 6267095.3 (MGA94 / 56)	SURFACE RL : 26.62 (AHD)	ANGLE FROM HORIZONTAL: 90°
RIG TYPE : Comacchio Geo205	MOUNTING : Track	CONTRACTOR : Stratacore
		DRILLER : DM
DATE STARTED : 30/1/20	DATE COMPLETED : 31/1/20	DATE LOGGED : 30/1/20
		LOGGED BY : KAD
		CHECKED BY : BS

DRILLING					MATERIAL					Installation Type					
DRILLING & CASING	WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	SOIL NAME: colour, plasticity, primary particle characteristics, secondary and minor components, zoning (origin) and ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, durability, strength, weathering/alteration, defects	MOISTURE CONDITION	CONSISTENCY	RELATIVE DENSITY	STRUCTURE & Other Observations	Piezometer Log Details	Components	
															PROGRESS
	N/A				5.0		CH	CLAY: pale grey mottled orange-brown, high plasticity, trace sand, w<PL, with bands of extremely weathered siltstone	M	H					
				6.00m SPT 23, 30/100mm N=R	6.0			SILTSTONE: grey and grey-brown with orange-brown, thinly laminated, extremely weathered, very low strength, with beds of hard clay (weathered rock)				WEATHERED ROCK			
				6.25m	6.20m			Continued as Cored Drill Hole				6.00: SPT Recovery: 0.25 m 6.00: - 6.25m HP In-situ >600 kPa			
					7.0										
					8.0										
					9.0										
					10.0										

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**12511195**



**CORE LOG SHEET**

CLIENT : Transport for NSW  
 PROJECT : Townson-Burdekin Road Detailed Design - Stage 1 Geotechnical Investigation  
 LOCATION : Marsden Park NSW

**HOLE NO : BH114**

SHEET : 3 OF 5

POSITION : E: 300497.1, N: 6267095.3 (MGA94 / 56) SURFACE RL : 26.62 (AHD) ANGLE FROM HORIZONTAL: 90°

RIG TYPE : Comacchio Geo205 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : DM

DATE STARTED : 30/1/20 DATE COMPLETED : 31/1/20 DATE LOGGED : 30/1/20 LOGGED BY : KAD CHECKED BY : BS

DRILLING				MATERIAL				NATURAL FRACTURES														
PROGRESS	LOSS	SAMPLES & FIELD TESTS	DEPTH/RL (m)	DESCRIPTION	WEATHERING	ESTIMATED STRENGTH	SPACING (mm)	ADDITIONAL DATA														
DRILLING & CASING	WATER	CORE LOSS (DRILL DEPTH)	GRAPHIC LOG	ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, durability, strength, weathering/alteration, defects	WEATHERING	Is(50)MPa ● Axial ○ Diametral	20 40 100 300 1000	Defect type, orientation, roughness and shape, composition or coating, aperture and thickness														
DRILLING & CASING	WATER	CORE LOSS (DRILL DEPTH)	DEPTH/RL (m)	DESCRIPTION	WEATHERING	Is(50)MPa ● Axial ○ Diametral	20 40 100 300 1000	Defect type, orientation, roughness and shape, composition or coating, aperture and thickness														
			5.0																			
			5.5																			
			6.0																			
			6.20m	START CORING AT 6.20m																		
		24% LOSS SPT 23, 30/100mm N=R 6.25m	6.20m	INTERLAMINATED SILTSTONE AND SANDSTONE: siltstone is grey to dark grey and orange-brown, thinly laminated; sandstone is fine grained	HW																	
			6.5																			
			6.5	6.82-6.91m, dark grey carbonaceous siltstone band.	XW - HW																	
			6.5	7.15m																		
			6.5	CORE LOSS 0.31m (7.15-7.46)																		
			6.5	7.46m																		
		11% LOSS 7.62m 7.66m a=0.11 d=0.08 a=0.13	7.46	SILTSTONE: dark grey stained orange-brown, thinly laminated	HW																	
			7.5	7.80-7.85m, some medium rounded gravel clasts.																		
			7.5	8.32m																		
			7.5	CORE LOSS 0.28m (8.52-8.80)																		
			7.5	8.80m																		
		10% LOSS 8.65	8.5	SILTSTONE: dark grey with minor orange-brown staining, thinly laminated	XW																	
			8.5	9.0																		
			8.5	9.61m																		
			8.5	10.00m																		
			10.0																			

AGS\_3\_1 RTA\_1\_1 LIB\_08.1 GHD 2.04.0 GLB Log GHD CORED DRILL HOLE\_AS17 12511195 TOWNSON-BURDEKIN ROAD.GPJ 03/Aug/2020 19:29 10.02.00.04

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**CORE LOG SHEET**

CLIENT : Transport for NSW  
 PROJECT : Townson-Burdekin Road Detailed Design - Stage 1 Geotechnical Investigation  
 LOCATION : Marsden Park NSW

**HOLE NO : BH114**

SHEET : 4 OF 5

POSITION : E: 300497.1, N: 6267095.3 (MGA94 / 56) SURFACE RL : 26.62 (AHD) ANGLE FROM HORIZONTAL: 90°

RIG TYPE : Comacchio Geo205 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : DM

DATE STARTED : 30/1/20 DATE COMPLETED : 31/1/20 DATE LOGGED : 30/1/20 LOGGED BY : KAD CHECKED BY : BS

DRILLING			MATERIAL				NATURAL FRACTURES	
PROGRESS	LOSS	SAMPLES & FIELD TESTS	DEPTH/RL (m)	DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50)MPa ● Axial ○ Diametral	SPACING (mm)	ADDITIONAL DATA (joints, partings, seams, zones and veins) Defect type, orientation, roughness and shape, composition or coating, aperture and thickness
DRILLING & CASING	WATER							
	10.08		10.0	SILTSTONE: dark grey, thinly laminated	HW			
	2% LOSS				XW			10.08-10.32, WSm, CLAY/ XW Rock, 240 mm
			10.5		HW			
		10.67m d=0.26 a=0.25			MW			10.40, Pt, 5°, Rf, Pln, Cn, Cl
					SW			
			11.0					10.77-10.78, WSm, 0°, Pln, CLAY
			11.5	SANDSTONE: fine to medium grained, grey				10.99, Pt, 20°, Rf, Pln, CLAY Ve, Cl
		11.51m d=0.09 a=0.23						11.12, Pt, 5°, Rf, Pln, Cn, Cl
			11.75	SILTSTONE: dark grey with grey, thinly laminated				11.46, Pt, 0°, Rf, Pln, Cn, Cl
	5% LOSS							11.89, Pt, 15°, Rf, Pln, Cn, Cl
			12.0					12.00, Pt, 0°, Rf, Pln, Cn, Op
								12.03, Pt, 0°, Rf, Pln, Cn, Op
			12.5	INTERLAMINATED SILTSTONE AND SANDSTONE: siltstone is dark grey and grey, thinly laminated; sandstone is fine grained	SW			12.05-12.07, WSm, 0°, XW Rock, 20 mm
		12.55m a=0.16						12.23, WSm, 0°, Rf, Pln, CLAY Ve, 12 mm
			13.0	CORE LOSS 0.08m (13.00-13.08)				12.25-12.27, WSm, 0°, Pln, CLAY / XW Rock, 20 mm
			13.25	INTERLAMINATED SILTSTONE AND SANDSTONE: siltstone is dark grey and grey, thinly laminated; sandstone is fine grained	SW			
	10% LOSS							13.40, WSm, 0°, XW Rock, 5 mm
			13.5					13.42, WSm, 0°, XW Rock, 30 mm
		13.60m d=0.08 a=0.35						13.66, Pt, 0°, Rf, Un, Cn, Op
			14.0					13.83, Pt, 0°, Rf, Un, Cn, Op
			14.5	INTERLAMINATED SILTSTONE AND SANDSTONE: siltstone is grey and dark grey, thinly laminated; sandstone is fine grained	SW			14.00, WSm, 0°, XW Rock
	0% LOSS							14.07, Pt, 0°, Rf, Pln, Cn, Cl
		14.73m d=0.36 a=0.3						14.12, WSm, 0°, XW Rock, 15 mm

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AGS 3 - RTA 1 - 1.LIB.08.1.GHD.2.04.0.GLB.Log.GHD.CORED.DRILL.HOLE\_AS17.12511195.TOWNSON-BURDEKIN.ROAD.GPJ.03/AUG/2020.19:29.10.02.00.04

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**CORE LOG SHEET**

CLIENT : Transport for NSW	<b>HOLE NO : BH114</b>	
PROJECT : Townson-Burdekin Road Detailed Design - Stage 1 Geotechnical Investigation	SHEET : 5 OF 5	
LOCATION : Marsden Park NSW	POSITION : E: 300497.1, N: 6267095.3 (MGA94 / 56)	SURFACE RL : 26.62 (AHD)
RIG TYPE : Comacchio Geo205	MOUNTING : Track	CONTRACTOR : Stratacore
DRILLER : DM	DATE STARTED : 30/1/20	DATE COMPLETED : 31/1/20
DATE LOGGED : 30/1/20	LOGGED BY : KAD	CHECKED BY : BS

DRILLING			MATERIAL			NATURAL FRACTURES		
PROGRESS	LOSS	DEPTH (m)	DESCRIPTION	WEATHERING	ESTIMATED STRENGTH	SPACING (mm)	ADDITIONAL DATA	
DRILLING & CASING	WATER	DEPTH	ROCK NAME: grain size, colour, fabric and texture, inclusions or minor components, durability, strength, weathering/alteration, defects		Is(50)MPa		Defect type, orientation, roughness and shape, composition or coating, aperture and thickness	
DRILL DEPTH	CORE LOSS (%)	GRAPHIC LOG			Soil: 00 Vf -0.1 L -0.9 M -1 H -3 VH -10 EH		VISUAL	
0% LOSS		15.0	INTERLAMINATED SILTSTONE AND SANDSTONE: siltstone is grey and dark grey, thinly laminated; sandstone is fine grained (continued)	SW				15.17, Pt, 0°, Rf, Pln, Cn, Cl
		15.43m d=0.74 a=0.63						15.47, Pt, 0°, Rf, Pln, Cn, Cl
0% LOSS		15.55		HW				15.58, WSm, 0°, XW Rock, 15 mm
		16.00m	SILTSTONE: dark grey with grey, thinly laminated, with interlaminated fine grained sandstone	SW				15.65, WSm, 0°, XW Rock, 5 mm
		16.66m 16.99m 16.99m d=0.24 d=0.35						15.71, WSm, 0°, XW Rock, CLAY, 15 mm
		16.90m						15.77, WSm, 0°, XW Rock, 30 mm
		17.00m	INTERLAMINATED SILTSTONE AND SANDSTONE: siltstone is dark grey and grey, thinly laminated; sandstone is fine grained					15.95, Pt, 0°, Rf, Cu, Cn, Cl
		17.25m						15.99, Pt, 20°, Rf, Pln, Cn, Cl
		17.25m	BOREHOLE BH114 TERMINATED AT 17.25 m Target depth					16.06, Pt, 10°, Rf, Pln, CLAY Co, Cl
								16.11, Pt, 30°, Rf, Pln, Cn, Cl
								16.19, Pt, 0°, Rf, Pln, CLAY Ve, Cl
								16.30, WSm, 0°, XW Rock, 25 mm
								16.34, WSm, 0°, XW Rock, CLAY, 35 mm
								16.45, WSm, 0°, Pln, CLAY, 5 mm, Ti
								16.75, Pt, 0°, Rf, Pln, CLAY Ve, Cl
								16.92, Pt, 0°, Rf, Un, Cn, Cl
								16.94, Pt, 0°, Rf, Un, Cn, Cl

AGS\_3\_1 RTA\_1\_1 LIB 08.1 GHD 2.04.0 GLB Log GHD CORED DRILL HOLE\_AS17 12511195 TOWNSON-BURDEKIN ROAD.GPJ 03/Aug/2020 19:29 10.02.00.04

See Standard Sheets for details of abbreviations & basis of descriptions

**GHD**  
 Level 2 29 Christie Street  
 T: St Leonards NSW 2065 Australia F: 61 2 9462 4700 E: 61 2 9462 4710 E: slnmail@ghd.com  
 CONSULTING GEOTECHNICAL ENGINEERING AND GEOTECHNICS

Job No.  
**12511195**

## **Appendix D** – Field sampling records







# Purging and Sampling Record

Bore ID: BH12

Job Information	Sampling Information	Bore Information
Client: <b>Roads and Maritime Services</b>	Purge Method: <u>Micro-purge Peri</u>	SWL: <u>1.775</u> m Logic Check: <u>-</u>
Project: <b>Townson and Burdekin Rd</b>	Sample Method: <u>Peri</u>	Screen: From: <u>-</u> to: <u>-</u> m Stick Up: <u>0</u> m
Proj. No.: <b>12511195</b>	WQ Meter Type: <b>YSI</b>	NAPL Check: <u>-</u> Bore Diam.: <b>50 mm</b>
Sampler: <b>T. Nham</b>	Flow Cell: <b>Y / N</b> Pump Depth: <u>15.0</u> m	Ref.datum: <u>-</u> Well Cap Secure? <u>Y</u>
Date: <u>29/1/2020</u>	WLevel Meter Type: <u>Dip / Fox / Int.Fce / Gge</u>	Bore Depth: <u>11.26</u> m
Round <b>January 2020</b>	Field Filtered? <b>Y / N</b> (filter vessel, <u>disposable filter/syringe</u> )	

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.ppm.)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-	
8:13	1	1.80	0.44	16384	6.55	-42.1	22.0	slightly cloudy, grey, Has odour, no sheen
8:18	2	1.83	0.42	16344	6.52	-132.6	21.9	clear, Has odour, no sheen
8:22	3	1.82	0.76	16327	6.50	-129.4	21.9	" "
8:26	4	1.92	1.11	16208	6.50	-126.1	21.8	" "
8:30	5	1.92	1.52	15725	6.52	-106.5	21.8	" "
8:34	6	1.82	1.66	15411	6.52	-93.6	21.8	" "
8:40	7	1.92	1.71	15265	6.51	-86.8	21.7	" "
Slight Fizzing in vials/preserved org								

<b>Field QA Checks:</b> Air bubbles in vials? <b>Y / N</b> Any violent reactions? <b>Y / N</b> Decontamination as per GHD procedure? <b>Y / N</b> Was sampling equipment pre-cleaned? <b>Y / N</b> COC updated? <b>Y / N</b>	<table border="1"> <thead> <tr> <th>Parameters</th> <th>BTEX</th> <th>TPH</th> <th>PAH</th> <th>CHC</th> <th>PCB</th> <th>OCP</th> <th>OPP</th> <th>Tot. Metal</th> <th>Biol.</th> </tr> </thead> <tbody> <tr> <td>Preservatives</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.	Preservatives									
Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.												
Preservatives																					

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

QCO 1 taken

**Purge Volumes**

Casing Int. Dia (mm) 50 100 150

Vol (L/m of casing) 2.0 7.9 17.7

\*Double for gravel pack





# SURFACE WATER SAMPLING RECORD

PROJECT NO. 12511195 SURFACE WATER ID SW01 / SED01  
 PROJECT NAME Townson and Burdekin Road DATE 29/1/20  
 CLIENT Roads and Maritime Services TIME 9:54am  
 SITE Townson and Burdekin Road, Marsden Park LOGGED BY TN / TF  
 COORDINATES/GPS (if applicable) \_\_\_\_\_  
 SAMPLING METHOD (e.g. grab, bucket) Grab  
 DETAILED SAMPLE LOCATION DESCRIPTION Belt Creek at Townson Rd

ENVIRONMENTAL OBSERVATIONS

WEATHER cloudy

VEGETATION scrub both native/exotic

SLOPE slight slope, stormwater culvert

EROSION yes

OTHER (colour, sheen, odour, turbidity, sediment) SED01, sandy clay, brown, wet, GM plant, fine sand

FIELD MEASUREMENTS

TEMPERATURE (°C) 25.2

pH 7.87

SPC / EC (µS/cm) 955

DO (mg/L) 2.45

REDOX (mV) 57.8

Turbidity (NTU) 617.5 npt/L

HYDROLOGICAL DATA

FLOW MEASUREMENT none

CROSS SECTION WIDTH (m) ~6m

DEPTH (m) ~0.18m to 20cm

OTHER \_\_\_\_\_

SAMPLE NO.	NO. CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
<u>SW01</u>	<u>6</u>		<u>No</u>	
<u>SED01</u>	<u>1+1</u>		<u>QCOR</u>	

FIELD SUPERVISOR \_\_\_\_\_ CHECKED (SIGN & DATE) \_\_\_\_\_



# SURFACE WATER SAMPLING RECORD

PROJECT NO. 12511195 SURFACE WATER ID SW04 / SED04  
 PROJECT NAME Townson and Burdekin Road DATE 29/1/20  
 CLIENT Roads and Maritime Services TIME 1:30pm  
 SITE Townson and Burdekin Road, Marsden Park LOGGED BY TN / TF  
 COORDINATES/GPS (if applicable) \_\_\_\_\_  
 SAMPLING METHOD (e.g. grab, bucket) Grab  
 DETAILED SAMPLE LOCATION DESCRIPTION Eastern Creek near 2406 within Townson Rd approach area

### ENVIRONMENTAL OBSERVATIONS

WEATHER cloudy  
 VEGETATION spars floodplain  
 SLOPE gentle slope  
 EROSION minor erosion pilling  
 OTHER (colour, sheen, odour, turbidity, sediment) clear/cloudy  
SED04, silty clay dle brown very muddy, 6m plat capacity

### FIELD MEASUREMENTS

TEMPERATURE (°C) 27.4  
 pH 7.48  
 SPC / EC (µS/cm) 801  
 DO (mg/L) 7.80  
 REDOX (mV) 19.6  
 Turbidity (~~NFT~~) 500 mg/L

### HYDROLOGICAL DATA

FLOW MEASUREMENT 1-2m/sec  
 CROSS SECTION WIDTH (m) ~5m  
 DEPTH (m) ~0.8m  
 OTHER \_\_\_\_\_

SAMPLE NO.	NO. CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
<u>SW04</u>	<u>1</u>		<u>NO</u>	
<u>SED04</u>	<u>2</u>		<u>NO</u>	

FIELD SUPERVISOR \_\_\_\_\_ CHECKED (SIGN & DATE) \_\_\_\_\_

# Purging and Sampling Record

Bore ID: SH MW102

Job Information	Sampling Information	Bore Information
Client: <b>Roads and Maritime Services</b>	Purge Method: <u>Peri Peri</u>	SWL: <u>1.645</u> m
Project: <b>Townson and Burdekin Rd</b>	Sample Method: <u>Peri</u>	Screen: From:.....to..... m
Proj. No.: <b>12511195</b>	WQ Meter Type: <b>YSI</b>	NAPL Check:.....
Sampler: <b>T. Nham</b>	Flow Cell: <b>Y / N</b>	Ref.datum:.....
Date: <u>25/5/20</u>	Pump Depth: <u>5.0</u> m	Bore Depth: <u>5.92</u> m
Round <b>May 2020</b>	WLevel Meter Type: <b>Dip / Fox / Int.Fce / Gge</b>	Bore Diam.: <b>50 mm</b>
	Field Filtered? <b>Y / N</b> (filter vessel, disposable filter/syringe)	Well Cap Secure? <u>Yes</u>

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-	
11:49	1	1.82	6.74	25672	5.98	62.8	19.1	Clear/Cloudy, no slow sheen
11:52	2	1.97	3.10	25764	6.13	74.3	19.1	"
11:55	3	2.05	2.78	25767	6.21	70.9	19.1	"
11:58	4	2.17	2.36	25812	6.27	68.6	19.1	"
12:01	5	2.30	2.47	25798	6.32	66.7	19.1	"
12:04	6	2.40	2.50	25808	6.35	66.0	19.1	"

<b>Field QA Checks:</b> Air bubbles in vials? Y / <u>N</u> Any violent reactions? Y / <u>N</u> Decontamination as per GHD procedure? Y / <u>N</u> Was sampling equipment pre-cleaned? Y / <u>N</u> COC updated? Y / <u>N</u>	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Parameters</th> <th>BTEX</th> <th>TPH</th> <th>PAH</th> <th>CHC</th> <th>PCB</th> <th>OCP</th> <th>OPP</th> <th>Tot. Metal</th> <th>Biol.</th> </tr> </thead> <tbody> <tr> <td>Preservatives</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.	Preservatives									
Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.												
Preservatives																					

**Comment:** Duplicate samples collected, bottles used, access, condition of headworks etc

5+5 L bottles, Metals filtered DUF = QC101

**Purge Volumes**

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

\*Double for gravel pack

# Purging and Sampling Record

Bore ID: BH114

Job Information	Sampling Information	Bore Information
Client: <b>Roads and Maritime Services</b>	Purge Method: <u>Peri</u>	SWL: <u>2.011</u> m
Project: <b>Townson and Burdekin Rd</b>	Sample Method: <u>Peri</u>	Screen: From:..... to..... m
Proj. No.: <b>12511195</b>	WQ Meter Type: <b>YSI</b>	NAPL Check:.....
Sampler: <b>T. Nham</b>	Flow Cell: <b>Y / N</b>	Ref.datum:.....
Date: <u>25/5/2020</u>	Pump Depth: <u>4.0</u> m	Bore Depth: <u>5.02</u> m
Round <b>May 2020</b>	WLevel Meter Type: <b>Dip / Fox / Int.Fce / Gge</b>	Logic Check:.....
	Field Filtered? <b>Y / N</b> (filter vessel, disposable filter/syringe)	Stick Up: <u>0.82</u> m
		Bore Diam.: <b>50</b> mm
		Well Cap Secure? <u>Yes</u>

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-	
12:42	1	2.34	1.03	2651	6.65	29.2	18.2	Real cloudy, no odor / sheen
12:46	2	2.43	0.86	3331	6.41	25.3	18.2	"
12:49	3	2.48	0.60	5236	6.23	17.6	18.2	"
12:52	4	2.51	0.55	9006	6.20	-24.3	18.4	"
12:56	5	2.59	0.50	11823	6.12	-74.2	18.4	"
12:59	6	2.62	0.44	13569	5.99	-28.0	18.4	"
1:02	7	2.65	0.40	14498	5.95	-15.9	18.4	"
1:05	8	2.68	0.39	14691	5.94	-13.9	18.4	"
1:08	9	2.72	0.38	14720	5.93	-12.5	18.4	"

<b>Field QA Checks:</b> Air bubbles in vials? <b>Y / N</b> Any violent reactions? <b>Y / N</b> Decontamination as per GHD procedure? <b>Y / N</b> Was sampling equipment pre-cleaned? <b>Y / N</b> COC updated? <b>Y / N</b>	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Parameters</th> <th>BTEX</th> <th>TPH</th> <th>PAH</th> <th>CHC</th> <th>PCB</th> <th>OCP</th> <th>OPP</th> <th>Tot. Metal</th> <th>Biol.</th> <th> </th> <th> </th> <th> </th> <th> </th> </tr> </thead> <tbody> <tr> <td>Preservatives</td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.					Preservatives													
Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.																				
Preservatives																													

**Comment:** Duplicate samples collected, bottles used, access, condition of headworks etc  
5 Ltr H<sub>2</sub>O, Metals Attached

**Purge Volumes**

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

\*Double for gravel pack

## **Appendix E** – Equipment calibration records

PID Calibration Certificate



Instrument **PhoCheck Tiger**  
 Serial No. **T-111092**

Air-Met Scientific Pty Ltd  
 1300 137 067

Item	Test	Pass	Comments			
Battery	Charge Condition	✓				
	Fuses	✓				
	Capacity	✓				
	Recharge OK?	✓				
Switch/keypad	Operation	✓				
Display	Intensity	✓				
	Operation (segments)	✓				
Grill Filter	Condition	✓				
	Seal	✓				
Pump	Operation	✓				
	Filter	✓				
	Flow	✓				
	Valves, Diaphragm	✓				
PCB	Condition	✓				
Connectors	Condition	✓				
Sensor	PID	✓	10.6 ev			
Alarms	Beeper	✓	Low	High	TWA	STEL
	Settings	✓	50ppm	100ppm		
Software	Version	✓				
Data logger	Operation	✓				
Download	Operation	✓				
Other tests:						

**Certificate of Calibration**

This is to certify that the above instrument has been calibrated to the following specifications:

Diffusion mode      Aspirated mode

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No	Instrument Reading
PID Lamp		92 ppm isobutylene	NATA	SY245	92.8ppm

Calibrated by: *K. Boardman*      **Kylie Boardman**

Calibration date:                      **2/08/2019**

Next calibration due:                      **29/01/2020**

## PID Calibration Certificate

Instrument **PhoCheck Tiger**  
Serial No. **T-114176**



Air-Met Scientific Pty Ltd  
1300 137 067

Item	Test	Pass	Comments			
Battery	Charge Condition	✓				
	Fuses	✓				
	Capacity	✓				
	Recharge OK?	✓				
Switch/keypad	Operation	✓				
Display	Intensity	✓				
	Operation (segments)	✓				
Grill Filter	Condition	✓				
	Seal	✓				
Pump	Operation	✓				
	Filter	✓				
	Flow	✓				
	Valves, Diaphragm	✓				
PCB	Condition	✓				
Connectors	Condition	✓				
Sensor	PID	✓	10.6 ev			
Alarms	Beeper	✓	Low	High	TWA	STEL
	Settings	✓	50ppm	100ppm		
Software	Version	✓				
Data logger	Operation	✓				
Download	Operation	✓				
Other tests:						

### Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		92ppm Isobutylene	NATA	SY245		94.0ppm

Calibrated by:  Kylie Boardman

Calibration date: 12/08/2019

Next calibration due: 8/02/2020

## PID Calibration Certificate



Instrument **PhoCheck Tiger**  
Serial No. **T-105524**

Air-Met Scientific Pty Ltd  
1300 137 067

Item	Test	Pass	Comments			
Battery	Charge Condition	✓				
	Fuses	✓				
	Capacity	✓				
	Recharge OK?	✓				
Switch/keypad	Operation	✓				
	Display	Intensity	✓			
Grill Filter	Operation	✓				
	Condition	✓				
Pump	Seal	✓				
	Operation	✓				
PCB	Filter	✓				
	Condition	✓				
Connectors	Flow	✓				
	Condition	✓				
Sensor	Valves, Diaphragm	✓				
	PID	✓	10.6eV Lamp			
Alarms	Beeper	✓	Low	High	TWA	STEL
	Settings	✓	50ppm	100ppm	N/A	N/A
Software	Version	✓				
Data logger	Operation	✓				
Download	Operation	✓				
Other tests:						

### Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Calibration gas and concentration	Certified	Gas bottle No	Instrument Reading
PID Lamp	92ppm Isobutylene	NATA	SY245	91.5ppm

Calibrated by:  Kylie Boardman

Calibration date: 16/08/2019

Next calibration due: 15/09/2019



## PID Calibration Certificate



Instrument **PhoCheck Tiger**  
 Serial No. **T-105891**

Air-Met Scientific Pty Ltd  
 1300 137 067

Item	Test	Pass	Comments			
Battery	Charge Condition	✓				
	Fuses	✓				
	Capacity	✓				
	Recharge OK?	✓				
Switch/keypad	Operation	✓				
Display	Intensity	✓				
	Operation (segments)	✓				
Grill Filter	Condition	✓				
	Seal	✓				
Pump	Operation	✓				
	Filter	✓				
	Flow	✓				
	Valves, Diaphragm	✓				
PCB	Condition	✓				
Connectors	Condition	✓				
Sensor	PID	✓	10.6 ev			
Alarms	Beeper	✓	Low	High	TWA	STEL
	Settings	✓	50ppm	100ppm		
Software	Version	✓				
Data logger	Operation	✓				
Download	Operation					
Other tests:			Readings are stable at higher ranges			

### Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No	Instrument Reading
PID Lamp		92ppm Isobutylene	NATA	SY245	91.2ppm

Calibrated by: Sarah Lian Sarah Lian

Calibration date: **21/08/2019**

Next calibration due: **17/02/2020**

## PID Calibration Certificate



Instrument **PhoCheck Tiger**  
 Serial No. **T-114176**

Air-Met Scientific Pty Ltd  
 1300 137 067

Item	Test	Pass	Comments			
Battery	Charge Condition	✓				
	Fuses	✓				
	Capacity	✓				
	Recharge OK?	✓				
Switch/keypad	Operation	✓				
Display	Intensity	✓				
	Operation (segments)	✓				
Grill Filter	Condition	✓				
	Seal	✓				
Pump	Operation	✓				
	Filter	✓				
	Flow	✓				
	Valves, Diaphragm	✓				
PCB	Condition	✓				
Connectors	Condition	✓				
Sensor	PID	✓	10.6 ev			
Alarms	Beeper	✓	Low	High	TWA	STEL
	Settings	✓	50ppm	100ppm		
Software	Version	✓				
Data logger	Operation	✓				
Download	Operation	✓				
Other tests:						

### Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No	Instrument Reading
PID Lamp		92ppm Isobutylene	NATA	SY245	92.4ppm

Calibrated by: Sen Philip

Calibration date: **26/08/2019**

Next calibration due: **22/02/2020**

## PID Calibration Certificate



airmet

Air-Met Scientific Pty Ltd  
1300 137 067

Instrument **PhoCheck Tiger**  
Serial No. **T-114176**

Item	Test	Pass	Comments			
Battery	Charge Condition	✓				
	Fuses	✓				
	Capacity	✓				
	Recharge OK?	✓				
Switch/keypad	Operation	✓				
Display	Intensity	✓				
	Operation (segments)	✓				
Grill Filter	Condition	✓				
	Seal	✓				
Pump	Operation	✓				
	Filter	✓				
	Flow	✓				
	Valves, Diaphragm	✓				
PCB	Condition	✓				
Connectors	Condition	✓				
Sensor	PID	✓	10.6 ev			
Alarms	Beeper	✓	Low	High	TWA	STEL
	Settings	✓	50ppm	100ppm		
Software	Version	✓				
Data logger	Operation	✓				
Download	Operation	✓				
Other tests:						

### Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		92ppm Isobutylene	NATA	SY245		90.6ppm

Calibrated by: Sarah Lian Sarah Lian

Calibration date: 4/09/2019

Next calibration due: 2/03/2020

## Multi Parameter Water Meter



airmet

Air-Met Scientific Pty Ltd  
1300 137 067Instrument **YSI Quatro Pro Plus**  
Serial No. **10E101052**

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

**Certificate of Calibration**

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 10.00		pH 10.00		324189	pH 9.69
2. pH 7.00		pH 7.00		320613	pH 7.05
3. pH 4.00		pH 4.00		330734	pH 3.97
4. mV		234.0mV		337308/338782	233.7mV
5. EC		2.76mS		333787	2.77mS
6. D.O		0.00ppm		329994	0.01ppm
7. Temp		20.6°C		MultiTherm	20.0°C

Calibrated by: \_\_\_\_\_ Sen Philip

Calibration date: 24/01/2020

Next calibration due: 23/02/2020

**Oil / Water Interface Meter**

Instrument      Interface Meter (30M)  
 Serial No.      348896



**airmet**

Air-Met Scientific Pty Ltd  
 1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	

**Certificate of Calibration**

This is to certify that the above instrument has been cleaned and tested.

**Calibrated by:** \_\_\_\_\_ Sarah Lian

**Calibration date:** 22/01/2020

**Next calibration due:** 22/03/2020

## **Appendix F** – Results tables

















Table F1 - Soil Analytical Results - Human Health Guidelines

Table with 42 columns (Phenols and OC Pesticides) and rows including EQI, NEPM 2013 Table 1A(1) HIL D Comm/Ind, NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Sand, depth ranges (0-1m, 1-2m, 2-4m, >4m), and PFAS NEMP 2018 Health Industrial/Commercial.

Main data table with columns: Field\_ID, Location\_Code, Sample\_Depth\_Range, Sampled\_Date\_Time, Sample\_Type, Lab\_Report\_Numb, and 42 columns of analytical results.





Table F1 - Soil Analytical Results - Human Health Guidelines

Main analytical results table with columns for Phenols and OC Pesticides, including chemical names and mg/kg values. Includes summary rows for EQ, NEPM 2013 Table 1A(1) HIL D Comm/Ind, and NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Sand.

Summary table with columns: Field\_ID, Location\_Code, Sample\_Depth\_Range, Sampled\_Date\_Time, Sample\_Type, Lab\_Report\_Numb, and 31 data columns for various chemical concentrations.



Table F1 - Soil Analytical Results - Human Health Guidelines

	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1
NEPM 2013 Table 1A(1) HIL D Comm/Ind		100				50		80	2500	160
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Sand										
0-1m										
1-2m										
2-4m										
>4m										
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil										
PFAS NEMP 2018 Health Industrial/Commercial										

Field_ID	Location_Code	Sample_Depth_Range	Sampled_Date_Time	Sample_Type	Lab_Report_Numb									
BH02_0.1-0.2	BH02	0.1-0.2	7/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
BH02_0.4-0.5	BH02	0.4-0.5	7/08/2019	Normal	671060	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
BH02_1.2-1.3	BH02	1.2-1.3	7/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
BH02_2.1-2.2	BH02	2.1-2.2	7/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
BH03_0.1-0.2	BH03	0.1-0.2	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
BH03_0.3-1.0	BH03	0.3-1	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
BH04_0.1-0.2	BH04	0.1-0.2	9/08/2019	Normal	671060	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
BH04_0.4-0.5	BH04	0.4-0.5	9/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
BH06_0.0-0.2	BH06	0-0.2	23/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
BH06_0.8-1.0	BH06	0.8-1	23/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH07_0.0-0.1	BH07	0-0.1	19/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
BH07_0.5-0.6	BH07	0.5-0.6	19/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH07_1.0-1.1	BH07	1-1.1	19/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH07_2.9-3.0	BH07	2.9-3	19/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH07_3.9-4.0	BH07	3.9-4	19/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH08_0.3-0.5	BH08	0.3-0.5	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH08_0.8-1.0	BH08	0.8-1	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH08_0-0.2	BH08	0-0.2	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH09_0-0.2	BH09	0-0.2	21/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
BH09_1.5-1.7	BH09	1.5-1.7	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH10_0.07-0.2	BH10	0.07-0.2	20/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
BH10_0.2-0.45	BH10	0.2-0.45	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH10_0.9-1.0	BH10	0.9-1	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH11_0.0-0.2	BH11	0-0.2	27/08/2019	Normal	673957	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
BH11_0.8-1.0	BH11	0.8-1	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
BH12_0.4_0.5	BH12	0.4-0.5	4/09/2019	Normal	675299	-	-	-	-	-	-	-	-	-
BH12_0_0.1	BH12	0-0.1	4/09/2019	Normal	675299	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
BH12_1.9_2.0	BH12	1.9-2	4/09/2019	Normal	675299	-	-	-	-	-	-	-	-	-
BH13_0.0-0.2	BH13	0-0.2	26/08/2019	Normal	673957	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
BH13_0.3-0.5	BH13	0.3-0.5	26/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
BH13_0.8-1.0	BH13	0.8-1	26/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
DUP_011	TP01	0.1-0.2	27/08/2019	Field_D	673957	-	-	-	-	-	-	-	-	-
FD01_190827	BH11	0-0.2	27/08/2019	Field_D	673957	-	-	-	-	-	-	-	-	-
FD02_200819	TP23	1.45-1.5	20/08/2019	Field_D	673140	-	-	-	-	-	-	-	-	-
FD03_200819	TP21	0-0.1	20/08/2019	Field_D	673140	-	-	-	-	-	-	-	-	-
FD03_210819	BH09	1.5-1.7	21/08/2019	Field_D	673140	-	-	-	-	-	-	-	-	-
PC01_0.5-0.8	PC01	0.5-0.8	26/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
PC01_1.1	PC01	1.1	26/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
PC01_1.5	PC01	1.5	26/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
PC02_0.16-0.25	PC02	0.16-0.25	5/08/2019	Normal	671060	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
PC02_0.5-0.6	PC02	0.5-0.6	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
PC03_0.3-0.5	PC03	0.3-0.5	5/08/2019	Normal	671060	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
PC03_0.7-0.9	PC03	0.7-0.9	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-





Table F1 - Soil Analytical Results - Human Health Guidelines

	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1
NEPM 2013 Table 1A(1) HIL D Comm/Ind		100				50		80	2500	160
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Sand										
0-1m										
1-2m										
2-4m										
>4m										
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil										
PFAS NEMP 2018 Health Industrial/Commercial										

Field ID	Location Code	Sample Depth Range	Sampled Date Time	Sample Type	Lab Report Numb	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene
PC04_0.2-0.3	PC04	0.2-0.3	5/08/2019	Normal	671060	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
PC04_0.5-0.7	PC04	0.5-0.7	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-	-
PC05_0.16-0.3	PC05	0.16-0.3	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-	-
PC05_0.45-0.6	PC05	0.45-0.6	6/08/2019	Normal	671060	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
PC05_0.6-1.0	PC05	0.6-1	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-	-
PC06_0.3-0.5	PC06	0.3-0.5	28/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-	-
PC06_0.8-0.9	PC06	0.8-0.9	28/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-	-
PC07_0.4-0.5	PC07	0.4-0.5	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-
PC07_0.6-0.7	PC07	0.6-0.7	15/08/2019	Normal	672730	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
PC08_0.34-0.44	PC08	0.34-0.44	15/08/2019	Normal	672730	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
PC08_0.45-0.55	PC08	0.45-0.55	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-
PC08_0.7-0.8	PC08	0.7-0.8	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-
PC09_0.3-0.41	PC09	0.3-0.41	15/08/2019	Normal	672730	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
PC09_0.5-0.6	PC09	0.5-0.6	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-
PC09_0.8-0.9	PC09	0.8-0.9	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-
PC10_0.15-0.2	PC10	0.15-0.2	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-
PC10_0.5-0.6	PC10	0.5-0.6	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-
PC10_0.9-1.0	PC10	0.9-1	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-
QC01	TP03	0-0.1	5/08/2019	Field_D	671060	-	-	-	-	-	-	-	-	-	-
QC02	SED01		29/01/2020	Field_D	699019	-	-	-	-	-	-	-	-	-	-
QC02	TP09	0-0.1	6/08/2019	Field_D	671060	-	-	-	-	-	-	-	-	-	-
QC04	BH02	1.2-1.3	7/08/2019	Field_D	671060	-	-	-	-	-	-	-	-	-	-
QC05	BH04	0.4-0.5	9/08/2019	Field_D	671060	-	-	-	-	-	-	-	-	-	-
QC07	PC09	0.5-0.6	15/08/2019	Field_D	672730	-	-	-	-	-	-	-	-	-	-
QC09	TP17	0-0.1	19/08/2019	Field_D	673140	-	-	-	-	-	-	-	-	-	-
QC11	BH06	0-0.2	23/08/2019	Field_D	673140	-	-	-	-	-	-	-	-	-	-
SED01	SED01		29/01/2020	Normal	699019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SED04	SED04		29/01/2020	Normal	699019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP01_0.1-0.2	TP01	0.1-0.2	27/08/2019	Normal	673957	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP01_0.4-0.5	TP01	0.4-0.5	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-	-
TP01_0.9-1.0	TP01	0.9-1	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-	-
TP02_0.4-0.5	TP02	0.4-0.5	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-	-
TP02_0-0.1	TP02	0-0.1	5/08/2019	Normal	671060	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP03_0.2-0.4	TP03	0.2-0.4	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-	-
TP03_0-0.1	TP03	0-0.1	5/08/2019	Normal	671060	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP04_0.1-0.2	TP04	0.1-0.2	27/08/2019	Normal	673957	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP04_0.9-1.0	TP04	0.9-1	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-	-
TP07_0.1-0.2	TP07	0.1-0.2	28/08/2019	Normal	673957	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP07_0.2-0.3	TP07	0.2-0.3	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-	-
TP07_0.5-0.7	BH07	0.5-0.7	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-	-
TP08_0.0-0.1	TP08	0-0.1	6/08/2019	Normal	671060	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP08_0.2-0.3	TP08	0.2-0.3	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-	-
TP09_0.5-0.6	TP09	0.5-0.6	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-	-



Table F1 - Soil Analytical Results - Human Health Guidelines

	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1
NEPM 2013 Table 1A(1) HIL D Comm/Ind		100				50		80	2500	160
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Sand										
0-1m										
1-2m										
2-4m										
>4m										
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil										
PFAS NEMP 2018 Health Industrial/Commercial										

Field_ID	Location_Code	Sample_Depth_Range	Sampled_Date_Time	Sample_Type	Lab_Report_Numb	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene
TP09_0-0.1	TP09	0-0.1	6/08/2019	Normal	671060	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP10_0.1-0.2	TP10	0.1-0.2	6/08/2019	Normal	671060	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP10_0.5-0.6	TP10	0.5-0.6	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-	-
TP12_0.4-0.5	TP12	0.4-0.5	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP12_0-0.2	TP12	0-0.2	22/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP13_0.8-0.9	TP13	0.8-0.9	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP13_0-0.2	TP13	0-0.2	21/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP14_0.9-1.2	TP14	0.9-1.2	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP14_0-0.2	TP14	0-0.2	21/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP14_1.4-1.5	TP14	1.4-1.5	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP15_0.0-0.2	TP15	0-0.2	23/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP15_0.2-0.4	TP15	0.2-0.4	23/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP15_0.5-0.6	TP15	0.5-0.6	23/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP15_0.7-0.9	TP15	0.7-0.9	23/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP16_0-0.2	TP16	0-0.2	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP16_1.4-1.5	TP16	1.4-1.5	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP17_0.0-0.1	TP17	0-0.1	19/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP17_0.5-0.6	TP17	0.5-0.6	19/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP18_0.4-0.5	TP18	0.4-0.5	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP18_0-0.1	TP18	0-0.1	21/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP19_0.5-0.6	TP19	0.5-0.6	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP19_0-0.2	TP19	0-0.2	21/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP20_0.4-0.5	TP20	0.4-0.5	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP20_0-0.1	TP20	0-0.1	21/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP21_0.4-0.5	TP21	0.4-0.5	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP21_0.9-1.0	TP21	0.9-1	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP21_0-0.1	TP21	0-0.1	20/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP21_1.4-1.5	TP21	1.4-1.5	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP22_0.4-0.5	TP22	0.4-0.5	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP22_0-0.1	TP22	0-0.1	21/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP22_1.5-1.6	TP22	1.5-1.6	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP23_0.8-0.9	TP23	0.8-0.9	20/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP23_1.45-1.5	TP23	1.45-1.5	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP24_0-0.1	TP24	0-0.1	20/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP24_1.5-1.6	TP24	1.5-1.6	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP25_0.3-0.4	TP25	0.3-0.4	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-
TP25_0-0.2	TP25	0-0.2	20/08/2019	Normal	673140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
TP25_1.5-1.6	TP25	1.5-1.6	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-	-









Table F1 - Soil Analytical Results - Human Health Guidelines

	PCBs								Herbicides
	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)	Dinoseb
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	20
NEPM 2013 Table 1A(1) HIL D Comm/Ind								7	
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Sand									
0-1m									
1-2m									
2-4m									
>4m									
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil									
PFAS NEMP 2018 Health Industrial/Commercial									

Field_ID	Location_Code	Sample_Depth_Range	Sampled_Date_Time	Sample_Type	Lab_Report_Numb									
BH02_0.1-0.2	BH02	0.1-0.2	7/08/2019	Normal	671060	-	-	-	-	-	-	-	-	<20
BH02_0.4-0.5	BH02	0.4-0.5	7/08/2019	Normal	671060	-	-	-	-	-	-	-	-	<20
BH02_1.2-1.3	BH02	1.2-1.3	7/08/2019	Normal	671060	-	-	-	-	-	-	-	-	<20
BH02_2.1-2.2	BH02	2.1-2.2	7/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
BH03_0.1-0.2	BH03	0.1-0.2	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	<20
BH03_0.3-1.0	BH03	0.3-1	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
BH04_0.1-0.2	BH04	0.1-0.2	9/08/2019	Normal	671060	-	-	-	-	-	-	-	-	<20
BH04_0.4-0.5	BH04	0.4-0.5	9/08/2019	Normal	671060	-	-	-	-	-	-	-	-	<20
BH06_0.0-0.2	BH06	0-0.2	23/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
BH06_0.8-1.0	BH06	0.8-1	23/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH07_0.0-0.1	BH07	0-0.1	19/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH07_0.5-0.6	BH07	0.5-0.6	19/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
BH07_1.0-1.1	BH07	1-1.1	19/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH07_2.9-3.0	BH07	2.9-3	19/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH07_3.9-4.0	BH07	3.9-4	19/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH08_0.3-0.5	BH08	0.3-0.5	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH08_0.8-1.0	BH08	0.8-1	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH08_0-0.2	BH08	0-0.2	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH09_0-0.2	BH09	0-0.2	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
BH09_1.5-1.7	BH09	1.5-1.7	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH10_0.07-0.2	BH10	0.07-0.2	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
BH10_0.2-0.45	BH10	0.2-0.45	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH10_0.9-1.0	BH10	0.9-1	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
BH11_0.0-0.2	BH11	0-0.2	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	<20
BH11_0.8-1.0	BH11	0.8-1	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
BH12_0.4_0.5	BH12	0.4-0.5	4/09/2019	Normal	675299	-	-	-	-	-	-	-	-	-
BH12_0_0.1	BH12	0-0.1	4/09/2019	Normal	675299	-	-	-	-	-	-	-	-	-
BH12_1.9_2.0	BH12	1.9-2	4/09/2019	Normal	675299	-	-	-	-	-	-	-	-	-
BH13_0.0-0.2	BH13	0-0.2	26/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
BH13_0.3-0.5	BH13	0.3-0.5	26/08/2019	Normal	673957	-	-	-	-	-	-	-	-	<20
BH13_0.8-1.0	BH13	0.8-1	26/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
DUP_011	TP01	0.1-0.2	27/08/2019	Field_D	673957	-	-	-	-	-	-	-	-	-
FD01_190827	BH11	0-0.2	27/08/2019	Field_D	673957	-	-	-	-	-	-	-	-	-
FD02_200819	TP23	1.45-1.5	20/08/2019	Field_D	673140	-	-	-	-	-	-	-	-	-
FD03_200819	TP21	0-0.1	20/08/2019	Field_D	673140	-	-	-	-	-	-	-	-	-
FD03_210819	BH09	1.5-1.7	21/08/2019	Field_D	673140	-	-	-	-	-	-	-	-	-
PC01_0.5-0.8	PC01	0.5-0.8	26/08/2019	Normal	673957	-	-	-	-	-	-	-	-	<20
PC01_1.1	PC01	1.1	26/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
PC01_1.5	PC01	1.5	26/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
PC02_0.16-0.25	PC02	0.16-0.25	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	<20
PC02_0.5-0.6	PC02	0.5-0.6	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
PC03_0.3-0.5	PC03	0.3-0.5	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	<20
PC03_0.7-0.9	PC03	0.7-0.9	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-



Table F1 - Soil Analytical Results - Human Health Guidelines

	PCBs								Herbicides
	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)	Dinoseb
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	20
NEPM 2013 Table 1A(1) HIL D Comm/Ind								7	
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Sand									
0-1m									
1-2m									
2-4m									
>4m									
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil									
PFAS NEMP 2018 Health Industrial/Commercial									

Field_ID	Location_Code	Sample_Depth_Range	Sampled_Date_Time	Sample_Type	Lab_Report_Numb									
PC04_0.2-0.3	PC04	0.2-0.3	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	<20
PC04_0.5-0.7	PC04	0.5-0.7	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
PC05_0.16-0.3	PC05	0.16-0.3	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
PC05_0.45-0.6	PC05	0.45-0.6	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	<20
PC05_0.6-1.0	PC05	0.6-1	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
PC06_0.3-0.5	PC06	0.3-0.5	28/08/2019	Normal	673957	-	-	-	-	-	-	-	-	<20
PC06_0.8-0.9	PC06	0.8-0.9	28/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
PC07_0.4-0.5	PC07	0.4-0.5	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	<20
PC07_0.6-0.7	PC07	0.6-0.7	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-
PC08_0.34-0.44	PC08	0.34-0.44	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	<20
PC08_0.45-0.55	PC08	0.45-0.55	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-
PC08_0.7-0.8	PC08	0.7-0.8	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-
PC09_0.3-0.41	PC09	0.3-0.41	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	<20
PC09_0.5-0.6	PC09	0.5-0.6	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-
PC09_0.8-0.9	PC09	0.8-0.9	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-
PC10_0.15-0.2	PC10	0.15-0.2	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	<20
PC10_0.5-0.6	PC10	0.5-0.6	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-
PC10_0.9-1.0	PC10	0.9-1	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-
QC01	TP03	0-0.1	5/08/2019	Field_D	671060	-	-	-	-	-	-	-	-	-
QC02	SED01		29/01/2020	Field_D	699019	-	-	-	-	-	-	-	-	-
QC02	TP09	0-0.1	6/08/2019	Field_D	671060	-	-	-	-	-	-	-	-	-
QC04	BH02	1.2-1.3	7/08/2019	Field_D	671060	-	-	-	-	-	-	-	-	-
QC05	BH04	0.4-0.5	9/08/2019	Field_D	671060	-	-	-	-	-	-	-	-	-
QC07	PC09	0.5-0.6	15/08/2019	Field_D	672730	-	-	-	-	-	-	-	-	-
QC09	TP17	0-0.1	19/08/2019	Field_D	673140	-	-	-	-	-	-	-	-	-
QC11	BH06	0-0.2	23/08/2019	Field_D	673140	-	-	-	-	-	-	-	-	-
SED01	SED01		29/01/2020	Normal	699019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
SED04	SED04		29/01/2020	Normal	699019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
TP01_0.1-0.2	TP01	0.1-0.2	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	<20
TP01_0.4-0.5	TP01	0.4-0.5	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
TP01_0.9-1.0	TP01	0.9-1	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
TP02_0.4-0.5	TP02	0.4-0.5	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
TP02_0-0.1	TP02	0-0.1	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	<20
TP03_0.2-0.4	TP03	0.2-0.4	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
TP03_0-0.1	TP03	0-0.1	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	<20
TP04_0.1-0.2	TP04	0.1-0.2	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	<20
TP04_0.9-1.0	TP04	0.9-1	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
TP07_0.1-0.2	TP07	0.1-0.2	28/08/2019	Normal	673957	-	-	-	-	-	-	-	-	<20
TP07_0.2-0.3	TP07	0.2-0.3	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
TP07_0.5-0.7	BH07	0.5-0.7	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-
TP08_0.0-0.1	TP08	0-0.1	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	<20
TP08_0.2-0.3	TP08	0.2-0.3	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
TP09_0.5-0.6	TP09	0.5-0.6	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-



Table F1 - Soil Analytical Results - Human Health Guidelines

	PCBs							Herbicides	
	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)	Dinoseb
mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	20
NEPM 2013 Table 1A(1) HIL D Comm/Ind								7	
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Sand									
0-1m									
1-2m									
2-4m									
>4m									
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil									
PFAS NEMP 2018 Health Industrial/Commercial									

Field_ID	Location_Code	Sample_Depth_Range	Sampled_Date_Time	Sample_Type	Lab_Report_Numb									
TP09_0-0.1	TP09	0-0.1	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	<20
TP10_0.1-0.2	TP10	0.1-0.2	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	<20
TP10_0.5-0.6	TP10	0.5-0.6	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-
TP12_0.4-0.5	TP12	0.4-0.5	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP12_0-0.2	TP12	0-0.2	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
TP13_0.8-0.9	TP13	0.8-0.9	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP13_0-0.2	TP13	0-0.2	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
TP14_0.9-1.2	TP14	0.9-1.2	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP14_0-0.2	TP14	0-0.2	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
TP14_1.4-1.5	TP14	1.4-1.5	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP15_0.0-0.2	TP15	0-0.2	23/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
TP15_0.2-0.4	TP15	0.2-0.4	23/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
TP15_0.5-0.6	TP15	0.5-0.6	23/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP15_0.7-0.9	TP15	0.7-0.9	23/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP16_0-0.2	TP16	0-0.2	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP16_1.4-1.5	TP16	1.4-1.5	22/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP17_0.0-0.1	TP17	0-0.1	19/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
TP17_0.5-0.6	TP17	0.5-0.6	19/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP18_0.4-0.5	TP18	0.4-0.5	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP18_0-0.1	TP18	0-0.1	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
TP19_0.5-0.6	TP19	0.5-0.6	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP19_0-0.2	TP19	0-0.2	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
TP20_0.4-0.5	TP20	0.4-0.5	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP20_0-0.1	TP20	0-0.1	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
TP21_0.4-0.5	TP21	0.4-0.5	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP21_0.9-1.0	TP21	0.9-1	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP21_0-0.1	TP21	0-0.1	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
TP21_1.4-1.5	TP21	1.4-1.5	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP22_0.4-0.5	TP22	0.4-0.5	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP22_0-0.1	TP22	0-0.1	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
TP22_1.5-1.6	TP22	1.5-1.6	21/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP23_0.8-0.9	TP23	0.8-0.9	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP23_1.45-1.5	TP23	1.45-1.5	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP24_0-0.1	TP24	0-0.1	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
TP24_1.5-1.6	TP24	1.5-1.6	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP25_0.3-0.4	TP25	0.3-0.4	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	<20
TP25_0-0.2	TP25	0-0.2	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-
TP25_1.5-1.6	TP25	1.5-1.6	20/08/2019	Normal	673140	-	-	-	-	-	-	-	-	-







Table F1 - Soil Analytical Results - Human Health Guidelines

	Perfluoropropanesulfonic acid (PFPS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorododecanesulfonic acid (PFDDA)	Perfluorotetradecanesulfonic acid (PFTeDA)	Perfluorooctanoic acid (PFOA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTriDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	Perfluoroundecanoic acid (PFUnDA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of PFHxS and PFOA	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOA + PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
EQL	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	10	10	5	5	10	5	5	50	5	10	5	5
NEPM 2013 Table 1A(1) HIL D Comm/Ind																													
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Sand																													
0-1m																													
1-2m																													
2-4m																													
>4m																													
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																													
PFAS NEMP 2018 Health Industrial/Commercial									50000																	20000			

Field_ID	Location_Code	Sample_Depth_Range	Sampled_Date_Time	Sample_Type	Lab_Report_Numb	Perfluoropropanesulfonic acid (PFPS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorododecanesulfonic acid (PFDDA)	Perfluorotetradecanesulfonic acid (PFTeDA)	Perfluorooctanoic acid (PFOA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTriDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	Perfluoroundecanoic acid (PFUnDA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of PFHxS and PFOA	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOA + PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*			
PC04_0.2-0.3	PC04	0.2-0.3	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
PC04_0.5-0.7	PC04	0.5-0.7	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC05_0.16-0.3	PC05	0.16-0.3	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC05_0.45-0.6	PC05	0.45-0.6	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC05_0.6-1.0	PC05	0.6-1	6/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC06_0.3-0.5	PC06	0.3-0.5	28/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC06_0.8-0.9	PC06	0.8-0.9	28/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC07_0.4-0.5	PC07	0.4-0.5	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC07_0.6-0.7	PC07	0.6-0.7	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC08_0.34-0.44	PC08	0.34-0.44	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC08_0.45-0.55	PC08	0.45-0.55	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC08_0.7-0.8	PC08	0.7-0.8	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC09_0.3-0.41	PC09	0.3-0.41	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC09_0.5-0.6	PC09	0.5-0.6	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC09_0.8-0.9	PC09	0.8-0.9	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC10_0.15-0.2	PC10	0.15-0.2	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC10_0.5-0.6	PC10	0.5-0.6	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC10_0.9-1.0	PC10	0.9-1	15/08/2019	Normal	672730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01	TP03	0-0.1	5/08/2019	Field_D	671060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02	SED01		29/01/2020	Field_D	699019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02	TP09	0-0.1	6/08/2019	Field_D	671060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC04	BH02	1.2-1.3	7/08/2019	Field_D	671060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC05	BH04	0.4-0.5	9/08/2019	Field_D	671060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC07	PC09	0.5-0.6	15/08/2019	Field_D	672730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC09	TP17	0-0.1	19/08/2019	Field_D	673140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC11	BH06	0-0.2	23/08/2019	Field_D	673140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SED01	SED01		29/01/2020	Normal	699019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SED04	SED04		29/01/2020	Normal	699019	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
TP01_0.1-0.2	TP01	0.1-0.2	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP01_0.4-0.5	TP01	0.4-0.5	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP01_0.9-1.0	TP01	0.9-1	27/08/2019	Normal	673957	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP02_0.4-0.5	TP02	0.4-0.5	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP02_0-0.1	TP02	0-0.1	5/08/2019	Normal	671060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP03_0.2-0.4	TP03	0.2																																			





Table F2 - Sediment Analytical Results - Human Health Guidelines

	Inorganics		Metals								BTEXN							TRH - NEPM 2013						
	Moisture Content (%)	Total Organic Carbon	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (BTEXN)	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)
	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	1	0.1	2	0.4	5	5	5	0.1	5	5	0.1	0.1	0.1	0.1	0.2	0.3	0.5	20	20	50	50	100	100	100
NEPM 2013 Table 1A(1) HIL D Comm/Ind			3000	900	3600	240000	1500	730	6000	400000														
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Sand																								
0-1m											3	NL	NL		230	NL	260		NL					
1-2m											3	NL	NL		NL	NL	370		NL					
2-4m											3	NL	NL		NL	NL	630		NL					
>4m											3	NL	NL		NL	NL	NL		NL					

Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number	Moisture Content (%)	Total Organic Carbon	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (BTEXN)	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)
QC02	SED01	29/01/2020	Field_D	699019	23	-	4.8	<0.4	22	47	27	<0.1	18	240	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<100	<100	<100
SED01	SED01	29/01/2020	Normal	699019	25	2.7	4.8	<0.4	29	69	28	<0.1	20	350	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	110	<100	110
SED04	SED04	29/01/2020	Normal	699019	35	4.9	7.2	<0.4	19	39	34	<0.1	15	290	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	120	<100	120





Table F2 - Sediment Analytical Results - Human Health Guidelines

	Endrin aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1
NEPM 2013 Table 1A(1) HIL D Comm/Ind				50		80	2500	160
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Sand								
0-1m								
1-2m								
2-4m								
>4m								
PEAS NEPM 2018 Health Industrial/Commercial								

Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number							
QC02	SED01	29/01/2020	Field_D	699019	-	-	-	-	-	-	-
SED01	SED01	29/01/2020	Normal	699019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
SED04	SED04	29/01/2020	Normal	699019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1





Table F2 - Sediment Analytical Results - Human Health Guidelines

	CBs			
	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)
	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1
NEPM 2013 Table 1A(1) HIL D Comm/Ind				7
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Sand				
0-1m				
1-2m				
2-4m				
>4m				
PEAS NEPM 2018 Health Industrial/Commercial				

Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number				
QC02	SED01	29/01/2020	Field_D	699019	-	-	-	-
SED01	SED01	29/01/2020	Normal	699019	<0.1	<0.1	<0.1	<0.1
SED04	SED04	29/01/2020	Normal	699019	<0.1	<0.1	<0.1	<0.1





Table F2 - Sediment Analytical Results - Human Health Guidelines

Transport for NSW  
Townson and Burdekin Road  
Contamination Investigation

		PFAS																																		
		Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorononane sulfonate (PFNS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluorooctanoic acid (PFOA)	Perfluorododecanoic acid (PFDDA)	Perfluorotridecanoic acid (PFTTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	Perfluoroundecanoic acid (PFUnDA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of PFHxS and PFOS	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*		
EQL		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
NEPM 2013 Table 1A(1) HIL D Comm/Ind																																				
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Sand																																				
0-1m																																				
1-2m																																				
2-4m																																				
4m																																				
PFAS NEPM 2018 Health Industrial/Commercial														50000																				20000		

Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																															
QC02	SED01	29/01/2020	Field_D	699019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SED01	SED01	29/01/2020	Normal	699019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SED04	SED04	29/01/2020	Normal	699019	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	23	23	23





Table F3 - Groundwater Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids								PFAS - Perfluoroalkyl Sulfonamide					PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums											
	Perfluoropropanesulfonic acid (PFPS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFDA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTriDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	N-Ethyl perfluorooctane sulfonamidoethanol (EFOSE)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)*	PFAS (Sum of Total)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	PFAS (Sum of Total)(WA DER List)		
EQI	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	
ANZG (2018) - Freshwater - 95% level of species protection																																					
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intr																																					
2-4m																																					
4-8m																																					
>8m																																					
PFAS NEMP 2.0 2020 Freshwater - 95% - slightly to moderate						0.13							220																								
Sydney Water Trade Waste Acceptance Standards 2018-19																																					
Field_ID	Location_Code	Sampled_Date	Sample_Type	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
BH06	BH06	29/01/2020	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
BH08	BH08	29/01/2020	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
BH09	BH09	29/01/2020	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
BH102	BH102	25/05/2020	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH114	BH114	25/05/2020	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH12	BH12	29/01/2020	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
QC01	BH12	29/01/2020	Field_D	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
QC101	BH102	25/05/2020	Field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Table F4 - Surface Water Analytical Results against Human Health and Ecological Screening Criteria

	Inorganics		Nutrients				Metals							BTEXN							TRH - NEPM 2013						TRH - NEPM 1999										
	Total Dissolved Solids	Total Suspended Solids	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Phosphate total (P)	Kjeldahl Nitrogen Total	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (BTEXN)	BTEX (Sum of Total) - Lab Calc	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)			
	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L			
EQL	10	1	0.05	0.2	10	0.2	0.001	0.0002	0.001	0.001	0.001	0.0001	0.001	0.005	1	1	1	1	2	3	10	1	20	20	50	50	100	100	100	20	50	100	100	100			
ANZG (2018) - Freshwater - 95% level of species protection							0.013	0.0002	0.001	0.0014	0.0034	0.0006	0.011	0.008	950			350			16																
PFAS NEMP 2018 Freshwater 95%																																					
ADWG 2011 Recreational (v3.5 updated 2018) (updated PFAS guidance 2019)							0.1	0.02		20	0.1	0.01	0.2		10	8000	3000			6000																	
PFAS NEMP 2018 Health Recreational Water																																					
Field_ID	Location_Code	Sampled_Date	Sample_Type	Matrix_Type																																	
QC03	SW04	29/01/2020	Interlab_D	water	-	-	-	-	-	<0.001	<0.0001	<0.001	0.002	0.011	<1	<2	<2	<2	<2	<2	-	<1	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50			
SW01	SW01	29/01/2020	Normal	water	530	1.8	<0.05	0.5	<10	0.5	0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	0.001	0.009	<1	<1	<1	<1	<2	<3	<10	-	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100
SW04	SW04	29/01/2020	Normal	water	410	3.9	2.6	3.3	<10	0.7	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.002	0.015	<1	<1	<1	<1	<2	<3	<10	-	<20	<20	<50	<50	<100	<100	<100	<20	<50	<100	<100





Table F4 - Surface Water Analytical Results against Human Health and Ecological Screening Criteria

		OP Pesticides																																			
		Trkuthion	Azinphos methyl	Boistar (Sulprofos)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenitrothion	Fensulfotion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Ormethoate	Parathion	Phorate	Priniphos-methyl	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos		
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		
EQL		2	2	2	2	20	20	2	20	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	20	2	2	2	2	2	2	
ANZG (2018) - Freshwater - 95% level of species protection			0.02			0.01					0.01		0.15					0.2			0.05						0.004										
PFAS NEMP 2018 Freshwater 95%																																					
ADWG 2011 Recreational (v3.5 updated 2018) (updated PFAS guidance 2019)			300	100		100					40	50	70	40		40	10	70	100	70	700		7	50	20		10	200		900	200		9		1000		
PFAS NEMP 2018 Health Recreational Water																																					
Field_ID	Location_Code	Sampled_Date	Sample_Type	Matrix_Type																																	
QC03	SW04	29/01/2020	Interlab_D	water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW01	SW01	29/01/2020	Normal	water	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2
SW04	SW04	29/01/2020	Normal	water	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2



Table F4 - Surface Water Analytical Results against Human Health and Ecological Screening Criteria

	PCBs								PFAS																																								
	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)	Perfluoropropanesulfonic acid (PFPS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorohexane sulfonic acid (PFHS)	Perfluorononane sulfonate (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluorooctanoic acid (PFOA)	Perfluorododecanoic acid (PFDDA)	Perfluorotridecanoic acid (PFTDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	Perfluoroundecanoic acid (PFUnDA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of PFHS and PFOS	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHS + PFOS + PFOA)*						
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L					
EQL	1	1	1	1	1	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.01	0.05	0.01	0.01	0.1	0.01	0.05	0.01	0.01				
ANZG (2018) - Freshwater - 95% level of species protection				0.6		0.03																																											
PFAS NEMP 2018 Freshwater 95%																0.13																																	
ADWG 2011 Recreational (v3.5 updated 2018) (updated PFAS guidance 2019)																																																	
PFAS NEMP 2018 Health Recreational Water																																																	
Field_ID	Location_Code	Sampled_Date	Sample_Type	Matrix_Type																																													
QC03	SW04	29/01/2020	Interlab_D	water	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
SW01	SW01	29/01/2020	Normal	water	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1			
SW04	SW04	29/01/2020	Normal	water	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.01	0.01	<0.01	<0.01	0.03	<0.01	<0.01	0.06	<0.05	0.02	<0.01	0.03	<0.01	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.05	<0.01	<0.05	<0.01	<0.05	<0.01	<0.05		



















Table F5 - Soil Analytical Results - Waste Classification

Table with 34 columns representing various PFAS compounds and 10 rows of detection limits. The compounds include Perfluoropropanesulfonic acid (PFPS), Perfluorobutane sulfonic acid (PFBS), Perfluoropentane sulfonic acid (PFPS), Perfluoroheptane sulfonic acid (PFHPS), Perfluorohexane sulfonic acid (PFHS), Perfluorononane sulfonate (PFNS), Perfluorodecane sulfonic acid (PFOS), Perfluorododecane sulfonic acid (PFDS), Perfluorobutanoic acid (PFBA), Perfluoropentanoic acid (PFPeA), Perfluorohexanoic acid (PFHxA), Perfluoroheptanoic acid (PFHpA), Perfluorononanoic acid (PFNA), Perfluorodecanoic acid (PFDA), Perfluorododecanoic acid (PFDDA), Perfluorotridecanoic acid (PFTDA), Perfluorotetradecanoic acid (PFTeDA), Perfluorooctane sulfonamide (FOSA), N-Methylperfluorooctane sulfonamide (MeFOSA), N-Ethylperfluorooctane sulfonamide (EFOSA), N-Ethylperfluorodecane sulfonamide (EFD), and N-Methylperfluorodecane sulfonamide (EMFD).

Main data table with columns: Field ID, Location Code, Depth, Date/Time, Sample Type, Matrix Type, and 34 PFAS detection limit columns. Rows include samples BH02 through BH12, DUP 011, and PC01 through PC10, with various depths and dates from 2019.











Table F6 - Sediment Analytical Results - Waste Classification

	Inorganics		Metals								BTEXN							TRH - NEPM 1999					PAHs																											
	Moisture Content (%)	Total Organic Carbon	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (BTEXN)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene-PAH	Phenanthrene	Pyrene	PAHs (Sum of total) - Lab Calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ)(half LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc								
EQL	1	0.1	2	0.4	5	5	5	0.1	5	5	0.1	0.1	0.1	0.1	0.2	0.3	0.5	20	20	50	50	50	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5					
NSW EPA (2014) General Solid Waste CT1 (No Leaching)			100	20	100		100	4	40		10	288	600			1000		650				10000					0.8																200							
NSW EPA (2014) General Solid Waste SCC1 (with TCLP)			500	100	1900		1500	50	1050		18	518	1080			1800		650				10000					10																	200						
NSW EPA (2014) Restricted Solid Waste CT2 (No Leaching)			400	80	400		400	16	160		40	1152	2400			4000		2600				40000					3.2																		800					
NSW EPA (2014) Restricted Solid Waste SCC2 (with TCLP)			2000	400	7600		6000	200	4200		72	2073	4320			7200		2600				40000					23																			800				
NSW EPA (2014) Special Waste (Asbestos)																																																		
<b>Field_ID</b>	<b>Location_Code</b>	<b>Sampled_Date_Time</b>	<b>Matrix_Description</b>																																															
QC02	SED01	29/01/2020	Soil / Sediment	23	-	4.8	<0.4	22	47	27	<0.1	18	240	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2			
SED01	SED01	29/01/2020	Soil / Sediment	25	2.7	4.8	<0.4	29	69	28	<0.1	20	350	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	87	87	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	
SED04	SED04	29/01/2020	Soil / Sediment	35	4.9	7.2	<0.4	19	39	34	<0.1	15	290	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	110	110	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2



Table F6 - Sediment Analytical Results - Waste Classification

		OC Pesticides																												OP Pes																					
		Organochlorine pesticides EPA V/c	Other organochlorine pesticides EPA V/c	4,4'-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	d-BHC	4,4 DDD	4,4 DDT	DDT+DDE+DDD - Lab Calc	Dieldrin	Endosulfan I (alpha)	Endosulfan II (beta)	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Tokuthion	Azinphos methyl	Bolstar (Sulprofos)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenitrothion								
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg						
EQL		0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	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	0.2	0.2	0.2	0.2				
NSW EPA (2014) General Solid Waste CT1 (No Leaching)																																																			
NSW EPA (2014) General Solid Waste SCC1 (with TCLP)																																																			
NSW EPA (2014) Restricted Solid Waste CT2 (No Leaching)																																																			
NSW EPA (2014) Restricted Solid Waste SCC2 (with TCLP)																																																			
NSW EPA (2014) Special Waste (Asbestos)																																																			
Field_ID	Location_Code	Sampled_Date_Time	Matrix_Description	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
QC02	SED01	29/01/2020	Soil / Sediment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
SED01	SED01	29/01/2020	Soil / Sediment	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
SED04	SED04	29/01/2020	Soil / Sediment	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<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



Table F6 - Sediment Analytical Results - Waste Classification

				sticides																			
				Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Pirimiphos-methyl	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorinphos			
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
EQL				0.2	0.2	0.2	0.2	0.2	0.2	2	0.2	2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		
NSW EPA (2014) General Solid Waste CT1 (No Leaching)																							
NSW EPA (2014) General Solid Waste SCC1 (with TCLP)																							
NSW EPA (2014) Restricted Solid Waste CT2 (No Leaching)																							
NSW EPA (2014) Restricted Solid Waste SCC2 (with TCLP)																							
NSW EPA (2014) Special Waste (Asbestos)																							
Field_ID	Location_Code	Sampled_Date_Time	Matrix_Description																				
QC02	SED01	29/01/2020	Soil / Sediment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SED01	SED01	29/01/2020	Soil / Sediment	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
SED04	SED04	29/01/2020	Soil / Sediment	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	



Table F6 - Sediment Analytical Results - Waste Classification

	PCBs								PFAS																																									
	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorononane sulfonate (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluorooctanoic acid (PFOA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTeDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	Perfluoroundecanoic acid (PFUnDA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of PFHxS and PFOA	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOA + PFOS)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*							
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg					
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5			
NSW EPA (2014) General Solid Waste CT1 (No Leaching)								50																																										
NSW EPA (2014) General Solid Waste SCC1 (with TCLP)								50						1800																																				
NSW EPA (2014) Restricted Solid Waste CT2 (No Leaching)								50																																										
NSW EPA (2014) Restricted Solid Waste SCC2 (with TCLP)								50						7200																																				
NSW EPA (2014) Special Waste (Asbestos)																																																		
Field_ID	Location_Code	Sampled_Date_Time	Matrix_Description																																															
QC02	SED01	29/01/2020	Soil / Sediment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
SED01	SED01	29/01/2020	Soil / Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		
SED04	SED04	29/01/2020	Soil / Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<5	<5	<5	<5	<5	<5	23	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	



Table F7 - Calculated RPD Results of Soil and Sediment Field Duplicate Pairs

Field Duplicates (soil)  
Filter: ALL

Table with columns: Chem\_Group, ChemName, Units, EQL, and 16 columns of RPD data for various sampling events (SDG Field ID, Sampled Date/Time, and RPD values for 16 different sites).

\*RPDs have only been considered where a concentration is greater than 1 times the EQL.  
\*\*High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-30 x EQL); 50 (> 30 x EQL) )  
\*\*\*Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory





Table F7 - Calculated RPD Results of Soil and Sediment Field Duplicate Pairs

Field Duplicates (soil)
Filter: ALL

Table with columns: Chem\_Group, ChemName, Units, EQL, and multiple RPD columns for different sampling dates and locations (e.g., TP17\_0.0-0.1, QC09, TP23\_1.45-1.5, etc.). Rows include Inorganics, Metals, Metals (leached), BTEXN, TRH - NEPM 2013, TRH - NEPM 1999, PAHs, and PFAS.

\*RPDs have only been considered where a concentration is greater than 1 times the EQL.
\*\*High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-30 x EQL)
\*\*\*Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any metho







Table F9 - Soil Trip Blanks and Spikes Analytical Results

Transport for NSW  
Townson and Burdekin Road  
Contamination Investigation

	BTEXN							TRH - NEPM 2013	TRH - NEPM 1999	
	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene (BTEXN)	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	C6-C9 Fraction
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.2	0.3	0.5	20	20	20

Field_ID	Sampled_Date_Time	Sample_Type	Lab_Report_Number										
TB	5/08/2019	Trip_B	671060	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<20
TRIP BLANK		Trip_B	673140	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	-	-	-
TRIP BLANK	7/08/2019	Trip_B	671060	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<20
TRIP SPIKE		Trip_S	673140	92%	92%	130%	93%	91%	92%	-	-	-	-
TRIP SPIKE	7/08/2019	Trip_S	671060	110%	110%	131%	110%	110%	110%	88%	-	110%	110%
TRIP SPIKE	27/08/2019	Trip_S	673957	110%	110%	132%	130%	130%	130%	120%	-	110%	100%
TS	5/08/2019	Trip_S	671060	120%	120%	133%	110%	110%	110%	100%	-	110%	110%
TS	9/08/2019	Trip_S	671060	83%	82%	134%	78%	79%	78%	77%	-	77%	79%





Table F10 - Rinsate, Water Trip Blanks and Spikes Analytical Results

	Perfluorooctane sulfonamide (FOSA)	Perfluoroundecanoic acid (PFUnDA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of PFHxS and PFOS	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
EQL	0.05	0.01	0.05	0.05	0.05	0.05	0.05	0.05	0.01	0.05	0.01	0.01	0.1	0.01	0.05	0.01	0.01

Field_ID	Sampled_Date	Sample_Type	Lab_Report_Number														
RB_190826	26/08/2019	Rinsate	673957	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RB_200819	20/08/2019	Rinsate	673140	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RB_210819	21/08/2019	Rinsate	673140	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RB01	05/08/2019	Rinsate	671060	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RB01	29/01/2020	Rinsate	699019	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01	<0.01
RB02	06/08/2019	Rinsate	671060	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RB02	29/01/2020	Rinsate	699019	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.01
RB03	07/08/2019	Rinsate	671060	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RB03	29/01/2020	Rinsate	699019	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.01
RB04	09/08/2019	Rinsate	671060	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RB05	15/08/2019	Rinsate	672730	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RB08_230819	23/08/2019	Rinsate	673140	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.01
TB	23/08/2019	Trip_B	673140	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.01
TRIP BLANK	15/08/2019	Trip_B	672730	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP BLANK	25/05/2020	Trip_B	721605	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP BLANK	29/01/2020	Trip_B	699019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP SPIKE	06/08/2019	Trip_S	672730	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP SPIKE	25/05/2020	Trip_S	721605	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP SPIKE	29/01/2020	Trip_S	699019	-	-	-	-	-	-	-	-	-	-	-	-	-	-

## **Appendix G** – Laboratory analytical certificates



# CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory  
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066  
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory  
Unit 1, 21 Smallwood Pl., Murarie, QLD 4172  
07 3902 4800 EnviroSampleQLD@eurofins.com

Perth Laboratory  
Unit 2, 91 Leach Highway, Kewdale WA 6105  
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory  
2 Kingston Town Close, Oakleigh, VIC 3166  
03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Tom Frederick, Jake Vickers									
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQulS, Custom)		Esdat		Handed over by		Tom Frederick, Jake Vickers									
Contact Name		Henry Luo		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered" SUITE code must be used to attach SUITE Priority.)</small> asbestos (presence / absence) suite B7a (TRH, BTEXN, PAH, phenols, 8 metals) suite B14 (OCP, OPP) suite B7 (TRH, BTEXN, PAH, 8 metals) PFAS 8 metals BTEX / TRH C6-C10		Email for Invoice		Henry.Luo@ghd.com		Email for Results		Henry.Luo@ghd.com		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day <input checked="" type="checkbox"/> Other ( Hold ) <small>* Surcharges apply</small>							
Phone No		0414090002				Containers		1L Plastic		250mL Plastic		125mL Plastic		200mL Amber Glass		40mL VOA vial		500mL PFAS Bottle		Jar (Glass or HDPE)		Other (Asbestos AS1984, WA Guidelines)	
Special Directions		Place all samples on Hold				Sampled Date/Time (dd/mm/yy hh:mm)		Matrix (Solid (S) Water (W))		1		1		1		1		1		1		1	
Purchase Order		12511195				No		Client Sample ID		TP02_0_0.1		5/8/19		S		x		x		x			
Quote ID No						1		TP02_0.4_0.5		5/8/19		S										x	
				3		TP02_0.7_0.8		5/8/19		S													
				4		TP02_1.3_1.4		5/8/19		S													
				5		PC02_0.16_0.25		5/8/19		S		x		x		x							
				6		PC02_0.5_0.6		5/8/19		S										X			
				7		TP02_2.3_2.4		5/8/19		S													
				8		PC03_0.3_0.5		5/8/19		S		X		X		X							
				9		PC03_0.7_0.9		5/8/19		S										X			
				10		TP03_0_0.1		5/8/19		S		X		X		X							
				Total Counts								10		10									
Method of Shipment		<input checked="" type="checkbox"/> Courier (# )		<input type="checkbox"/> Hand Delivered		<input type="checkbox"/> Postal		Name		Signature		Date		Time		Temperature		Report No					
Eurofins   mgt		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		13 / 08 / 2019		Time		3:57PM		9.70C		671060					
Laboratory Use Only		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date				Time											

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.





# CHAIN OF CUSTODY RECORD

ABN 50 065 855 521

Sydney Laboratory  
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066  
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory  
Unit 1, 21 Smallwood Pl., Murarrie, QLD 4172  
07 3802 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory  
Unit 2, 91 Leach Highway, Kewdale WA 6105  
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory  
2 Kingston Town Close, Oakleigh, VIC 3166  
03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Tom Frederick, Jake Vickers																							
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQUIS, Custom)		Esdat		Handed over by		Tom Frederick, Jake Vickers																							
Contact Name		Henry Luo		Analysis (Note: Where metals are requested, please specify "Total" or "Filtered" SITE code must be used to attract SUTIE pricing)		asbestos (presence / absence)		suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)		suite B14 (OCP, OPP)		suite B7 (TRH, BTEXN, PAH, 8 metals)		PFAS		8 metals		BTEX / TRH C6-C10		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS4694, WA Guidelines)		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)															
Phone No		0414090002																				Email for Invoice		Henry.Luo@ghd.com		Email for Results		Henry.Luo@ghd.com		<input type="checkbox"/> Overnight (9am)*		<input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day*		<input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day		* Surcharges apply	
Special Directions		Place all samples on Hold																				Sample Comments / Dangerous Goods Hazard Warning															
Purchase Order		12511195																																			
Quote ID No		-																																			
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																																		
1	QC01	5/8/19	S																																		
2	TP03_0.2_0.4	5/8/19	S																																		
3	TP03_1.0_1.2	5/8/19	S																																		
4	RB01	5/8/19	W																																		
5	TS/TB	5/8/19	W																																		
6	PC04_0.2_0.3	5/8/19	S	x	x	x																															
7	PC04_0.5_0.7	5/8/19	S																																		
8	TP08_0_0.1	6/8/19	S	X	X	X																															
9	TP08_0.2_0.3	6/8/19	S																																		
10	TP08_0.6_0.7	6/8/19	S																																		
Total Counts																																					
Method of Shipment		<input checked="" type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time		Temperature		Report No																			
Eurofins   mgt Laboratory Use Only		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Date		Time		Temperature		Report No																			
		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Date		Time		Temperature		Report No																			

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# CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

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Melbourne Laboratory  
2 Kingston Town Close, Oakleigh, VIC 3166  
03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Tom Frederick, Jake Vickers							
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQuIS, Custom)		Esdat		Handed over by		Tom Frederick, Jake Vickers							
Contact Name		Henry Luo		Analyses (Note: Where metals are requested, please specify "Total" or "Filler" SUITE code must be used to attract SUITE pricing.)		asbestos (presence / absence)		suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)		suite B14 (OCP, OPP)		PFAS		8 metals		BTEX / TRH C6-C10		Email for Invoice		Henry.Luo@ghd.com	
Phone No		0414090002																Email for Results		Henry.Luo@ghd.com	
Special Directions		Place all samples on Hold		Matrix (Solid (S) Water (W))		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		Containers		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input checked="" type="checkbox"/> Other ( Hold )    * Surcharges apply		Sample Comments / Dangerous Goods Hazard Warning									
Purchase Order		12511195																			
Quote ID No		-																			
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																		
1	RB02	6/8/19	W																		
2	PC05_0.16_0.3	6/8/19	S	x																	
3	PC05_0.45_0.6	6/8/19	S	x	x	x															
4	PC05_0.6_1.0	6/8/19	S																		
5	TP09_0_0.1	6/8/19	S	x	x	x															
6	TP09_0.5_0.6	6/8/19	S																		
7	TP09_0.8_0.9	6/8/19	S																		
8	QC02	6/8/19	S																		
9	BH03_0.3_1.0	6/8/19	S	x																	
10	BH03_0.1_0.2	6/8/19	S	x	x																
Total Counts																					
Method of Shipment		<input checked="" type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time		Report No					
Eurofins   mgt Laboratory Use Only		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Date		Time		Report No					
		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Date		Time		Report No					

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# CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory  
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Melbourne Laboratory  
2 Kingston Town Close, Oakleigh, VIC 3166  
03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Tom Frederick, Jake Vickers			
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQulS, Custom)		Esdat		Handed over by		Tom Frederick, Jake Vickers			
Contact Name		Henry Luo		<small>Analyses (Note: Where metals are requested, please specify 'Total' or 'Filtered') SUIITE code must be used to extract SUIITE pricing</small> asbestos (presence / absence) suite B7a (TRH, BTEXN, PAH, phenols, 8 metals) suite B14 (OCP, OPP) suite B7 (TRH, BTEXN, PAH, 8 metals) PFAS 8 metals BTEX / TRH C6-C10		Email for Invoice		Henry.Luo@ghd.com		Email for Results		Henry.Luo@ghd.com		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)			
Phone No		0414090002				<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input checked="" type="checkbox"/> Other ( Hold ) <small>* Surcharges apply</small>		Containers		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)		Sample Comments / Dangerous Goods Hazard Warning					
Special Directions		Place all samples on Hold				<input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input checked="" type="checkbox"/> Other ( Hold ) <small>* Surcharges apply</small>		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)	
Purchase Order		12511195				1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)	
Quote ID No		-				1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS1664, WA Guidelines)	
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	TP10_0.5_0.6	6/8/19	S														
2	TP10_1.1_1.2	6/8/19	S														
3	TP10_0.1_0.2	6/8/19	S	x	x	x											
4	BH02_0.1_0.2	7/8/19	S	X	X												
5	BH02_0.4_0.5	7/8/19	S	x	x	x											
6	BH02_1.2_1.3	7/8/19	S		x												
7	BH02_0.9_1.0	7/8/19	S														
8	BH02_2.1_2.2	7/8/19	S				X										
9	RB03	7/8/19	W					x					1	1	2		
10	QC04	7/8/19	S				X							1			
11	TS/TB	7/8/19	W						X						2		
Total Counts													1	1	1	9	8
Method of Shipment		<input checked="" type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time		Temperature	
Eurofins   mgt		Received By: <i>[Signature]</i>		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date: 13/08/19		Time		Date		Time		Report No	
Laboratory Use Only		Received By:		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Date		Time		Report No	

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# CHAIN OF CUSTODY RECORD

ABN 50 065 085 521

Sydney Laboratory  
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02 9900 8400 EnviroSampleNSW@eurofins.com

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Perth Laboratory  
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Melbourne Laboratory  
2 Kingston Town Close, Oakleigh, VIC 3168  
03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Jake Vickers									
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQUIS, Custom)		Esdat		Handed over by		Jake Vickers									
Contact Name		Henry Luo		<small>Analyses (Note: Where media are retested, please specify "Total" or "Filtered" / SUITE code must be used to extract SUITE pricing.)</small> asbestos (presence / absence) suite B7a (TRH, BTEXN, PAH, phenols, 8 metals) suite B14 (OCP, OPP) suite B7 (TRH, BTEXN, PAH, 8 metals) PFAS 8 metals BTEX / TRH CG-C10		Email for Invoice		Henry.Luo@ghd.com		Email for Results		Henry.Luo@ghd.com		Turnaround Time (TAT) Requirements (Default: will be 5 days if not ticked) <input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* * Surcharges apply <input checked="" type="checkbox"/> Other ( Hold )									
Phone No		0414090002				Containers		1L Plastic		250mL Plastic		125mL Plastic				200mL Amber Glass		40mL VOA vial		500mL PFAS Bottle		Jar (Glass or HDPE)	
Special Directions		Place all samples on Hold				Sample Comments / Dangerous Goods Hazard Warning																	
Purchase Order		12511195				No		Client Sample ID		Sampled Date/Time (dd/mm/yy hh:mm)		Matrix (Solid (S) Water (W))											
Quote ID No		-				1		BH04_0.1-0.2		9/8/19		S		x		x		x					
				2		BH04_0.4-0.5		9/8/19		S				x									
				3		BH04_0.9-1.0		9/8/19		S													
				4		BH04_1.9-2.0		9/8/19		S													
				5		QC05		9/8/19		S													
				6		QC06		9/8/19		S													
				7		RB04		9/8/19		w													
				8		TB		9/8/19		w										HOLD			
				9		TS		9/8/19		W										HOLD			
				10																			
				11																			
				Total Counts																			
Method of Shipment		<input checked="" type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Date		Date		Date		Date		Date		Date			
Eurofins   mgt Laboratory Use Only		Received By		Signature		Signature		Date		Date		Date		Date		Date		Date		Date			
		Received By		Signature		Signature		Date		Date		Date		Date		Date		Date		Date			

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**GHD Pty Ltd NSW**  
**Level 15, 133 Castlereagh Street**  
**Sydney**  
**NSW 2000**



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**Accreditation Number 1261**  
**Site Number 18217**

Accredited for compliance with ISO/IEC 17025–Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

**Attention:** Henry Luo  
**Report** 671060-AID  
**Project Name** TOWNSON AND BURDEKIN RD  
**Project ID** 12511195  
**Received Date** Aug 08, 2019  
**Date Reported** Aug 20, 2019

**Methodology:**

**Asbestos Fibre Identification** Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.  
*NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*

**Unknown Mineral Fibres** Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.  
*NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*

**Subsampling Soil Samples** The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.  
*NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*

**Bonded asbestos-containing material (ACM)** The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.  
*NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*

**Limit of Reporting** The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).  
 The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).  
*NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

**Project Name** TOWNSON AND BURDEKIN RD  
**Project ID** 12511195  
**Date Sampled** Aug 05, 2019 to Aug 09, 2019  
**Report** 671060-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH02_0.1-0.2	19-Au12474	Aug 07, 2019	Approximate Sample 187g Sample consisted of: Grey coarse-grained soil, fragments of asphalt and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH02_0.4-0.5	19-Au12475	Aug 07, 2019	Approximate Sample 192g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP02_0-0.1	19-Au18717	Aug 05, 2019	Approximate Sample 254g Sample consisted of: Brown coarse-grained soil, plant residue and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
PC02_0.16-0.25	19-Au18719	Aug 05, 2019	Approximate Sample 172g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
PC03_0.3-0.5	19-Au18721	Aug 05, 2019	Approximate Sample 259g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP03_0-0.1	19-Au18723	Aug 05, 2019	Approximate Sample 300g Sample consisted of: Dark brown coarse-grained soil, plant residue, fragments of asphalt and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
PC04_0.2-0.3	19-Au18729	Aug 05, 2019	Approximate Sample 176g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP08_0.0-0.1	19-Au18731	Aug 06, 2019	Approximate Sample 229g Sample consisted of: Brown coarse-grained soil, plant residue, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
PC05_0.16-0.3	19-Au18734	Aug 06, 2019	Approximate Sample 199g Sample consisted of: Grey coarse-grained soil, fragments of shale and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
PC05_0.45-0.6	19-Au18735	Aug 06, 2019	Approximate Sample 199g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP09_0-0.1	19-Au18737	Aug 06, 2019	Approximate Sample 302g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH03_0.3-1.0	19-Au18740	Aug 06, 2019	Approximate Sample 269g Sample consisted of: Red-brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH03_0.1-0.2	19-Au18741	Aug 06, 2019	Approximate Sample 91g Sample consisted of: Grey coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP10_0.1-0.2	19-Au18743	Aug 06, 2019	Approximate Sample 156g Sample consisted of: Grey coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH04_0.1-0.2	19-Au18751	Aug 09, 2019	Approximate Sample 205g Sample consisted of: Grey coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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>
Asbestos - LTM-ASB-8020	Sydney	Aug 13, 2019	Indefinite



<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 13, 2019 3:28 PM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 671060	<b>Due:</b> Aug 20, 2019
	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X		X		X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X		X		X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																				
<b>Perth Laboratory - NATA Site # 23736</b>																				
<b>External Laboratory</b>																				
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID															
1	BH02_0.1-0.2	Aug 07, 2019		Soil	S19-Au12474	X								X					X	
2	BH02_0.4-0.5	Aug 07, 2019		Soil	S19-Au12475	X						X		X					X	
3	BH02_1.2-1.3	Aug 07, 2019		Soil	S19-Au12476									X					X	
4	BH02_0.9-1.0	Aug 07, 2019		Soil	S19-Au12477											X				
5	BH02_2.1-2.2	Aug 07, 2019		Soil	S19-Au12478									X		X				
6	RB03	Aug 07, 2019		Water	S19-Au12479					X										
7	QC04	Aug 07, 2019		Soil	S19-Au12480									X		X				
8	TRIP BLANK	Aug 07, 2019		Soil	S19-Au12481															X
9	TRIP SPIKE	Aug 07, 2019		Soil	S19-Au12482															X

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 13, 2019 3:28 PM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	671060	<b>Due:</b>	Aug 20, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X		X		X	X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X		X		X	X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																					
<b>Perth Laboratory - NATA Site # 23736</b>																					
10	TP02_0-0.1	Aug 05, 2019		Soil	S19-Au18717	X						X		X				X			
11	TP02_0.4-0.5	Aug 05, 2019		Soil	S19-Au18718									X		X					
12	PC02_0.16-0.25	Aug 05, 2019		Soil	S19-Au18719	X						X		X				X			
13	PC02_0.5-0.6	Aug 05, 2019		Soil	S19-Au18720									X		X					
14	PC03_0.3-0.5	Aug 05, 2019		Soil	S19-Au18721	X						X		X				X			
15	PC03_0.7-0.9	Aug 05, 2019		Soil	S19-Au18722									X		X					
16	TP03_0-0.1	Aug 05, 2019		Soil	S19-Au18723	X						X		X				X			
17	QC01	Aug 05, 2019		Soil	S19-Au18724									X		X					
18	TP03_0.2-0.4	Aug 05, 2019		Soil	S19-Au18725									X		X					
19	RB01	Aug 05, 2019		Water	S19-Au18726					X											
20	TS	Aug 05, 2019		Soil	S19-Au18727																X

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 13, 2019 3:28 PM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 671060	<b>Due:</b> Aug 20, 2019
	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail			Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>					X		X	X	X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>			X	X		X		X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																	
<b>Perth Laboratory - NATA Site # 23736</b>																	
21	TB	Aug 05, 2019															X
22	PC04_0.2-0.3	Aug 05, 2019						X	X	X					X		
23	PC04_0.5-0.7	Aug 05, 2019								X			X				
24	TP08_0.0-0.1	Aug 06, 2019						X	X	X				X			
25	TP08_0.2-0.3	Aug 06, 2019								X			X				
26	RB02	Aug 06, 2019					X										
27	PC05_0.16-0.3	Aug 06, 2019						X	X	X					X		
28	PC05_0.45-0.6	Aug 06, 2019						X	X	X							
29	PC05_0.6-1.0	Aug 06, 2019								X		X					
30	TP09_0-0.1	Aug 06, 2019						X	X	X				X			
31	TP09_0.5-0.6	Aug 06, 2019								X		X					
32	QC02	Aug 06, 2019								X		X					

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 13, 2019 3:28 PM
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<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail			Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>					X		X	X	X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>			X	X		X		X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																	
<b>Perth Laboratory - NATA Site # 23736</b>																	
33	BH03_0.3-1.0	Aug 06, 2019									X		X				
34	BH03_0.1-0.2	Aug 06, 2019									X				X		
35	TP10_0.5-0.6	Aug 06, 2019									X		X				
36	TP10_0.1-0.2	Aug 06, 2019						X	X	X					X		
37	BH02_0.1-0.2	Aug 07, 2019															
38	BH02_0.4-0.5	Aug 07, 2019															
39	BH02_1.2-1.3	Aug 07, 2019															
40	BH02_2.1-2.2	Aug 07, 2019															
41	QC04	Aug 07, 2019															
42	TS	Aug 07, 2019															
43	TB	Aug 07, 2019															
44	BH04_0.1-0.2	Aug 09, 2019	X						X	X					X		

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 13, 2019 3:28 PM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	671060	<b>Due:</b>	Aug 20, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X		X		X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X		X		X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																				
<b>Perth Laboratory - NATA Site # 23736</b>																				
45	BH04_0.4-0.5	Aug 09, 2019		Soil	S19-Au18752									X				X		
46	QC05	Aug 09, 2019		Soil	S19-Au18753				X					X						
47	RB04	Aug 09, 2019		Water	S19-Au18754				X											
48	TS	Aug 09, 2019		Soil	S19-Au18755															X
49	TP02_0.7-0.8	Aug 05, 2019		Soil	S19-Au18756			X												
50	TP02_1.3-1.4	Aug 05, 2019		Soil	S19-Au18757			X												
51	TP02_2.3-2.4	Aug 05, 2019		Soil	S19-Au18758			X												
52	TP03_1.0-1.2	Aug 05, 2019		Soil	S19-Au18759			X												
53	TP08_0.6-0.7	Aug 06, 2019		Soil	S19-Au18760			X												
54	TP09_0.8-0.9	Aug 06, 2019		Soil	S19-Au18761			X												
55	TP10_1.1-1.2	Aug 06, 2019		Soil	S19-Au18762			X												
56	BH02_0.9-1.0	Aug 07, 2019		Soil	S19-Au18763		X													

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 13, 2019 3:28 PM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	671060	<b>Due:</b>	Aug 20, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X		X		X	X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X		X		X	X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																					
<b>Perth Laboratory - NATA Site # 23736</b>																					
57	BH04_0.9-1.0	Aug 09, 2019		Soil	S19-Au18764			X													
58	BH04_1.9-2.0	Aug 09, 2019		Soil	S19-Au18765			X													
59	QC06	Aug 09, 2019		Soil	S19-Au18766			X													
60	QC03	Aug 09, 2019		Soil	S19-Au18767			X													
61	TB	Aug 09, 2019		Soil	S19-Au18768				X												
62	RB03	Aug 07, 2019		Water	S19-Au18969		X														
<b>Test Counts</b>						15	9	13	13	5	5	11	11	30	30	14	14	15	15	5	

**Internal Quality Control Review and Glossary**
**General**

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

**Holding Times**

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

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

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

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

**Units**

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

**Terms**

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

**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
N/A	Not applicable

**Asbestos Counter/Identifier:**

Chamath JHM Annakkage      Senior Analyst-Asbestos (NSW)

**Authorised by:**

Sayed Abu      Senior Analyst-Asbestos (NSW)



**Glenn Jackson**  
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



GHD Pty Ltd NSW  
 Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000



NATA Accredited  
 Accreditation Number 1261  
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

Attention: **Henry Luo**

Report **671060-S**  
 Project name **TOWNSON AND BURDEKIN RD**  
 Project ID **12511195**  
 Received Date **Aug 08, 2019**

Client Sample ID			BH02_0.1-0.2	BH02_0.4-0.5	BH02_1.2-1.3	BH02_2.1-2.2
Sample Matrix	LOR	Unit	Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au12474	S19-Au12475	S19-Au12476	S19-Au12478
Date Sampled			Aug 07, 2019	Aug 07, 2019	Aug 07, 2019	Aug 07, 2019
Test/Reference						
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	380	< 100	660	240
TRH >C34-C40	100	mg/kg	350	< 100	360	140
TRH >C10-C40 (total)*	100	mg/kg	730	< 100	1020	380
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	21	< 20	22	< 20
TRH C15-C28	50	mg/kg	120	< 50	220	90
TRH C29-C36	50	mg/kg	340	< 50	510	180
TRH C10-C36 (Total)	50	mg/kg	481	< 50	752	270
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	114	109	102	97
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			BH02_0.1-0.2	BH02_0.4-0.5	BH02_1.2-1.3	BH02_2.1-2.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au12474	S19-Au12475	S19-Au12476	S19-Au12478
Date Sampled			Aug 07, 2019	Aug 07, 2019	Aug 07, 2019	Aug 07, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	114	112	114	113
p-Terphenyl-d14 (surr.)	1	%	107	106	109	108
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.2	mg/kg	-	< 0.2	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.2	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.2	-	-
Dibutylchloroendate (surr.)	1	%	-	80	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	93	-	-
<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	-	-

Client Sample ID			BH02_0.1-0.2	BH02_0.4-0.5	BH02_1.2-1.3	BH02_2.1-2.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au12474	S19-Au12475	S19-Au12476	S19-Au12478
Date Sampled			Aug 07, 2019	Aug 07, 2019	Aug 07, 2019	Aug 07, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
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	%	-	99	-	-
<b>Phenols (Halogenated)</b>						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2,4,5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	-
2,4,6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	-
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	-
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	-
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	-
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	-
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	-
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	-
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2,4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	-
Dinoseb	20	mg/kg	< 20	< 20	< 20	-
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	-
Phenol-d6 (surr.)	1	%	113	116	118	-

Client Sample ID			BH02_0.1-0.2	BH02_0.4-0.5	BH02_1.2-1.3	BH02_2.1-2.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au12474	S19-Au12475	S19-Au12476	S19-Au12478
Date Sampled			Aug 07, 2019	Aug 07, 2019	Aug 07, 2019	Aug 07, 2019
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	7.6	8.3	4.5	4.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	11	26	15	20
Copper	5	mg/kg	53	35	53	28
Lead	5	mg/kg	18	19	11	14
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	21	23	12	10.0
Zinc	5	mg/kg	86	68	37	42
% Moisture	1	%	7.2	11	16	14

Client Sample ID			QC04	TRIP BLANK	R20 TRIP SPIKE	TP02_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au12480	S19-Au12481	S19-Au12482	S19-Au18717
Date Sampled			Aug 07, 2019	Aug 07, 2019	Aug 07, 2019	Aug 05, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	88	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	110	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	-	< 20
TRH >C10-C16	50	mg/kg	< 50	-	-	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	-	-	< 50
TRH >C16-C34	100	mg/kg	1200	-	-	260
TRH >C34-C40	100	mg/kg	560	-	-	110
TRH >C10-C40 (total)*	100	mg/kg	1760	-	-	370
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	110	< 20
TRH C10-C14	20	mg/kg	< 20	-	-	< 20
TRH C15-C28	50	mg/kg	420	-	-	62
TRH C29-C36	50	mg/kg	870	-	-	300
TRH C10-C36 (Total)	50	mg/kg	1290	-	-	362
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	110	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	110	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	110	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	110	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	110	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	110	< 0.3
4-Bromofluorobenzene (surr.)	1	%	97	115	105	82
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	-	1.2
Acenaphthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5

Client Sample ID			QC04	TRIP BLANK	R20TRIP SPIKE	TP02_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au12480	S19-Au12481	S19-Au12482	S19-Au18717
Date Sampled			Aug 07, 2019	Aug 07, 2019	Aug 07, 2019	Aug 05, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	-	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	111	-	-	103
p-Terphenyl-d14 (surr.)	1	%	105	-	-	109
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	-	< 0.05
a-BHC	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-BHC	0.05	mg/kg	-	-	-	< 0.05
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.05	mg/kg	-	-	-	< 0.05
Toxaphene	1	mg/kg	-	-	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Dibutylchloroendate (surr.)	1	%	-	-	-	110
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	100
<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

Client Sample ID			QC04	TRIP BLANK	R20 TRIP SPIKE	TP02_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au12480	S19-Au12481	S19-Au12482	S19-Au18717
Date Sampled			Aug 07, 2019	Aug 07, 2019	Aug 07, 2019	Aug 05, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
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	%	-	-	-	117
<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-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	-	< 0.2
2-Nitrophenol	1.0	mg/kg	-	-	-	< 1
2,4-Dimethylphenol	0.5	mg/kg	-	-	-	< 0.5
2,4-Dinitrophenol	5	mg/kg	-	-	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	-	< 0.4
4-Nitrophenol	5	mg/kg	-	-	-	< 5
Dinoseb	20	mg/kg	-	-	-	< 20

Client Sample ID			QC04	TRIP BLANK	R20 TRIP SPIKE	TP02_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au12480	S19-Au12481	S19-Au12482	S19-Au18717
Date Sampled			Aug 07, 2019	Aug 07, 2019	Aug 07, 2019	Aug 05, 2019
Test/Reference	LOR	Unit				
<b>Phenols (non-Halogenated)</b>						
Phenol	0.5	mg/kg	-	-	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	-	-	-	< 20
Phenol-d6 (surr.)	1	%	-	-	-	70
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	5.3	-	-	6.7
Cadmium	0.4	mg/kg	< 0.4	-	-	< 0.4
Chromium	5	mg/kg	17	-	-	36
Copper	5	mg/kg	30	-	-	48
Lead	5	mg/kg	11	-	-	20
Mercury	0.1	mg/kg	< 0.1	-	-	< 0.1
Nickel	5	mg/kg	6.5	-	-	41
Zinc	5	mg/kg	27	-	-	100
% Moisture	1	%	17	-	-	16

Client Sample ID			TP02_0.4-0.5	PC02_0.16-0.25	PC02_0.5-0.6	PC03_0.3-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18718	S19-Au18719	S19-Au18720	S19-Au18721
Date Sampled			Aug 05, 2019	Aug 05, 2019	Aug 05, 2019	Aug 05, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	75	59	58	82

Client Sample ID			TP02_0.4-0.5	PC02_0.16-0.25	PC02_0.5-0.6	PC03_0.3-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18718	S19-Au18719	S19-Au18720	S19-Au18721
Date Sampled			Aug 05, 2019	Aug 05, 2019	Aug 05, 2019	Aug 05, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	101	99	75	99
p-Terphenyl-d14 (surr.)	1	%	112	105	78	98
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	< 0.1
4,4'-DDD	0.05	mg/kg	-	< 0.05	-	< 0.05
4,4'-DDE	0.05	mg/kg	-	< 0.05	-	< 0.05
4,4'-DDT	0.05	mg/kg	-	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	< 0.05
Methoxychlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Toxaphene	1	mg/kg	-	< 1	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	< 0.1
Dibutylchloroendate (surr.)	1	%	-	105	-	98
Tetrachloro-m-xylene (surr.)	1	%	-	93	-	95



Client Sample ID			TP02_0.4-0.5 Soil S19-Au18718 Aug 05, 2019	PC02_0.16-0.25 Soil S19-Au18719 Aug 05, 2019	PC02_0.5-0.6 Soil S19-Au18720 Aug 05, 2019	PC03_0.3-0.5 Soil S19-Au18721 Aug 05, 2019
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Bolstar	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Coumaphos	2	mg/kg	-	< 2	-	< 2
Demeton-S	0.2	mg/kg	-	< 0.2	-	< 0.2
Demeton-O	0.2	mg/kg	-	< 0.2	-	< 0.2
Diazinon	0.2	mg/kg	-	< 0.2	-	< 0.2
Dichlorvos	0.2	mg/kg	-	< 0.2	-	< 0.2
Dimethoate	0.2	mg/kg	-	< 0.2	-	< 0.2
Disulfoton	0.2	mg/kg	-	< 0.2	-	< 0.2
EPN	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethion	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethoprop	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethyl parathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fenitrothion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fensulfothion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fenthion	0.2	mg/kg	-	< 0.2	-	< 0.2
Malathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Merphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Methyl parathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Mevinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Monocrotophos	2	mg/kg	-	< 2	-	< 2
Naled	0.2	mg/kg	-	< 0.2	-	< 0.2
Omethoate	2	mg/kg	-	< 2	-	< 2
Phorate	0.2	mg/kg	-	< 0.2	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Pyrazophos	0.2	mg/kg	-	< 0.2	-	< 0.2
Ronnel	0.2	mg/kg	-	< 0.2	-	< 0.2
Terbufos	0.2	mg/kg	-	< 0.2	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Tokuthion	0.2	mg/kg	-	< 0.2	-	< 0.2
Trichloronate	0.2	mg/kg	-	< 0.2	-	< 0.2
Triphenylphosphate (surr.)	1	%	-	94	-	94
<b>Phenols (Halogenated)</b>						
2-Chlorophenol	0.5	mg/kg	-	< 0.5	-	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	-	< 1	-	< 1
2,4,6-Trichlorophenol	1	mg/kg	-	< 1	-	< 1
2,6-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	-	< 1	-	< 1
Pentachlorophenol	1	mg/kg	-	< 1	-	< 1
Tetrachlorophenols - Total	10	mg/kg	-	< 10	-	< 10
Total Halogenated Phenol*	1	mg/kg	-	< 1	-	< 1

Client Sample ID			TP02_0.4-0.5	PC02_0.16-0.25	PC02_0.5-0.6	PC03_0.3-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18718	S19-Au18719	S19-Au18720	S19-Au18721
Date Sampled			Aug 05, 2019	Aug 05, 2019	Aug 05, 2019	Aug 05, 2019
Test/Reference	LOR	Unit				
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	< 20	-	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	< 5	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	< 0.2
2-Nitrophenol	1.0	mg/kg	-	< 1	-	< 1
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	< 0.5
2.4-Dinitrophenol	5	mg/kg	-	< 5	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	< 0.4
4-Nitrophenol	5	mg/kg	-	< 5	-	< 5
Dinoseb	20	mg/kg	-	< 20	-	< 20
Phenol	0.5	mg/kg	-	< 0.5	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	< 20
Phenol-d6 (surr.)	1	%	-	62	-	64
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	12	21	15	20
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	30	57	22	61
Copper	5	mg/kg	30	23	25	22
Lead	5	mg/kg	35	25	22	27
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	18	17	5.3	17
Zinc	5	mg/kg	180	38	15	37
<b>% Moisture</b>						
	1	%	19	15	25	9.7

Client Sample ID			PC03_0.7-0.9	TP03_0-0.1	QC01	TP03_0.2-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18722	S19-Au18723	S19-Au18724	S19-Au18725
Date Sampled			Aug 05, 2019	Aug 05, 2019	Aug 05, 2019	Aug 05, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	62	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	62	< 50
TRH >C16-C34	100	mg/kg	< 100	350	460	< 100
TRH >C34-C40	100	mg/kg	< 100	280	350	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	630	872	< 100
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	47	< 20
TRH C15-C28	50	mg/kg	< 50	140	210	< 50
TRH C29-C36	50	mg/kg	< 50	340	420	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	480	677	< 50

Client Sample ID			PC03_0.7-0.9	TP03_0-0.1	QC01	TP03_0.2-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18722	S19-Au18723	S19-Au18724	S19-Au18725
Date Sampled			Aug 05, 2019	Aug 05, 2019	Aug 05, 2019	Aug 05, 2019
Test/Reference	LOR	Unit				
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	97	110	100	94
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	94	60	86	79
p-Terphenyl-d14 (surr.)	1	%	100	89	80	120
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-

Client Sample ID			PC03_0.7-0.9	TP03_0-0.1	QC01	TP03_0.2-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18722	S19-Au18723	S19-Au18724	S19-Au18725
Date Sampled			Aug 05, 2019	Aug 05, 2019	Aug 05, 2019	Aug 05, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchloroendate (surr.)	1	%	-	60	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	84	-	-
<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	%	-	57	-	-

Client Sample ID			PC03_0.7-0.9	TP03_0-0.1	QC01	TP03_0.2-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18722	S19-Au18723	S19-Au18724	S19-Au18725
Date Sampled			Aug 05, 2019	Aug 05, 2019	Aug 05, 2019	Aug 05, 2019
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-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	-
2-Nitrophenol	1.0	mg/kg	-	< 1	-	-
2,4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	-
2,4-Dinitrophenol	5	mg/kg	-	< 5	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	-
4-Nitrophenol	5	mg/kg	-	< 5	-	-
Dinoseb	20	mg/kg	-	< 20	-	-
Phenol	0.5	mg/kg	-	< 0.5	-	-
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	-
Phenol-d6 (surr.)	1	%	-	39	-	-
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	17	2.6	2.8	18
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	42	27	31	47
Copper	5	mg/kg	31	56	80	22
Lead	5	mg/kg	21	9.7	11	34
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	14	60	68	10
Zinc	5	mg/kg	58	84	93	37
% Moisture	1	%	18	3.2	3.4	8.1

Client Sample ID			R20 <sup>TS</sup>	TB	PC04_0.2-0.3	PC04_0.5-0.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18727	S19-Au18728	S19-Au18729	S19-Au18730
Date Sampled			Aug 05, 2019	Aug 05, 2019	Aug 05, 2019	Aug 05, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	100	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	110	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	-	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	-	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	-	-	< 50	< 50
TRH >C16-C34	100	mg/kg	-	-	< 100	< 100
TRH >C34-C40	100	mg/kg	-	-	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	-	< 100	< 100

Client Sample ID			R20 TS Soil	TB Soil	PC04_0.2-0.3 Soil	PC04_0.5-0.7 Soil
Sample Matrix			S19-Au18727	S19-Au18728	S19-Au18729	S19-Au18730
Eurofins Sample No.			Aug 05, 2019	Aug 05, 2019	Aug 05, 2019	Aug 05, 2019
Date Sampled						
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	110	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	-	-	< 20	< 20
TRH C15-C28	50	mg/kg	-	-	< 50	< 50
TRH C29-C36	50	mg/kg	-	-	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	-	-	< 50	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	120	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	120	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	110	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	110	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	110	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	110	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	106	104	72	67
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	1.2	1.2
Acenaphthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	-	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	-	-	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	-	126	102
p-Terphenyl-d14 (surr.)	1	%	-	-	122	62
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4,4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-

Client Sample ID			R20 TS Soil	TB Soil	PC04_0.2-0.3 Soil	PC04_0.5-0.7 Soil
Sample Matrix			S19-Au18727	S19-Au18728	S19-Au18729	S19-Au18730
Eurofins Sample No.			Aug 05, 2019	Aug 05, 2019	Aug 05, 2019	Aug 05, 2019
Date Sampled						
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.05	mg/kg	-	-	< 0.05	-
Toxaphene	1	mg/kg	-	-	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchloroendate (surr.)	1	%	-	-	132	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	106	-
<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	-

Client Sample ID			R20 TS Soil	TB Soil	PC04_0.2-0.3 Soil	PC04_0.5-0.7 Soil
Sample Matrix			S19-Au18727	S19-Au18728	S19-Au18729	S19-Au18730
Eurofins Sample No.			Aug 05, 2019	Aug 05, 2019	Aug 05, 2019	Aug 05, 2019
Date Sampled						
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Trichloronate	0.2	mg/kg	-	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	-	-	142	-
<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-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	< 0.2	-
2-Nitrophenol	1.0	mg/kg	-	-	< 1	-
2,4-Dimethylphenol	0.5	mg/kg	-	-	< 0.5	-
2,4-Dinitrophenol	5	mg/kg	-	-	< 5	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	< 0.4	-
4-Nitrophenol	5	mg/kg	-	-	< 5	-
Dinoseb	20	mg/kg	-	-	< 20	-
Phenol	0.5	mg/kg	-	-	< 0.5	-
Total Non-Halogenated Phenol*	20	mg/kg	-	-	< 20	-
Phenol-d6 (surr.)	1	%	-	-	108	-
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	-	-	5.3	10
Cadmium	0.4	mg/kg	-	-	< 0.4	< 0.4
Chromium	5	mg/kg	-	-	9.5	12
Copper	5	mg/kg	-	-	9.3	22
Lead	5	mg/kg	-	-	16	10
Mercury	0.1	mg/kg	-	-	< 0.1	< 0.1
Nickel	5	mg/kg	-	-	7.2	< 5
Zinc	5	mg/kg	-	-	39	26
<b>% Moisture</b>						
	1	%	-	-	7.6	17

Client Sample ID			TP08_0.0-0.1 Soil	TP08_0.2-0.3 Soil	PC05_0.45-0.6 Soil	PC05_0.6-1.0 Soil
Sample Matrix			S19-Au18731	S19-Au18732	S19-Au18735	S19-Au18736
Eurofins Sample No.			Aug 06, 2019	Aug 06, 2019	Aug 06, 2019	Aug 06, 2019
Date Sampled						
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50



Client Sample ID			TP08_0.0-0.1	TP08_0.2-0.3	PC05_0.45-0.6	PC05_0.6-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18731	S19-Au18732	S19-Au18735	S19-Au18736
Date Sampled			Aug 06, 2019	Aug 06, 2019	Aug 06, 2019	Aug 06, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	55	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	55	< 50	< 50	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	81	89	85	91
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	110	103	74	96
p-Terphenyl-d14 (surr.)	1	%	107	97	72	86
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	-
4,4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	-
4,4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	-
4,4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-

Client Sample ID			TP08_0.0-0.1	TP08_0.2-0.3	PC05_0.45-0.6	PC05_0.6-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18731	S19-Au18732	S19-Au18735	S19-Au18736
Date Sampled			Aug 06, 2019	Aug 06, 2019	Aug 06, 2019	Aug 06, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Toxaphene	1	mg/kg	< 1	-	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	-
Dibutylchloroendate (surr.)	1	%	116	-	68	-
Tetrachloro-m-xylene (surr.)	1	%	97	-	64	-
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Coumaphos	2	mg/kg	< 2	-	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	-	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	-	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	-	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	-	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	-	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	-	< 0.2	-
EPN	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	-	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Monocrotophos	2	mg/kg	< 2	-	< 2	-
Naled	0.2	mg/kg	< 0.2	-	< 0.2	-
Omethoate	2	mg/kg	< 2	-	< 2	-
Phorate	0.2	mg/kg	< 0.2	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	-	< 0.2	-

Client Sample ID			TP08_0.0-0.1	TP08_0.2-0.3	PC05_0.45-0.6	PC05_0.6-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18731	S19-Au18732	S19-Au18735	S19-Au18736
Date Sampled			Aug 06, 2019	Aug 06, 2019	Aug 06, 2019	Aug 06, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Ronnel	0.2	mg/kg	< 0.2	-	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	-	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	133	-	74	-
<b>Phenols (Halogenated)</b>						
2-Chlorophenol	0.5	mg/kg	< 0.5	-	< 0.5	-
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	-	< 0.5	-
2,4,5-Trichlorophenol	1	mg/kg	< 1	-	< 1	-
2,4,6-Trichlorophenol	1	mg/kg	< 1	-	< 1	-
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	-	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	-	< 1	-
Pentachlorophenol	1	mg/kg	< 1	-	< 1	-
Tetrachlorophenols - Total	10	mg/kg	< 10	-	< 10	-
Total Halogenated Phenol*	1	mg/kg	< 1	-	< 1	-
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	-	< 20	-
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	-	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	< 0.2	-
2-Nitrophenol	1.0	mg/kg	< 1	-	< 1	-
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	-	< 0.5	-
2,4-Dinitrophenol	5	mg/kg	< 5	-	< 5	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	< 0.4	-
4-Nitrophenol	5	mg/kg	< 5	-	< 5	-
Dinoseb	20	mg/kg	< 20	-	< 20	-
Phenol	0.5	mg/kg	< 0.5	-	< 0.5	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	< 20	-
Phenol-d6 (surr.)	1	%	55	-	57	-
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	6.2	11	14	26
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	20	29	35	81
Copper	5	mg/kg	76	19	31	38
Lead	5	mg/kg	53	22	26	32
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	15	6.8	17	9.9
Zinc	5	mg/kg	110	29	48	50
<b>% Moisture</b>						
	1	%	5.1	11	9.6	14

Client Sample ID			TP09_0-0.1	TP09_0.5-0.6	QC02	BH03_0.3-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18737	S19-Au18738	S19-Au18739	S19-Au18740
Date Sampled			Aug 06, 2019	Aug 06, 2019	Aug 06, 2019	Aug 06, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	73	< 50	85	< 50
TRH C10-C36 (Total)	50	mg/kg	73	< 50	85	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	73	91	104	61
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	93	75	78	95
p-Terphenyl-d14 (surr.)	1	%	91	71	70	94

Client Sample ID			TP09_0-0.1	TP09_0.5-0.6	QC02	BH03_0.3-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18737	S19-Au18738	S19-Au18739	S19-Au18740
Date Sampled			Aug 06, 2019	Aug 06, 2019	Aug 06, 2019	Aug 06, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	-
a-BHC	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-BHC	0.05	mg/kg	< 0.05	-	-	-
d-BHC	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.05	mg/kg	< 0.05	-	-	-
Toxaphene	1	mg/kg	< 1	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	98	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	82	-	-	-
<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	-	-	-

Client Sample ID			TP09_0-0.1	TP09_0.5-0.6	QC02	BH03_0.3-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18737	S19-Au18738	S19-Au18739	S19-Au18740
Date Sampled			Aug 06, 2019	Aug 06, 2019	Aug 06, 2019	Aug 06, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
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	%	108	-	-	-
<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-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-	-
2-Nitrophenol	1.0	mg/kg	< 1	-	-	-
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-	-
2,4-Dinitrophenol	5	mg/kg	< 5	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-	-
4-Nitrophenol	5	mg/kg	< 5	-	-	-
Dinoseb	20	mg/kg	< 20	-	-	-
Phenol	0.5	mg/kg	< 0.5	-	-	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	-	-
Phenol-d6 (surr.)	1	%	67	-	-	-
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	5.5	11	4.6	8.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	24	27	17	18
Copper	5	mg/kg	56	20	57	22
Lead	5	mg/kg	51	22	48	9.5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	11	11	10.0	< 5
Zinc	5	mg/kg	110	33	83	20
% Moisture	1	%	6.1	10	7.7	12

Client Sample ID			BH03_0.1-0.2	TP10_0.5-0.6	TP10_0.1-0.2	BH04_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18741	S19-Au18742	S19-Au18743	S19-Au18751
Date Sampled			Aug 06, 2019	Aug 06, 2019	Aug 06, 2019	Aug 09, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	270
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	280
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	550
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	130
TRH C29-C36	50	mg/kg	< 50	< 50	80	260
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	80	390
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	90	82	88	76
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	85	87	77	125
p-Terphenyl-d14 (surr.)	1	%	75	81	77	121

Client Sample ID			BH03_0.1-0.2	TP10_0.5-0.6	TP10_0.1-0.2	BH04_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18741	S19-Au18742	S19-Au18743	S19-Au18751
Date Sampled			Aug 06, 2019	Aug 06, 2019	Aug 06, 2019	Aug 09, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	-	-	< 0.05	< 0.05
Toxaphene	1	mg/kg	-	-	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	-	-	89	137
Tetrachloro-m-xylene (surr.)	1	%	-	-	70	108
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	-	-	< 0.2	< 0.2
Bolstar	0.2	mg/kg	-	-	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	-	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	-	-	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	-	< 0.2	< 0.2
Coumaphos	2	mg/kg	-	-	< 2	< 2
Demeton-S	0.2	mg/kg	-	-	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	-	-	< 0.2	< 0.2
Diazinon	0.2	mg/kg	-	-	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	-	-	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	-	-	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	-	-	< 0.2	< 0.2
EPN	0.2	mg/kg	-	-	< 0.2	< 0.2
Ethion	0.2	mg/kg	-	-	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	-	-	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	-	-	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	-	-	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	-	-	< 0.2	< 0.2
Fenthion	0.2	mg/kg	-	-	< 0.2	< 0.2
Malathion	0.2	mg/kg	-	-	< 0.2	< 0.2
Merphos	0.2	mg/kg	-	-	< 0.2	< 0.2



Client Sample ID			BH03_0.1-0.2	TP10_0.5-0.6	TP10_0.1-0.2	BH04_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au18741	S19-Au18742	S19-Au18743	S19-Au18751
Date Sampled			Aug 06, 2019	Aug 06, 2019	Aug 06, 2019	Aug 09, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Methyl parathion	0.2	mg/kg	-	-	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	-	-	< 0.2	< 0.2
Monocrotophos	2	mg/kg	-	-	< 2	< 2
Naled	0.2	mg/kg	-	-	< 0.2	< 0.2
Omethoate	2	mg/kg	-	-	< 2	< 2
Phorate	0.2	mg/kg	-	-	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	-	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	-	-	< 0.2	< 0.2
Ronnel	0.2	mg/kg	-	-	< 0.2	< 0.2
Terbufos	0.2	mg/kg	-	-	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	-	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	-	-	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	-	-	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	-	-	91	146
<b>Phenols (Halogenated)</b>						
2-Chlorophenol	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1	-	< 1	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1	-	< 1	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	-	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	-	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	-	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	-	< 1	< 1
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	-	< 20	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	-	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	-	< 1	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5	-	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	-	< 5	< 5
Dinoseb	20	mg/kg	< 20	-	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	< 20	< 20
Phenol-d6 (surr.)	1	%	82	-	52	80
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	2.6	11	5.3	3.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	20	25	24	20
Copper	5	mg/kg	81	30	59	43
Lead	5	mg/kg	12	30	32	24
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	12	17	29	26
Zinc	5	mg/kg	55	78	82	77
% Moisture	1	%	8.5	12	9.9	5.6

Client Sample ID			BH04_0.4-0.5	QC05	R20TS
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S19-Au18752	S19-Au18753	S19-Au18755
Date Sampled			Aug 09, 2019	Aug 09, 2019	Aug 09, 2019
Test/Reference	LOR	Unit			
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>					
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	-	77
TRH C6-C10	20	mg/kg	< 20	-	77
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	< 100	-	-
TRH >C34-C40	100	mg/kg	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	-
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>					
TRH C6-C9	20	mg/kg	< 20	-	79
TRH C10-C14	20	mg/kg	< 20	-	-
TRH C15-C28	50	mg/kg	< 50	-	-
TRH C29-C36	50	mg/kg	< 50	-	-
TRH C10-C36 (Total)	50	mg/kg	< 50	-	-
<b>BTEX</b>					
Benzene	0.1	mg/kg	< 0.1	-	83
Toluene	0.1	mg/kg	< 0.1	-	82
Ethylbenzene	0.1	mg/kg	< 0.1	-	79
m&p-Xylenes	0.2	mg/kg	< 0.2	-	79
o-Xylene	0.1	mg/kg	< 0.1	-	78
Xylenes - Total	0.3	mg/kg	< 0.3	-	78
4-Bromofluorobenzene (surr.)	1	%	66	-	92
<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	%	88	-	-
p-Terphenyl-d14 (surr.)	1	%	126	-	-

Client Sample ID			BH04_0.4-0.5	QC05	R20TS
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S19-Au18752	S19-Au18753	S19-Au18755
Date Sampled			Aug 09, 2019	Aug 09, 2019	Aug 09, 2019
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-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-
2-Nitrophenol	1.0	mg/kg	< 1	-	-
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-
2,4-Dinitrophenol	5	mg/kg	< 5	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-
4-Nitrophenol	5	mg/kg	< 5	-	-
Dinoseb	20	mg/kg	< 20	-	-
Phenol	0.5	mg/kg	< 0.5	-	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	-
Phenol-d6 (surr.)	1	%	110	-	-
<b>Heavy Metals</b>					
Arsenic	2	mg/kg	5.0	4.5	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-
Chromium	5	mg/kg	23	20	-
Copper	5	mg/kg	13	16	-
Lead	5	mg/kg	14	12	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	-
Nickel	5	mg/kg	7.2	7.5	-
Zinc	5	mg/kg	16	17	-
% Moisture	1	%	13	13	-

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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>
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Aug 16, 2019	14 Days
Total Recoverable Hydrocarbons - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Aug 14, 2019	14 Days
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Aug 16, 2019	14 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Aug 16, 2019	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Aug 16, 2019	
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Aug 16, 2019	14 Days
Phenols (Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Aug 16, 2019	14 Days
Phenols (non-Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Aug 16, 2019	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Aug 16, 2019	180 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)	Melbourne	Aug 16, 2019	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8081)	Melbourne	Aug 16, 2019	14 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Aug 13, 2019	14 Days

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	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X		X		X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X		X		X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																				
<b>Perth Laboratory - NATA Site # 23736</b>																				
<b>External Laboratory</b>																				
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID															
1	BH02_0.1-0.2	Aug 07, 2019		Soil	S19-Au12474	X								X					X	
2	BH02_0.4-0.5	Aug 07, 2019		Soil	S19-Au12475	X						X		X					X	
3	BH02_1.2-1.3	Aug 07, 2019		Soil	S19-Au12476									X					X	
4	BH02_0.9-1.0	Aug 07, 2019		Soil	S19-Au12477				X											
5	BH02_2.1-2.2	Aug 07, 2019		Soil	S19-Au12478									X		X				
6	RB03	Aug 07, 2019		Water	S19-Au12479					X										
7	QC04	Aug 07, 2019		Soil	S19-Au12480									X		X				
8	TRIP BLANK	Aug 07, 2019		Soil	S19-Au12481															X
9	TRIP SPIKE	Aug 07, 2019		Soil	S19-Au12482															X

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<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail					Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X		X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>					X	X		X		X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																			
<b>Perth Laboratory - NATA Site # 23736</b>																			
10	TRIP SPIKE LAB	Aug 07, 2019		Soil	S19-Au12483														X
11	TP02_0-0.1	Aug 05, 2019		Soil	S19-Au18717	X				X			X				X		
12	TP02_0.4-0.5	Aug 05, 2019		Soil	S19-Au18718								X		X				
13	PC02_0.16-0.25	Aug 05, 2019		Soil	S19-Au18719	X				X			X				X		
14	PC02_0.5-0.6	Aug 05, 2019		Soil	S19-Au18720								X		X				
15	PC03_0.3-0.5	Aug 05, 2019		Soil	S19-Au18721	X				X			X				X		
16	PC03_0.7-0.9	Aug 05, 2019		Soil	S19-Au18722								X		X				
17	TP03_0-0.1	Aug 05, 2019		Soil	S19-Au18723	X				X			X				X		
18	QC01	Aug 05, 2019		Soil	S19-Au18724								X		X				
19	TP03_0.2-0.4	Aug 05, 2019		Soil	S19-Au18725								X		X				
20	RB01	Aug 05, 2019		Water	S19-Au18726				X										

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**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail					Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH		
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X		X	X	X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>					X	X		X		X	X	X	X	X	X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>																					
<b>Perth Laboratory - NATA Site # 23736</b>																					
21	TS	Aug 05, 2019		Soil	S19-Au18727															X	
22	TB	Aug 05, 2019		Soil	S19-Au18728																X
23	PC04_0.2-0.3	Aug 05, 2019		Soil	S19-Au18729	X					X		X				X				
24	PC04_0.5-0.7	Aug 05, 2019		Soil	S19-Au18730								X		X						
25	TP08_0.0-0.1	Aug 06, 2019		Soil	S19-Au18731	X					X		X				X				
26	TP08_0.2-0.3	Aug 06, 2019		Soil	S19-Au18732								X		X						
27	RB02	Aug 06, 2019		Water	S19-Au18733				X												
28	PC05_0.16-0.3	Aug 06, 2019		Soil	S19-Au18734	X															
29	PC05_0.45-0.6	Aug 06, 2019		Soil	S19-Au18735	X					X		X				X				
30	PC05_0.6-1.0	Aug 06, 2019		Soil	S19-Au18736								X		X						
31	TP09_0-0.1	Aug 06, 2019		Soil	S19-Au18737	X					X		X				X				
32	TP09_0.5-0.6	Aug 06, 2019		Soil	S19-Au18738								X		X						

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<b>Project ID:</b> 12511195		

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail			Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>					X		X	X	X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>			X	X		X	X	X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																	
<b>Perth Laboratory - NATA Site # 23736</b>																	
33	QC02	Aug 06, 2019									X		X				
34	BH03_0.3-1.0	Aug 06, 2019									X		X				
35	BH03_0.1-0.2	Aug 06, 2019									X				X		
36	TP10_0.5-0.6	Aug 06, 2019									X		X				
37	TP10_0.1-0.2	Aug 06, 2019							X		X				X		
38	BH02_0.1-0.2	Aug 07, 2019															
39	BH02_0.4-0.5	Aug 07, 2019															
40	BH02_1.2-1.3	Aug 07, 2019															
41	BH02_2.1-2.2	Aug 07, 2019															
42	QC04	Aug 07, 2019															
43	TS	Aug 07, 2019															
44	TB	Aug 07, 2019															



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<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X		X		X	X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X		X		X	X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																					
<b>Perth Laboratory - NATA Site # 23736</b>																					
45	BH04_0.1-0.2	Aug 09, 2019		Soil	S19-Au18751	X						X		X				X			
46	BH04_0.4-0.5	Aug 09, 2019		Soil	S19-Au18752									X				X			
47	QC05	Aug 09, 2019		Soil	S19-Au18753					X				X							
48	RB04	Aug 09, 2019		Water	S19-Au18754					X											
49	TS	Aug 09, 2019		Soil	S19-Au18755																X
50	TP02_0.7-0.8	Aug 05, 2019		Soil	S19-Au18756			X													
51	TP02_1.3-1.4	Aug 05, 2019		Soil	S19-Au18757			X													
52	TP02_2.3-2.4	Aug 05, 2019		Soil	S19-Au18758			X													
53	TP03_1.0-1.2	Aug 05, 2019		Soil	S19-Au18759			X													
54	TP08_0.6-0.7	Aug 06, 2019		Soil	S19-Au18760			X													
55	TP09_0.8-0.9	Aug 06, 2019		Soil	S19-Au18761			X													
56	TP10_1.1-1.2	Aug 06, 2019		Soil	S19-Au18762			X													

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<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X		X		X	X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X		X		X	X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																					
<b>Perth Laboratory - NATA Site # 23736</b>																					
57	BH02_0.9-1.0	Aug 07, 2019		Soil	S19-Au18763		X														
58	BH04_0.9-1.0	Aug 09, 2019		Soil	S19-Au18764			X													
59	BH04_1.9-2.0	Aug 09, 2019		Soil	S19-Au18765			X													
60	QC06	Aug 09, 2019		Soil	S19-Au18766			X													
61	QC03	Aug 09, 2019		Soil	S19-Au18767			X													
62	TB	Aug 09, 2019		Soil	S19-Au18768				X												
63	SPIKELAB	Aug 05, 2019		Soil	S19-Au18965																X
64	SPIKELAB	Aug 09, 2019		Soil	S19-Au18966																X
65	RB03	Aug 07, 2019		Water	S19-Au18969		X														
<b>Test Counts</b>						15	9	13	13	5	5	11	11	30	30	14	14	15	15	8	

**Internal Quality Control Review and Glossary**
**General**

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	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>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</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	
<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	
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>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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	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	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	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	
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>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>LCS - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
Naphthalene	%	84			70-130	Pass	
Naphthalene	%	93			70-130	Pass	
TRH C6-C10	%	79			70-130	Pass	
TRH C6-C10	%	92			70-130	Pass	
TRH >C10-C16	%	101			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>							
TRH C6-C9	%	81			70-130	Pass	
TRH C10-C14	%	110			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>BTEX</b>							
Benzene	%	100			70-130	Pass	
Toluene	%	94			70-130	Pass	
Ethylbenzene	%	90			70-130	Pass	
m&p-Xylenes	%	93			70-130	Pass	
o-Xylene	%	92			70-130	Pass	
Xylenes - Total	%	93			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Polycyclic Aromatic Hydrocarbons</b>							
Acenaphthene	%	119			70-130	Pass	
Acenaphthylene	%	130			70-130	Pass	
Anthracene	%	81			70-130	Pass	
Benz(a)anthracene	%	99			70-130	Pass	
Benzo(a)pyrene	%	128			70-130	Pass	
Benzo(b&i)fluoranthene	%	130			70-130	Pass	
Benzo(g,h,i)perylene	%	130			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(k)fluoranthene	%	124			70-130	Pass	
Chrysene	%	126			70-130	Pass	
Dibenz(a,h)anthracene	%	130			70-130	Pass	
Fluoranthene	%	128			70-130	Pass	
Fluorene	%	128			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	130			70-130	Pass	
Naphthalene	%	113			70-130	Pass	
Phenanthrene	%	128			70-130	Pass	
Pyrene	%	129			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Organochlorine Pesticides</b>							
Chlordanes - Total	%	90			70-130	Pass	
4,4'-DDD	%	92			70-130	Pass	
4,4'-DDE	%	93			70-130	Pass	
4,4'-DDT	%	75			70-130	Pass	
a-BHC	%	112			70-130	Pass	
Aldrin	%	93			70-130	Pass	
b-BHC	%	94			70-130	Pass	
d-BHC	%	126			70-130	Pass	
Dieldrin	%	94			70-130	Pass	
Endosulfan I	%	102			70-130	Pass	
Endosulfan II	%	87			70-130	Pass	
Endosulfan sulphate	%	74			70-130	Pass	
Endrin	%	87			70-130	Pass	
Endrin aldehyde	%	93			70-130	Pass	
Endrin ketone	%	87			70-130	Pass	
g-BHC (Lindane)	%	79			70-130	Pass	
Heptachlor	%	71			70-130	Pass	
Heptachlor epoxide	%	82			70-130	Pass	
Hexachlorobenzene	%	96			70-130	Pass	
Methoxychlor	%	74			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Organophosphorus Pesticides</b>							
Diazinon	%	82			70-130	Pass	
Dimethoate	%	91			70-130	Pass	
Ethion	%	85			70-130	Pass	
Fenitrothion	%	76			70-130	Pass	
Methyl parathion	%	92			70-130	Pass	
Mevinphos	%	73			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Phenols (Halogenated)</b>							
2-Chlorophenol	%	121			30-130	Pass	
2,4-Dichlorophenol	%	114			30-130	Pass	
2,4,5-Trichlorophenol	%	112			30-130	Pass	
2,4,6-Trichlorophenol	%	130			30-130	Pass	
2,6-Dichlorophenol	%	116			30-130	Pass	
4-Chloro-3-methylphenol	%	114			30-130	Pass	
Pentachlorophenol	%	117			30-130	Pass	
Tetrachlorophenols - Total	%	111			30-130	Pass	
<b>LCS - % Recovery</b>							
<b>Phenols (non-Halogenated)</b>							
2-Cyclohexyl-4,6-dinitrophenol	%	51			30-130	Pass	
2-Methyl-4,6-dinitrophenol	%	41			30-130	Pass	
2-Methylphenol (o-Cresol)	%	113			30-130	Pass	

Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code		
2-Nitrophenol	%	113	30-130	Pass			
2,4-Dimethylphenol	%	115	30-130	Pass			
2,4-Dinitrophenol	%	55	30-130	Pass			
3&4-Methylphenol (m&p-Cresol)	%	117	30-130	Pass			
4-Nitrophenol	%	118	30-130	Pass			
Dinoseb	%	91	30-130	Pass			
Phenol	%	114	30-130	Pass			
<b>LCS - % Recovery</b>							
<b>Heavy Metals</b>							
Arsenic	%	108	80-120	Pass			
Cadmium	%	82	80-120	Pass			
Chromium	%	111	80-120	Pass			
Copper	%	117	80-120	Pass			
Lead	%	118	80-120	Pass			
Mercury	%	100	75-125	Pass			
Nickel	%	111	80-120	Pass			
Zinc	%	109	80-120	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>							
<b>Organochlorine Pesticides</b>							
				Result 1			
Chlordanes - Total	M19-Au15717	NCP	%	73	70-130	Pass	
4,4'-DDD	M19-Au15717	NCP	%	77	70-130	Pass	
4,4'-DDE	M19-Au15717	NCP	%	75	70-130	Pass	
a-BHC	M19-Au15717	NCP	%	90	70-130	Pass	
Aldrin	M19-Au15717	NCP	%	78	70-130	Pass	
b-BHC	M19-Au15717	NCP	%	118	70-130	Pass	
d-BHC	M19-Au15717	NCP	%	91	70-130	Pass	
Dieldrin	M19-Au15717	NCP	%	85	70-130	Pass	
Endosulfan I	M19-Au15717	NCP	%	71	70-130	Pass	
Endosulfan II	M19-Au15717	NCP	%	72	70-130	Pass	
Endosulfan sulphate	M19-Au15717	NCP	%	80	70-130	Pass	
Endrin	M19-Au15717	NCP	%	80	70-130	Pass	
Endrin aldehyde	M19-Au15717	NCP	%	100	70-130	Pass	
Endrin ketone	M19-Au15717	NCP	%	92	70-130	Pass	
g-BHC (Lindane)	M19-Au15717	NCP	%	101	70-130	Pass	
Heptachlor	M19-Au15717	NCP	%	88	70-130	Pass	
Heptachlor epoxide	M19-Au15717	NCP	%	89	70-130	Pass	
Hexachlorobenzene	M19-Au15717	NCP	%	100	70-130	Pass	
<b>Spike - % Recovery</b>							
<b>Organophosphorus Pesticides</b>							
				Result 1			
Diazinon	S19-Au07057	NCP	%	96	70-130	Pass	
Dimethoate	S19-Au07057	NCP	%	113	70-130	Pass	
Ethion	S19-Au07057	NCP	%	76	70-130	Pass	
Fenitrothion	S19-Au07057	NCP	%	94	70-130	Pass	
Methyl parathion	S19-Au07057	NCP	%	88	70-130	Pass	
Mevinphos	S19-Au07057	NCP	%	79	70-130	Pass	
<b>Spike - % Recovery</b>							
<b>Phenols (non-Halogenated)</b>							
				Result 1			
2-Methyl-4,6-dinitrophenol	S19-Au20172	NCP	%	72	30-130	Pass	
2,4-Dinitrophenol	S19-Au20172	NCP	%	49	30-130	Pass	
<b>Spike - % Recovery</b>							
<b>Heavy Metals</b>							
				Result 1			
Arsenic	S19-Au18720	CP	%	109	75-125	Pass	
Cadmium	S19-Au18720	CP	%	86	75-125	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Chromium	S19-Au18720	CP	%	107		75-125	Pass	
Copper	S19-Au18720	CP	%	114		75-125	Pass	
Lead	S19-Au18720	CP	%	109		75-125	Pass	
Mercury	S19-Au18720	CP	%	97		70-130	Pass	
Nickel	S19-Au18720	CP	%	108		75-125	Pass	
Zinc	S19-Au18720	CP	%	108		75-125	Pass	
<b>Spike - % Recovery</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1				
Acenaphthene	S19-Au18725	CP	%	88		70-130	Pass	
Acenaphthylene	S19-Au18725	CP	%	87		70-130	Pass	
Anthracene	S19-Au18725	CP	%	73		70-130	Pass	
Benz(a)anthracene	S19-Au18725	CP	%	92		70-130	Pass	
Benzo(a)pyrene	S19-Au18725	CP	%	80		70-130	Pass	
Benzo(b&j)fluoranthene	S19-Au18725	CP	%	77		70-130	Pass	
Benzo(g,h,i)perylene	S19-Au18725	CP	%	100		70-130	Pass	
Benzo(k)fluoranthene	S19-Au18725	CP	%	82		70-130	Pass	
Chrysene	S19-Au18725	CP	%	94		70-130	Pass	
Dibenz(a,h)anthracene	S19-Au18725	CP	%	92		70-130	Pass	
Fluoranthene	S19-Au18725	CP	%	99		70-130	Pass	
Fluorene	S19-Au18725	CP	%	89		70-130	Pass	
Indeno(1,2,3-cd)pyrene	S19-Au18725	CP	%	89		70-130	Pass	
Naphthalene	S19-Au18725	CP	%	87		70-130	Pass	
Phenanthrene	S19-Au18725	CP	%	85		70-130	Pass	
Pyrene	S19-Au18725	CP	%	99		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Phenols (Halogenated)</b>				Result 1				
2-Chlorophenol	S19-Au18725	CP	%	90		30-130	Pass	
2,4-Dichlorophenol	S19-Au18725	CP	%	81		30-130	Pass	
2,4,5-Trichlorophenol	S19-Au18725	CP	%	74		30-130	Pass	
2,4,6-Trichlorophenol	S19-Au18725	CP	%	73		30-130	Pass	
2,6-Dichlorophenol	S19-Au18725	CP	%	81		30-130	Pass	
4-Chloro-3-methylphenol	S19-Au18725	CP	%	76		30-130	Pass	
Pentachlorophenol	S19-Au18725	CP	%	59		30-130	Pass	
Tetrachlorophenols - Total	S19-Au18725	CP	%	81		30-130	Pass	
<b>Spike - % Recovery</b>								
<b>Phenols (non-Halogenated)</b>				Result 1				
2-Cyclohexyl-4,6-dinitrophenol	S19-Au18725	CP	%	53		30-130	Pass	
2-Methylphenol (o-Cresol)	S19-Au18725	CP	%	76		30-130	Pass	
2-Nitrophenol	S19-Au18725	CP	%	71		30-130	Pass	
2,4-Dimethylphenol	S19-Au18725	CP	%	50		30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S19-Au18725	CP	%	80		30-130	Pass	
4-Nitrophenol	S19-Au18725	CP	%	64		30-130	Pass	
Dinoseb	S19-Au18725	CP	%	35		30-130	Pass	
Phenol	S19-Au18725	CP	%	93		30-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1				
Naphthalene	S19-Au18730	CP	%	75		70-130	Pass	
TRH C6-C10	S19-Au18730	CP	%	76		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1				
TRH C6-C9	S19-Au18730	CP	%	83		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>BTEX</b>				Result 1				
Benzene	S19-Au18730	CP	%	75		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Toluene	S19-Au18730	CP	%	80		70-130	Pass	
Ethylbenzene	S19-Au18730	CP	%	83		70-130	Pass	
m&p-Xylenes	S19-Au18730	CP	%	79		70-130	Pass	
o-Xylene	S19-Au18730	CP	%	76		70-130	Pass	
Xylenes - Total	S19-Au18730	CP	%	78		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Heavy Metals</b>				Result 1				
Arsenic	S19-Au18735	CP	%	108		75-125	Pass	
Cadmium	S19-Au18735	CP	%	86		75-125	Pass	
Chromium	S19-Au18735	CP	%	110		75-125	Pass	
Copper	S19-Au18735	CP	%	117		75-125	Pass	
Lead	S19-Au18735	CP	%	114		75-125	Pass	
Mercury	S19-Au18735	CP	%	97		70-130	Pass	
Nickel	S19-Au18735	CP	%	112		75-125	Pass	
Zinc	S19-Au18735	CP	%	130		75-125	Fail	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1				
Naphthalene	S19-Au18740	CP	%	113		70-130	Pass	
TRH C6-C10	S19-Au18740	CP	%	110		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1				
TRH C6-C9	S19-Au18740	CP	%	119		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>BTEX</b>				Result 1				
Benzene	S19-Au18740	CP	%	98		70-130	Pass	
Toluene	S19-Au18740	CP	%	118		70-130	Pass	
Ethylbenzene	S19-Au18740	CP	%	116		70-130	Pass	
m&p-Xylenes	S19-Au18740	CP	%	114		70-130	Pass	
o-Xylene	S19-Au18740	CP	%	130		70-130	Pass	
Xylenes - Total	S19-Au18740	CP	%	119		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1				
Acenaphthene	S19-Au18740	CP	%	95		70-130	Pass	
Acenaphthylene	S19-Au18740	CP	%	95		70-130	Pass	
Anthracene	S19-Au18740	CP	%	106		70-130	Pass	
Benz(a)anthracene	S19-Au18740	CP	%	78		70-130	Pass	
Benzo(a)pyrene	S19-Au18740	CP	%	86		70-130	Pass	
Benzo(b&j)fluoranthene	S19-Au18740	CP	%	81		70-130	Pass	
Benzo(g,h,i)perylene	S19-Au18740	CP	%	79		70-130	Pass	
Benzo(k)fluoranthene	S19-Au18740	CP	%	105		70-130	Pass	
Chrysene	S19-Au18740	CP	%	107		70-130	Pass	
Dibenz(a,h)anthracene	S19-Au18740	CP	%	92		70-130	Pass	
Fluoranthene	S19-Au18740	CP	%	91		70-130	Pass	
Fluorene	S19-Au18740	CP	%	96		70-130	Pass	
Indeno(1,2,3-cd)pyrene	S19-Au18740	CP	%	80		70-130	Pass	
Naphthalene	S19-Au18740	CP	%	98		70-130	Pass	
Phenanthrene	S19-Au18740	CP	%	83		70-130	Pass	
Pyrene	S19-Au18740	CP	%	101		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Phenols (Halogenated)</b>				Result 1				
2-Chlorophenol	S19-Au18740	CP	%	85		30-130	Pass	
2,4-Dichlorophenol	S19-Au18740	CP	%	73		30-130	Pass	
2,4,5-Trichlorophenol	S19-Au18740	CP	%	103		30-130	Pass	
2,4,6-Trichlorophenol	S19-Au18740	CP	%	54		30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2,6-Dichlorophenol	S19-Au18740	CP	%	84			30-130	Pass	
4-Chloro-3-methylphenol	S19-Au18740	CP	%	69			30-130	Pass	
Pentachlorophenol	S19-Au18740	CP	%	56			30-130	Pass	
Tetrachlorophenols - Total	S19-Au18740	CP	%	79			30-130	Pass	
<b>Spike - % Recovery</b>									
<b>Phenols (non-Halogenated)</b>				Result 1					
2-Methylphenol (o-Cresol)	S19-Au18740	CP	%	80			30-130	Pass	
2-Nitrophenol	S19-Au18740	CP	%	65			30-130	Pass	
2,4-Dimethylphenol	S19-Au18740	CP	%	67			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S19-Au18740	CP	%	81			30-130	Pass	
4-Nitrophenol	S19-Au18740	CP	%	48			30-130	Pass	
Dinoseb	S19-Au18740	CP	%	43			30-130	Pass	
Phenol	S19-Au18740	CP	%	82			30-130	Pass	
<b>Spike - % Recovery</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1					
TRH >C10-C16	S19-Au18741	CP	%	99			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1					
TRH C10-C14	S19-Au18741	CP	%	115			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Heavy Metals</b>				Result 1					
Arsenic	S19-Au18752	CP	%	88			75-125	Pass	
Cadmium	S19-Au18752	CP	%	103			75-125	Pass	
Chromium	S19-Au18752	CP	%	94			75-125	Pass	
Copper	S19-Au18752	CP	%	93			75-125	Pass	
Lead	S19-Au18752	CP	%	93			75-125	Pass	
Mercury	S19-Au18752	CP	%	104			70-130	Pass	
Nickel	S19-Au18752	CP	%	91			75-125	Pass	
Zinc	S19-Au18752	CP	%	95			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH >C10-C16	S19-Au12475	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S19-Au12475	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S19-Au12475	CP	mg/kg	< 100	< 100	<1	30%	Pass	
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH C10-C14	S19-Au12475	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S19-Au12475	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S19-Au12475	CP	mg/kg	< 50	< 50	<1	30%	Pass	
<b>Duplicate</b>									
<b>Organochlorine Pesticides</b>				Result 1	Result 2	RPD			
Chlordanes - Total	S19-Au12475	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4,4'-DDD	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDE	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDT	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Endrin	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S19-Au12475	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S19-Au12475	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Toxaphene	S19-Au12475	CP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S19-Au12476	CP	%	16	15	7.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S19-Au18719	CP	mg/kg	21	21	1.0	30%	Pass
Cadmium	S19-Au18719	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Au18719	CP	mg/kg	57	56	2.0	30%	Pass
Copper	S19-Au18719	CP	mg/kg	23	27	15	30%	Pass
Lead	S19-Au18719	CP	mg/kg	25	24	2.0	30%	Pass
Mercury	S19-Au18719	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S19-Au18719	CP	mg/kg	17	17	4.0	30%	Pass
Zinc	S19-Au18719	CP	mg/kg	38	37	3.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S19-Au18719	CP	%	15	14	1.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S19-Au18720	CP	mg/kg	15	16	1.0	30%	Pass
Cadmium	S19-Au18720	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Au18720	CP	mg/kg	22	22	3.0	30%	Pass
Copper	S19-Au18720	CP	mg/kg	25	26	4.0	30%	Pass
Lead	S19-Au18720	CP	mg/kg	22	23	2.0	30%	Pass
Mercury	S19-Au18720	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S19-Au18720	CP	mg/kg	5.3	5.5	4.0	30%	Pass
Zinc	S19-Au18720	CP	mg/kg	15	16	4.0	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S19-Au18729	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S19-Au18729	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S19-Au18729	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S19-Au18729	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S19-Au18729	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S19-Au18729	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S19-Au18729	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S19-Au18729	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S19-Au18729	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S19-Au18732	CP	%	11	11	2.0	30%	Pass

<b>Duplicate</b>								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Arsenic	S19-Au18735	CP	mg/kg	14	14	1.0	30%	Pass
Cadmium	S19-Au18735	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Au18735	CP	mg/kg	35	36	3.0	30%	Pass
Copper	S19-Au18735	CP	mg/kg	31	32	4.0	30%	Pass
Lead	S19-Au18735	CP	mg/kg	26	27	5.0	30%	Pass
Mercury	S19-Au18735	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S19-Au18735	CP	mg/kg	17	18	4.0	30%	Pass
Zinc	S19-Au18735	CP	mg/kg	48	50	3.0	30%	Pass
<b>Duplicate</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD		
Naphthalene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S19-Au18739	CP	mg/kg	< 20	< 20	<1	30%	Pass
<b>Duplicate</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD		
TRH C6-C9	S19-Au18739	CP	mg/kg	< 20	< 20	<1	30%	Pass
<b>Duplicate</b>								
<b>BTEX</b>				Result 1	Result 2	RPD		
Benzene	S19-Au18739	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S19-Au18739	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S19-Au18739	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S19-Au18739	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S19-Au18739	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S19-Au18739	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
<b>Duplicate</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD		
Acenaphthene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
<b>Duplicate</b>								
<b>Phenols (Halogenated)</b>				Result 1	Result 2	RPD		
2-Chlorophenol	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	S19-Au18739	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	S19-Au18739	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	S19-Au18739	CP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	S19-Au18739	CP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	S19-Au18739	CP	mg/kg	< 10	< 10	<1	30%	Pass

Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	S19-Au18739	CP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	S19-Au18739	CP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	S19-Au18739	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	S19-Au18739	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	S19-Au18739	CP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	S19-Au18739	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	S19-Au18739	CP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	S19-Au18739	CP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	S19-Au18739	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S19-Au18743	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S19-Au18743	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S19-Au18743	CP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfothion	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S19-Au18743	CP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S19-Au18743	CP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	S19-Au18743	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	S19-Au18743	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	S19-Au18743	CP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	S19-Au18743	CP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	S19-Au18743	CP	mg/kg	< 10	< 10	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	S19-Au18743	CP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	S19-Au18743	CP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	S19-Au18743	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	S19-Au18743	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	S19-Au18743	CP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	S19-Au18743	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	S19-Au18743	CP	mg/kg	< 5	< 5	<1	30%	Pass

<b>Duplicate</b>								
<b>Phenols (non-Halogenated)</b>				Result 1	Result 2	RPD		
Dinoseb	S19-Au18743	CP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	S19-Au18743	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
<b>Duplicate</b>								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Arsenic	S19-Au18751	CP	mg/kg	3.7	3.7	2.0	30%	Pass
Cadmium	S19-Au18751	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Au18751	CP	mg/kg	20	20	<1	30%	Pass
Copper	S19-Au18751	CP	mg/kg	43	42	3.0	30%	Pass
Lead	S19-Au18751	CP	mg/kg	24	24	2.0	30%	Pass
Mercury	S19-Au18751	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S19-Au18751	CP	mg/kg	26	26	1.0	30%	Pass
Zinc	S19-Au18751	CP	mg/kg	77	75	2.0	30%	Pass
<b>Duplicate</b>								
				Result 1	Result 2	RPD		
% Moisture	S19-Au18751	CP	%	5.6	6.1	8.0	30%	Pass
<b>Duplicate</b>								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Arsenic	S19-Au18752	CP	mg/kg	5.0	5.1	1.0	30%	Pass
Cadmium	S19-Au18752	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Au18752	CP	mg/kg	23	23	3.0	30%	Pass
Copper	S19-Au18752	CP	mg/kg	13	13	1.0	30%	Pass
Lead	S19-Au18752	CP	mg/kg	14	14	1.0	30%	Pass
Mercury	S19-Au18752	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S19-Au18752	CP	mg/kg	7.2	7.3	2.0	30%	Pass
Zinc	S19-Au18752	CP	mg/kg	16	16	<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
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

### Authorised By

Alena Bounkeua	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Gabriele Cordero	Senior Analyst-Metal (NSW)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)



### Glenn Jackson General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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GHD Pty Ltd NSW  
 Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 18217**

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

**Attention:** Henry Luo

**Report** 671060-W  
 Project name TOWNSON AND BURDEKIN RD  
 Project ID 12511195  
 Received Date Aug 08, 2019

Client Sample ID			RB03	RB01	RB02	RB04
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S19-Au12479	S19-Au18726	S19-Au18733	S19-Au18754
Date Sampled			Aug 07, 2019	Aug 05, 2019	Aug 06, 2019	Aug 09, 2019
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Zinc	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

**Sample History**

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

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

**Description**

Metals M8

**Testing Site**

Melbourne

**Extracted**

Aug 14, 2019

**Holding Time**

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 13, 2019 3:28 PM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 671060	<b>Due:</b> Aug 20, 2019
	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X		X		X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X		X		X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																				
<b>Perth Laboratory - NATA Site # 23736</b>																				
<b>External Laboratory</b>																				
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID															
1	BH02_0.1-0.2	Aug 07, 2019		Soil	S19-Au12474	X								X					X	
2	BH02_0.4-0.5	Aug 07, 2019		Soil	S19-Au12475	X						X		X					X	
3	BH02_1.2-1.3	Aug 07, 2019		Soil	S19-Au12476									X					X	
4	BH02_0.9-1.0	Aug 07, 2019		Soil	S19-Au12477				X											
5	BH02_2.1-2.2	Aug 07, 2019		Soil	S19-Au12478									X		X				
6	RB03	Aug 07, 2019		Water	S19-Au12479					X										
7	QC04	Aug 07, 2019		Soil	S19-Au12480									X		X				
8	TRIP BLANK	Aug 07, 2019		Soil	S19-Au12481															X
9	TRIP SPIKE	Aug 07, 2019		Soil	S19-Au12482															X

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 13, 2019 3:28 PM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	671060	<b>Due:</b>	Aug 20, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail					Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X		X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>					X	X		X		X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																			
<b>Perth Laboratory - NATA Site # 23736</b>																			
10	TRIP SPIKE LAB	Aug 07, 2019		Soil	S19-Au12483														X
11	TP02_0-0.1	Aug 05, 2019		Soil	S19-Au18717	X				X		X					X		
12	TP02_0.4-0.5	Aug 05, 2019		Soil	S19-Au18718							X		X					
13	PC02_0.16-0.25	Aug 05, 2019		Soil	S19-Au18719	X				X		X					X		
14	PC02_0.5-0.6	Aug 05, 2019		Soil	S19-Au18720							X		X					
15	PC03_0.3-0.5	Aug 05, 2019		Soil	S19-Au18721	X				X		X					X		
16	PC03_0.7-0.9	Aug 05, 2019		Soil	S19-Au18722							X		X					
17	TP03_0-0.1	Aug 05, 2019		Soil	S19-Au18723	X				X		X					X		
18	QC01	Aug 05, 2019		Soil	S19-Au18724							X		X					
19	TP03_0.2-0.4	Aug 05, 2019		Soil	S19-Au18725							X		X					
20	RB01	Aug 05, 2019		Water	S19-Au18726				X										

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 13, 2019 3:28 PM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	671060	<b>Due:</b>	Aug 20, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail					Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X		X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>					X	X		X		X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																			
<b>Perth Laboratory - NATA Site # 23736</b>																			
21	TS	Aug 05, 2019		Soil	S19-Au18727														X
22	TB	Aug 05, 2019		Soil	S19-Au18728														X
23	PC04_0.2-0.3	Aug 05, 2019		Soil	S19-Au18729	X				X		X					X		
24	PC04_0.5-0.7	Aug 05, 2019		Soil	S19-Au18730							X		X					
25	TP08_0.0-0.1	Aug 06, 2019		Soil	S19-Au18731	X				X		X					X		
26	TP08_0.2-0.3	Aug 06, 2019		Soil	S19-Au18732							X		X					
27	RB02	Aug 06, 2019		Water	S19-Au18733				X										
28	PC05_0.16-0.3	Aug 06, 2019		Soil	S19-Au18734	X													
29	PC05_0.45-0.6	Aug 06, 2019		Soil	S19-Au18735	X				X		X					X		
30	PC05_0.6-1.0	Aug 06, 2019		Soil	S19-Au18736							X		X					
31	TP09_0-0.1	Aug 06, 2019		Soil	S19-Au18737	X				X		X					X		
32	TP09_0.5-0.6	Aug 06, 2019		Soil	S19-Au18738							X		X					

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 13, 2019 3:28 PM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	671060	<b>Due:</b>	Aug 20, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail					Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X	X	X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>					X	X		X		X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																			
<b>Perth Laboratory - NATA Site # 23736</b>																			
33	QC02	Aug 06, 2019		Soil	S19-Au18739								X		X				
34	BH03_0.3-1.0	Aug 06, 2019		Soil	S19-Au18740	X							X		X				
35	BH03_0.1-0.2	Aug 06, 2019		Soil	S19-Au18741	X							X				X		
36	TP10_0.5-0.6	Aug 06, 2019		Soil	S19-Au18742								X		X				
37	TP10_0.1-0.2	Aug 06, 2019		Soil	S19-Au18743	X				X			X				X		
38	BH02_0.1-0.2	Aug 07, 2019		Soil	S19-Au18744		X												
39	BH02_0.4-0.5	Aug 07, 2019		Soil	S19-Au18745		X												
40	BH02_1.2-1.3	Aug 07, 2019		Soil	S19-Au18746		X												
41	BH02_2.1-2.2	Aug 07, 2019		Soil	S19-Au18747		X												
42	QC04	Aug 07, 2019		Soil	S19-Au18748		X												
43	TS	Aug 07, 2019		Soil	S19-Au18749		X												
44	TB	Aug 07, 2019		Soil	S19-Au18750		X												

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 13, 2019 3:28 PM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	671060	<b>Due:</b>	Aug 20, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X		X		X	X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X		X		X	X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																					
<b>Perth Laboratory - NATA Site # 23736</b>																					
45	BH04_0.1-0.2	Aug 09, 2019		Soil	S19-Au18751	X						X		X				X			
46	BH04_0.4-0.5	Aug 09, 2019		Soil	S19-Au18752									X				X			
47	QC05	Aug 09, 2019		Soil	S19-Au18753				X					X							
48	RB04	Aug 09, 2019		Water	S19-Au18754				X												
49	TS	Aug 09, 2019		Soil	S19-Au18755																X
50	TP02_0.7-0.8	Aug 05, 2019		Soil	S19-Au18756			X													
51	TP02_1.3-1.4	Aug 05, 2019		Soil	S19-Au18757			X													
52	TP02_2.3-2.4	Aug 05, 2019		Soil	S19-Au18758			X													
53	TP03_1.0-1.2	Aug 05, 2019		Soil	S19-Au18759			X													
54	TP08_0.6-0.7	Aug 06, 2019		Soil	S19-Au18760			X													
55	TP09_0.8-0.9	Aug 06, 2019		Soil	S19-Au18761			X													
56	TP10_1.1-1.2	Aug 06, 2019		Soil	S19-Au18762			X													



<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 13, 2019 3:28 PM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 671060	<b>Due:</b> Aug 20, 2019
	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail				Asbestos - AS4964	CANCELLED	HOLD	HOLD	Metals M8	Metals M8	Eurofins   mgt Suite B14	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X		X	X	X	X	X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>				X	X		X		X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>																		
<b>Perth Laboratory - NATA Site # 23736</b>																		
57	BH02_0.9-1.0	Aug 07, 2019	Soil	S19-Au18763	X													
58	BH04_0.9-1.0	Aug 09, 2019	Soil	S19-Au18764		X												
59	BH04_1.9-2.0	Aug 09, 2019	Soil	S19-Au18765		X												
60	QC06	Aug 09, 2019	Soil	S19-Au18766		X												
61	QC03	Aug 09, 2019	Soil	S19-Au18767		X												
62	TB	Aug 09, 2019	Soil	S19-Au18768			X											
63	SPIKELAB	Aug 05, 2019	Soil	S19-Au18965														X
64	SPIKELAB	Aug 09, 2019	Soil	S19-Au18966														X
65	RB03	Aug 07, 2019	Water	S19-Au18969		X												
<b>Test Counts</b>				15	9	13	13	5	5	11	11	30	30	14	14	15	15	8

**Internal Quality Control Review and Glossary**
**General**

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Heavy Metals</b>										
Arsenic			mg/L	< 0.001			0.001	Pass		
Cadmium			mg/L	< 0.0002			0.0002	Pass		
Chromium			mg/L	< 0.001			0.001	Pass		
Copper			mg/L	< 0.001			0.001	Pass		
Lead			mg/L	< 0.001			0.001	Pass		
Mercury			mg/L	< 0.0001			0.0001	Pass		
Nickel			mg/L	< 0.001			0.001	Pass		
Zinc			mg/L	< 0.005			0.005	Pass		
<b>LCS - % Recovery</b>										
<b>Heavy Metals</b>										
Arsenic			%	96			70-130	Pass		
Cadmium			%	95			70-130	Pass		
Chromium			%	99			70-130	Pass		
Copper			%	98			70-130	Pass		
Lead			%	97			70-130	Pass		
Mercury			%	95			70-130	Pass		
Nickel			%	99			70-130	Pass		
Zinc			%	95			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
<b>Spike - % Recovery</b>										
<b>Heavy Metals</b>										
				Result 1						
Arsenic			M19-Au19411	NCP	%	92	75-125	Pass		
Cadmium			M19-Au19411	NCP	%	97	75-125	Pass		
Chromium			M19-Au19411	NCP	%	102	75-125	Pass		
Copper			M19-Au19411	NCP	%	91	75-125	Pass		
Lead			M19-Au19411	NCP	%	92	75-125	Pass		
Mercury			M19-Au19411	NCP	%	98	70-130	Pass		
Nickel			M19-Au19411	NCP	%	96	75-125	Pass		
Zinc			M19-Au19411	NCP	%	95	75-125	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
<b>Duplicate</b>										
<b>Heavy Metals</b>										
				Result 1	Result 2	RPD				
Arsenic			M19-Au19411	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium			M19-Au19411	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium			M19-Au19411	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper			M19-Au19411	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Lead			M19-Au19411	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury			M19-Au19411	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel			M19-Au19411	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc			M19-Au19411	NCP	mg/L	< 0.005	< 0.005	<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

**Authorised By**

Alena Bounkeua	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Gabriele Cordero	Senior Analyst-Metal (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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# CHAIN OF CUSTODY RECORD

ABN 90 005 085 521

Sydney Laboratory  
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066  
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory  
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172  
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory  
Unit 2, 91 Leach Highway, Kewdale WA 6105  
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory  
2 Kingston Town Close, Oakleigh, VIC 3166  
03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Tom Frederick, Jake Vickers					
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQulS, Custom)		Esdat		Handed over by		Tom Frederick, Jake Vickers					
Contact Name		Henry Luo		Email for Invoice		Michelle Rodrigo		Email for Results		Henry.Luo@ghd.com		Containers		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)					
Phone No		0414090002		Matrix (Solid (S) Water (W))		asbestos (presence / ashence)		suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)		suite B14 (OCP, OPP)		suite B7 (TRH, BTEXN, PAH, 8 metals)		PFAS		8 metals		BTEX / TRH C6-C10	
Special Directions		Place all samples on Hold		1L Plastic		250mL Plastic		125mL Plastic		200mL Amber Glass		40mL VOA vial		500mL PFAS Bottle		Jar (Glass or HDPE)		Other (Asbestos AS4064, WA Guidelines)	
Purchase Order		12511195		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other ( Hold )		Sample Comments / Dangerous Goods Hazard Warning													
Quote ID No		-																	
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																
1	PC09_0.3-0.41	15/8/19	S	x	x	x									1 1				
2	PC09_0.5-0.6	15/8/19	S				x								1 1				
3	PC09_0.8-0.9	15/8/19	S				x								1 1				
4	PC09_1.4-1.5	15/8/19	S												1 1				
5	PC08_0.34-0.44	15/8/19	S	x	x	x									1 1				
6	PC08_0.45-0.55	15/8/19	S				X								1 1				
7	PC08_0.7-0.8	15/8/19	S				X								1 1				
8	PC08_1.0-1.1	15/8/19	S												1 1				
9	PC08_1.4-1.5	15/8/19	S												1 1				
10	PC07_0.4-0.5	15/8/19	S	X	X										1 1				
Total Counts															10 10				
Method of Shipment		<input checked="" type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time					
Eurofins   mgt Laboratory Use Only		Received By	<i>Rupam</i>	SYD   BNE   MEL   PER   ADL   NTL   DRW	Signature	Date	13 / 08 / 2019	Time	0.65625	Temperature	14.20C	Received By	Signature	Date	22/08/19	Time	11:29 AM	Report No	6-72730

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.



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**Brisbane Laboratory**  
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07 3902 4600 EnviroSampleQLD@eurofins.com

**Perth Laboratory**  
Unit 2, 91 Leach Highway, Kewdale WA 6105  
08 9251 9630 EnviroSampleWA@eurofins.com

**Melbourne Laboratory**  
2 Kingston Town Close, Oakleigh, VIC 3166  
03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Tom Frederick, Jake Vickers									
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQUIS, Custom)		Esdat		Handed over by		Tom Frederick, Jake Vickers									
Contact Name		Henry Luo		Analyses (Note: Where metals are requested, please specify "dil" or "filtered") SUITE code must be used to track SUITE Pricing.		asbestos (presence / absence)		suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)		suite B14 (OCP, OPP)		suite B7 (TRH, BTEXN, PAH, 8 metals)		PFAS		8 metals		BTEX / TRH C6-C10		Email for Invoice		Henry.Luo@ghd.com	
Phone No		0414090002																		Email for Results		Henry.Luo@ghd.com	
Special Directions		Place all samples on Hold		Containers		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input checked="" type="checkbox"/> Other ( Hold ) <small>* Surcharges apply</small>		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS bottle Jar (Glass or HDPE) Other (Asbestos AS4694, WA Guidelines)		Sample Comments / Dangerous Goods Hazard Warning											
Purchase Order		12511195																					
Quote ID No		-																					
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																				
1	PC07_0.6-0.7	15/8/9	S			x	x							1	1								
2	PC07_1.0-1.1	15/8/9	S											1	1								
3	PC07_1.4-1.5	15/8/9	S											1	1								
4	PC10_0.15-0.2	15/8/9	S		X									1	1								
5	PC10_0.5-0.6	15/8/9	S	x	x		X							1	1								
6	PC10_0.9-1.0	15/8/9	S				X							1	1								
7	PC10_1.4-1.5	15/8/9	S											1	1								
8	QC07	15/8/9	S				X							1	1								
9	QC08	15/8/9	S											1	1								
10	RB05	15/8/9	W					X						1	1								
Total Counts														1	1								
														1	1								
Method of Shipment		<input checked="" type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Temperature		Report No									
Eurofins   mgt Laboratory Use Only		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Temperature		Report No									
		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Temperature		Report No									

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Sydney Laboratory

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07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory

Unit 2, 91 Leach Highway, Kewdale WA 6105  
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory

2 Kingston Town Close, Oakleigh, VIC 3166  
03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Jake Vickers			
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQulS, Custom)		Esdat		Handed over by		Jake Vickers			
Contact Name		Henry Luo		<small>Analyses (Note: Where analyses are requested, please specify "Total" or "Filtered") SUITE code must be used to attach SUITE pricing</small> asbestos (presence / absence) suite B7a (TRH, BTEXN, PAH, phenols, 8 metals) suite B14 (OCP, OPP) suite B7 (TRH, BTEXN, PAH, 8 metals) PFAS 8 metals BTEX / TRH C6-C10										Email for Invoice		Henry.Luo@ghd.com	
Phone No		0414090002												Email for Results		Henry.Luo@ghd.com	
Special Directions		Place all samples on Hold												Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input checked="" type="checkbox"/> Other ( Hold )    * Surcharges apply	
Purchase Order		12511195												Containers		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS4964, WA Guidelines)	
Quote ID No		-												Sample Comments / Dangerous Goods Hazard Warning			
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	Trip Blank	15/8/19	W										2				
2	Trip Spike	6/8/19	W										2		if this spike sample expired, please do not proceed the analysis		
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
Total Counts								#					2				
Method of Shipment		<input checked="" type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time			
Eurofins   mgt Laboratory Use Only		Received By <i>[Signature]</i>		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date <i>22/08/19</i>		Time		Temperature		Report No			
		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time							

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

## #AU04\_Enviro\_Sample\_NSW

---

**From:** Henry Luo <Henry.Luo@ghd.com>  
**Sent:** Friday, 23 August 2019 9:05 AM  
**To:** #AU04\_Enviro\_Sample\_NSW  
**Cc:** Jake.Vickers@ghd.com; Thomas Frederick  
**Subject:** RE: Eurofins Sample Receipt Advice - Report 672730 : Site TOWNSON AND BURDEKIN RD (12511195)

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

Hi Rupan

Thanks for your email.

Please analyse suite B7 for PC10\_0.5-0.6.

Kind regards

Henry

**Henry Luo**  
**Senior Environmental Engineer - Contamination Assessment & Remediation**

### GHD

*Proudly employee owned*

T: + 61 2 9239 7044 | F: + 61 2 9239 7199 | V: 217044 | M: 0414 090 002 | E: [henry.luo@ghd.com](mailto:henry.luo@ghd.com)  
Level 15 133 Castlereagh St Sydney NSW 2000 Australia | <http://www.ghd.com/>

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Please consider the environment before printing this email

**From:** [EnviroSampleNSW@eurofins.com](mailto:EnviroSampleNSW@eurofins.com) <[EnviroSampleNSW@eurofins.com](mailto:EnviroSampleNSW@eurofins.com)>  
**Sent:** Thursday, 22 August 2019 3:02 PM  
**To:** Henry Luo <[Henry.Luo@ghd.com](mailto:Henry.Luo@ghd.com)>  
**Cc:** Jake Vickers <[Jake.Vickers@ghd.com](mailto:Jake.Vickers@ghd.com)>; Tom Frederick <[Thomas.Frederick@ghd.com](mailto:Thomas.Frederick@ghd.com)>  
**Subject:** Eurofins Sample Receipt Advice - Report 672730 : Site TOWNSON AND BURDEKIN RD (12511195)

Dear Valued Client,

Please confirm analysis for sample PC10\_0.5-0.6.

*Rupan  
23/08*

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins Analytical Services Manager as soon as possible to make certain that they get changed.



**GHD Pty Ltd NSW**  
**Level 15, 133 Castlereagh Street**  
**Sydney**  
**NSW 2000**



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 18217**

Accredited for compliance with ISO/IEC 17025–Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

**Attention:** Henry Luo  
**Report** 672730-AID  
**Project Name** TOWNSON AND BURDEKIN RD  
**Project ID** 12511195  
**Received Date** Aug 22, 2019  
**Date Reported** Aug 29, 2019

**Methodology:**

Asbestos Fibre  
 Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

*NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*

Unknown Mineral  
 Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

*NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*

Subsampling Soil  
 Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

*NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*

Bonded asbestos-  
 containing material  
 (ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

*NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*

Limit of Reporting

The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).

The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).

*NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

**Project Name** TOWNSON AND BURDEKIN RD  
**Project ID** 12511195  
**Date Sampled** Aug 15, 2019  
**Report** 672730-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
PC09_0.3-0.41	19-Au32787	Aug 15, 2019	Approximate Sample 205g Sample consisted of: Grey coarse-grained soil, glass, fragments of asphalt and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
PC08_0.34-0.44	19-Au32790	Aug 15, 2019	Approximate Sample 154g Sample consisted of: Grey coarse-grained soil, fragments of asphalt and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
PC07_0.4-0.5	19-Au32793	Aug 15, 2019	Approximate Sample 172g Sample consisted of: Grey coarse-grained soil, fragments of asphalt and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
PC10_0.5-0.6	19-Au32796	Aug 15, 2019	Approximate Sample 123g Sample consisted of: Grey coarse-grained soil, fragments of asphalt and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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>
Asbestos - LTM-ASB-8020	Sydney	Aug 22, 2019	Indefinite

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>		<b>Received:</b>	Aug 22, 2019 11:29 AM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	672730	<b>Due:</b>	Aug 29, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X							
<b>Brisbane Laboratory - NATA Site # 20794</b>													
<b>Perth Laboratory - NATA Site # 23736</b>													
<b>External Laboratory</b>													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	PC09_0.3-0.41	Aug 15, 2019		Soil	S19-Au32787	X			X	X		X	
2	PC09_0.5-0.6	Aug 15, 2019		Soil	S19-Au32788					X	X		
3	PC09_0.8-0.9	Aug 15, 2019		Soil	S19-Au32789					X	X		
4	PC08_0.34-0.44	Aug 15, 2019		Soil	S19-Au32790	X			X	X		X	
5	PC08_0.45-0.55	Aug 15, 2019		Soil	S19-Au32791					X	X		
6	PC08_0.7-0.8	Aug 15, 2019		Soil	S19-Au32792					X	X		
7	PC07_0.4-0.5	Aug 15, 2019		Soil	S19-Au32793	X				X		X	
8	PC07_0.6-0.7	Aug 15, 2019		Soil	S19-Au32794				X	X	X		

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>		<b>Received:</b>	Aug 22, 2019 11:29 AM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	672730	<b>Due:</b>	Aug 29, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X							
<b>Brisbane Laboratory - NATA Site # 20794</b>													
<b>Perth Laboratory - NATA Site # 23736</b>													
9	PC10_0.15-0.2	Aug 15, 2019		Soil	S19-Au32795				X		X		
10	PC10_0.5-0.6	Aug 15, 2019		Soil	S19-Au32796	X			X	X			
11	PC10_0.9-1.0	Aug 15, 2019		Soil	S19-Au32797				X	X			
12	QC07	Aug 15, 2019		Soil	S19-Au32798				X	X			
13	RB05	Aug 15, 2019		Water	S19-Au32799			X					
14	TRIP BLANK	Aug 15, 2019		Water	S19-Au32800							X	
15	TRIP SPIKE	Aug 06, 2019		Water	S19-Au32801							X	
16	PC09_1.4-1.5	Aug 15, 2019		Soil	S19-Au32802		X						
17	PC08_1.0-1.1	Aug 15, 2019		Soil	S19-Au32803		X						
18	PC08_1.4-1.5	Aug 15, 2019		Soil	S19-Au32804		X						
19	PC07_1.0-1.1	Aug 15, 2019		Soil	S19-Au32805		X						
20	PC07_1.4-1.5	Aug 15, 2019		Soil	S19-Au32806		X						

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>		<b>Received:</b>	Aug 22, 2019 11:29 AM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	672730	<b>Due:</b>	Aug 29, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X							
<b>Brisbane Laboratory - NATA Site # 20794</b>													
<b>Perth Laboratory - NATA Site # 23736</b>													
21	PC10_1.4-1.5	Aug 15, 2019		Soil	S19-Au32807		X						
22	QC08	Aug 15, 2019		Soil	S19-Au32808		X						
<b>Test Counts</b>						4	7	1	3	12	8	4	2

## Internal Quality Control Review and Glossary

### General

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

### Holding Times

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

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

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

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

### Units

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

### Terms

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

**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
N/A	Not applicable

**Asbestos Counter/Identifier:**

Chamath JHM Annakkage      Senior Analyst-Asbestos (NSW)

**Authorised by:**

Sayeed Abu      Senior Analyst-Asbestos (NSW)



**Glenn Jackson**  
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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GHD Pty Ltd NSW  
Level 15, 133 Castlereagh Street  
Sydney  
NSW 2000



NATA Accredited  
Accreditation Number 1261  
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing  
The results of the tests, calibrations and/or  
measurements included in this document are traceable  
to Australian/national standards.

Attention: **Henry Luo**

Report **672730-S**  
Project name **TOWNSON AND BURDEKIN RD**  
Project ID **12511195**  
Received Date **Aug 22, 2019**

Client Sample ID			PC09_0.3-0.41	PC09_0.5-0.6	PC09_0.8-0.9	PC08_0.34-0.44
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au32787	S19-Au32788	S19-Au32789	S19-Au32790
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	68	< 50	< 50	90
TRH C29-C36	50	mg/kg	150	< 50	< 50	200
TRH C10-C36 (Total)	50	mg/kg	218	< 50	< 50	290
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	79	81	77	63
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	160	< 100	< 100	220
TRH >C34-C40	100	mg/kg	150	< 100	< 100	170
TRH >C10-C40 (total)*	100	mg/kg	310	< 100	< 100	390
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	1.0	< 0.5	< 0.5	0.9
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.3	0.6	0.6	1.2
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.6	1.2	1.2	1.5
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	0.7	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	0.8	< 0.5	< 0.5	0.8
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	0.6	< 0.5	< 0.5	0.6
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	0.6	< 0.5	< 0.5	0.6
Chrysene	0.5	mg/kg	0.7	< 0.5	< 0.5	0.5

Client Sample ID			PC09_0.3-0.41	PC09_0.5-0.6	PC09_0.8-0.9	PC08_0.34-0.44
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au32787	S19-Au32788	S19-Au32789	S19-Au32790
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	1.7	< 0.5	< 0.5	1.1
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	0.9	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	1.6	< 0.5	< 0.5	1.4
Total PAH*	0.5	mg/kg	7.6	< 0.5	< 0.5	5
2-Fluorobiphenyl (surr.)	1	%	109	81	83	115
p-Terphenyl-d14 (surr.)	1	%	75	134	77	148
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Toxaphene	1	mg/kg	< 1	-	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	< 0.1
Dibutylchloroendate (surr.)	1	%	86	-	-	97
Tetrachloro-m-xylene (surr.)	1	%	115	-	-	111
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Bolstar	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Coumaphos	2	mg/kg	< 2	-	-	< 2
Demeton-S	0.2	mg/kg	< 0.2	-	-	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	-	-	< 0.2
Diazinon	0.2	mg/kg	< 0.2	-	-	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	-	-	< 0.2

Client Sample ID			PC09_0.3-0.41	PC09_0.5-0.6	PC09_0.8-0.9	PC08_0.34-0.44
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au32787	S19-Au32788	S19-Au32789	S19-Au32790
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Dimethoate	0.2	mg/kg	< 0.2	-	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	-	-	< 0.2
EPN	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethion	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Malathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Merphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Monocrotophos	2	mg/kg	< 2	-	-	< 2
Naled	0.2	mg/kg	< 0.2	-	-	< 0.2
Omethoate	2	mg/kg	< 2	-	-	< 2
Phorate	0.2	mg/kg	< 0.2	-	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	-	-	< 0.2
Ronnel	0.2	mg/kg	< 0.2	-	-	< 0.2
Terbufos	0.2	mg/kg	< 0.2	-	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	-	-	< 0.2
Triphenylphosphate (surr.)	1	%	103	-	-	117
<b>Phenols (Halogenated)</b>						
2-Chlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1	-	-	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1	-	-	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	-	-	< 1
Pentachlorophenol	1	mg/kg	< 1	-	-	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	-	-	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	-	-	< 1
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	-	-	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	-	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	-	-	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5	-	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-	< 0.4
4-Nitrophenol	5	mg/kg	< 5	-	-	< 5
Dinoseb	20	mg/kg	< 20	-	-	< 20
Phenol	0.5	mg/kg	< 0.5	-	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	-	< 20
Phenol-d6 (surr.)	1	%	106	-	-	106

Client Sample ID			PC09_0.3-0.41	PC09_0.5-0.6	PC09_0.8-0.9	PC08_0.34-0.44
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au32787	S19-Au32788	S19-Au32789	S19-Au32790
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	3.8	8.2	5.1	3.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	18	20	5.2	24
Copper	5	mg/kg	41	40	23	41
Lead	5	mg/kg	17	15	10	15
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	56	42	< 5	58
Zinc	5	mg/kg	95	82	16	87
<b>% Moisture</b>						
	1	%	16	15	14	13

Client Sample ID			PC08_0.45-0.55	PC08_0.7-0.8	PC07_0.4-0.5	PC07_0.6-0.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au32791	S19-Au32792	S19-Au32793	S19-Au32794
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	120	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	120	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	79	78	69	66
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	120	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	120	< 100
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			PC08_0.45-0.55	PC08_0.7-0.8	PC07_0.4-0.5	PC07_0.6-0.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au32791	S19-Au32792	S19-Au32793	S19-Au32794
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	75	80	75	95
p-Terphenyl-d14 (surr.)	1	%	100	91	74	65
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	-	-	< 0.1
4,4'-DDD	0.05	mg/kg	-	-	-	< 0.05
4,4'-DDE	0.05	mg/kg	-	-	-	< 0.05
4,4'-DDT	0.05	mg/kg	-	-	-	< 0.05
a-BHC	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-BHC	0.05	mg/kg	-	-	-	< 0.05
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.05	mg/kg	-	-	-	< 0.05
Toxaphene	1	mg/kg	-	-	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Dibutylchloroendate (surr.)	1	%	-	-	-	79
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	91
<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

Client Sample ID			PC08_0.45-0.55	PC08_0.7-0.8	PC07_0.4-0.5	PC07_0.6-0.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au32791	S19-Au32792	S19-Au32793	S19-Au32794
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
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	%	-	-	-	56
<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-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	< 0.2	-
2-Nitrophenol	1.0	mg/kg	-	-	< 1	-
2,4-Dimethylphenol	0.5	mg/kg	-	-	< 0.5	-
2,4-Dinitrophenol	5	mg/kg	-	-	< 5	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	< 0.4	-
4-Nitrophenol	5	mg/kg	-	-	< 5	-

Client Sample ID			PC08_0.45-0.55	PC08_0.7-0.8	PC07_0.4-0.5	PC07_0.6-0.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au32791	S19-Au32792	S19-Au32793	S19-Au32794
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Phenols (non-Halogenated)</b>						
Dinoseb	20	mg/kg	-	-	< 20	-
Phenol	0.5	mg/kg	-	-	< 0.5	-
Total Non-Halogenated Phenol*	20	mg/kg	-	-	< 20	-
Phenol-d6 (surr.)	1	%	-	-	92	-
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	16	11	3.2	12
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	28	14	39	28
Copper	5	mg/kg	22	26	52	43
Lead	5	mg/kg	28	19	16	24
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	19	5.4	90	40
Zinc	5	mg/kg	63	33	83	110
<b>% Moisture</b>						
	1	%	18	18	24	27

Client Sample ID			PC10_0.15-0.2	PC10_0.5-0.6	PC10_0.9-1.0	QC07
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au32795	S19-Au32796	S19-Au32797	S19-Au32798
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	110	69	< 50	< 50
TRH C29-C36	50	mg/kg	270	220	< 50	110
TRH C10-C36 (Total)	50	mg/kg	380	289	< 50	110
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	67	75	57	74
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	280	190	< 100	< 100
TRH >C34-C40	100	mg/kg	260	190	< 100	100
TRH >C10-C40 (total)*	100	mg/kg	540	380	< 100	100

Client Sample ID			PC10_0.15-0.2	PC10_0.5-0.6	PC10_0.9-1.0	QC07
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au32795	S19-Au32796	S19-Au32797	S19-Au32798
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	76	83	80	75
p-Terphenyl-d14 (surr.)	1	%	120	128	84	111
<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-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-	-
2-Nitrophenol	1.0	mg/kg	< 1	-	-	-
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-	-
2,4-Dinitrophenol	5	mg/kg	< 5	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-	-
4-Nitrophenol	5	mg/kg	< 5	-	-	-
Dinoseb	20	mg/kg	< 20	-	-	-
Phenol	0.5	mg/kg	< 0.5	-	-	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	-	-
Phenol-d6 (surr.)	1	%	96	-	-	-



Client Sample ID			PC10_0.15-0.2	PC10_0.5-0.6	PC10_0.9-1.0	QC07
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au32795	S19-Au32796	S19-Au32797	S19-Au32798
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	3.2	2.8	19	8.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	40	19	28	24
Copper	5	mg/kg	130	56	38	50
Lead	5	mg/kg	12	11	47	19
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	120	63	18	54
Zinc	5	mg/kg	92	70	69	110
<b>% Moisture</b>						
	1	%	15	8.9	27	19

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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>
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Aug 26, 2019	14 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Aug 26, 2019	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Aug 26, 2019	14 Days
<b>Eurofins   mgt Suite B7A</b>			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Aug 26, 2019	
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Aug 26, 2019	14 Days
Phenols (Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Aug 26, 2019	14 Days
Phenols (non-Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Aug 26, 2019	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Aug 26, 2019	180 Days
<b>Eurofins   mgt Suite B14</b>			
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)	Melbourne	Aug 26, 2019	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8081)	Melbourne	Aug 26, 2019	14 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Melbourne	Aug 22, 2019	14 Days

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b>	<b>Received:</b> Aug 22, 2019 11:29 AM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 672730	<b>Due:</b> Aug 29, 2019
<b>Project Name:</b> TOWNSON AND BURDEKIN RD	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
<b>Project ID:</b> 12511195	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X							
<b>Brisbane Laboratory - NATA Site # 20794</b>													
<b>Perth Laboratory - NATA Site # 23736</b>													
<b>External Laboratory</b>													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	PC09_0.3-0.41	Aug 15, 2019		Soil	S19-Au32787	X			X	X		X	
2	PC09_0.5-0.6	Aug 15, 2019		Soil	S19-Au32788					X	X		
3	PC09_0.8-0.9	Aug 15, 2019		Soil	S19-Au32789					X	X		
4	PC08_0.34-0.44	Aug 15, 2019		Soil	S19-Au32790	X			X	X		X	
5	PC08_0.45-0.55	Aug 15, 2019		Soil	S19-Au32791					X	X		
6	PC08_0.7-0.8	Aug 15, 2019		Soil	S19-Au32792					X	X		
7	PC07_0.4-0.5	Aug 15, 2019		Soil	S19-Au32793	X				X		X	
8	PC07_0.6-0.7	Aug 15, 2019		Soil	S19-Au32794				X	X	X		

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>		<b>Received:</b>	Aug 22, 2019 11:29 AM
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<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X							
<b>Brisbane Laboratory - NATA Site # 20794</b>													
<b>Perth Laboratory - NATA Site # 23736</b>													
9	PC10_0.15-0.2	Aug 15, 2019		Soil	S19-Au32795				X		X		
10	PC10_0.5-0.6	Aug 15, 2019		Soil	S19-Au32796	X			X	X			
11	PC10_0.9-1.0	Aug 15, 2019		Soil	S19-Au32797				X	X			
12	QC07	Aug 15, 2019		Soil	S19-Au32798				X	X			
13	RB05	Aug 15, 2019		Water	S19-Au32799			X					
14	TRIP BLANK	Aug 15, 2019		Water	S19-Au32800								X
15	TRIP SPIKE	Aug 06, 2019		Water	S19-Au32801								X
16	PC09_1.4-1.5	Aug 15, 2019		Soil	S19-Au32802		X						
17	PC08_1.0-1.1	Aug 15, 2019		Soil	S19-Au32803		X						
18	PC08_1.4-1.5	Aug 15, 2019		Soil	S19-Au32804		X						
19	PC07_1.0-1.1	Aug 15, 2019		Soil	S19-Au32805		X						
20	PC07_1.4-1.5	Aug 15, 2019		Soil	S19-Au32806		X						

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b>	<b>Received:</b> Aug 22, 2019 11:29 AM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 672730	<b>Due:</b> Aug 29, 2019
	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
<b>Project Name:</b> TOWNSON AND BURDEKIN RD	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project ID:</b> 12511195		

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X							
<b>Brisbane Laboratory - NATA Site # 20794</b>													
<b>Perth Laboratory - NATA Site # 23736</b>													
21	PC10_1.4-1.5	Aug 15, 2019		Soil	S19-Au32807		X						
22	QC08	Aug 15, 2019		Soil	S19-Au32808		X						
<b>Test Counts</b>						4	7	1	3	12	8	4	2

**Internal Quality Control Review and Glossary**
**General**

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</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	
<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	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
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>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>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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	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	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	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	



Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
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-Methylphenol (o-Cresol)	mg/kg	< 0.2		0.2	Pass	
2-Nitrophenol	mg/kg	< 1		1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5		0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5		5	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>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>LCS - % Recovery</b>						
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	%	118		70-130	Pass	
TRH C10-C14	%	92		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>BTEX</b>						
Benzene	%	96		70-130	Pass	
Toluene	%	103		70-130	Pass	
Ethylbenzene	%	102		70-130	Pass	
m&p-Xylenes	%	101		70-130	Pass	
Xylenes - Total	%	101		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene	%	100		70-130	Pass	
TRH C6-C10	%	105		70-130	Pass	
TRH >C10-C16	%	83		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Polycyclic Aromatic Hydrocarbons</b>						
Acenaphthene	%	88		70-130	Pass	
Acenaphthylene	%	89		70-130	Pass	
Anthracene	%	77		70-130	Pass	
Benz(a)anthracene	%	90		70-130	Pass	
Benzo(a)pyrene	%	83		70-130	Pass	
Benzo(b&j)fluoranthene	%	109		70-130	Pass	
Benzo(g,h,i)perylene	%	103		70-130	Pass	
Benzo(k)fluoranthene	%	119		70-130	Pass	
Chrysene	%	96		70-130	Pass	
Dibenz(a,h)anthracene	%	107		70-130	Pass	
Fluoranthene	%	99		70-130	Pass	
Fluorene	%	90		70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Indeno(1,2,3-cd)pyrene	%	99			70-130	Pass	
Naphthalene	%	88			70-130	Pass	
Phenanthrene	%	80			70-130	Pass	
Pyrene	%	100			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Organochlorine Pesticides</b>							
Chlordanes - Total	%	90			70-130	Pass	
4,4'-DDD	%	126			70-130	Pass	
4,4'-DDE	%	78			70-130	Pass	
4,4'-DDT	%	78			70-130	Pass	
a-BHC	%	82			70-130	Pass	
Aldrin	%	83			70-130	Pass	
b-BHC	%	87			70-130	Pass	
d-BHC	%	91			70-130	Pass	
Dieldrin	%	88			70-130	Pass	
Endosulfan I	%	89			70-130	Pass	
Endosulfan II	%	92			70-130	Pass	
Endosulfan sulphate	%	84			70-130	Pass	
Endrin	%	112			70-130	Pass	
Endrin aldehyde	%	73			70-130	Pass	
Endrin ketone	%	90			70-130	Pass	
g-BHC (Lindane)	%	94			70-130	Pass	
Heptachlor	%	123			70-130	Pass	
Heptachlor epoxide	%	89			70-130	Pass	
Hexachlorobenzene	%	83			70-130	Pass	
Methoxychlor	%	114			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Organophosphorus Pesticides</b>							
Diazinon	%	72			70-130	Pass	
Dimethoate	%	91			70-130	Pass	
Ethion	%	99			70-130	Pass	
Fenitrothion	%	108			70-130	Pass	
Methyl parathion	%	110			70-130	Pass	
Mevinphos	%	73			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Phenols (Halogenated)</b>							
2-Chlorophenol	%	107			30-130	Pass	
2,4-Dichlorophenol	%	94			30-130	Pass	
2,4,5-Trichlorophenol	%	81			30-130	Pass	
2,4,6-Trichlorophenol	%	76			30-130	Pass	
2,6-Dichlorophenol	%	94			30-130	Pass	
4-Chloro-3-methylphenol	%	83			30-130	Pass	
Pentachlorophenol	%	66			30-130	Pass	
Tetrachlorophenols - Total	%	89			30-130	Pass	
<b>LCS - % Recovery</b>							
<b>Phenols (non-Halogenated)</b>							
2-Cyclohexyl-4,6-dinitrophenol	%	38			30-130	Pass	
2-Methyl-4,6-dinitrophenol	%	35			30-130	Pass	
2-Methylphenol (o-Cresol)	%	98			30-130	Pass	
2-Nitrophenol	%	86			30-130	Pass	
2,4-Dimethylphenol	%	97			30-130	Pass	
2,4-Dinitrophenol	%	44			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	101			30-130	Pass	
4-Nitrophenol	%	60			30-130	Pass	

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Dinoseb			%	40		30-130	Pass	
Phenol			%	110		30-130	Pass	
<b>LCS - % Recovery</b>								
<b>Heavy Metals</b>								
Arsenic			%	115		80-120	Pass	
Cadmium			%	86		80-120	Pass	
Chromium			%	110		80-120	Pass	
Copper			%	112		80-120	Pass	
Lead			%	119		80-120	Pass	
Mercury			%	104		75-125	Pass	
Nickel			%	113		80-120	Pass	
Zinc			%	110		80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1				
Acenaphthene	M19-Au30534	NCP	%	113		70-130	Pass	
Acenaphthylene	M19-Au30534	NCP	%	116		70-130	Pass	
Anthracene	M19-Au30534	NCP	%	101		70-130	Pass	
Benz(a)anthracene	M19-Au30534	NCP	%	107		70-130	Pass	
Benzo(a)pyrene	M19-Au30534	NCP	%	108		70-130	Pass	
Benzo(b&i)fluoranthene	M19-Au30534	NCP	%	102		70-130	Pass	
Benzo(g,h,i)perylene	M19-Au30534	NCP	%	83		70-130	Pass	
Benzo(k)fluoranthene	M19-Au30534	NCP	%	109		70-130	Pass	
Chrysene	M19-Au30534	NCP	%	118		70-130	Pass	
Dibenz(a,h)anthracene	M19-Au30534	NCP	%	106		70-130	Pass	
Fluoranthene	M19-Au30534	NCP	%	105		70-130	Pass	
Fluorene	M19-Au30534	NCP	%	117		70-130	Pass	
Indeno(1,2,3-cd)pyrene	M19-Au30534	NCP	%	95		70-130	Pass	
Naphthalene	M19-Au30534	NCP	%	119		70-130	Pass	
Phenanthrene	M19-Au30534	NCP	%	105		70-130	Pass	
Pyrene	M19-Au30534	NCP	%	107		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Organochlorine Pesticides</b>				Result 1				
Chlordanes - Total	S19-Au25680	NCP	%	105		70-130	Pass	
4,4'-DDD	S19-Au25680	NCP	%	98		70-130	Pass	
4,4'-DDE	S19-Au25680	NCP	%	97		70-130	Pass	
4,4'-DDT	S19-Au25680	NCP	%	94		70-130	Pass	
a-BHC	S19-Au25680	NCP	%	92		70-130	Pass	
Aldrin	S19-Au25680	NCP	%	99		70-130	Pass	
b-BHC	S19-Au25680	NCP	%	117		70-130	Pass	
d-BHC	S19-Au25680	NCP	%	84		70-130	Pass	
Dieldrin	S19-Au25680	NCP	%	98		70-130	Pass	
Endosulfan I	S19-Au25680	NCP	%	114		70-130	Pass	
Endosulfan II	S19-Au25680	NCP	%	107		70-130	Pass	
Endosulfan sulphate	S19-Au25680	NCP	%	99		70-130	Pass	
Endrin	S19-Au25680	NCP	%	96		70-130	Pass	
Endrin aldehyde	S19-Au25680	NCP	%	119		70-130	Pass	
Endrin ketone	S19-Au25680	NCP	%	101		70-130	Pass	
g-BHC (Lindane)	S19-Au25680	NCP	%	99		70-130	Pass	
Heptachlor	S19-Au25680	NCP	%	122		70-130	Pass	
Heptachlor epoxide	S19-Au25680	NCP	%	108		70-130	Pass	
Hexachlorobenzene	S19-Au25680	NCP	%	99		70-130	Pass	
Methoxychlor	S19-Au25680	NCP	%	100		70-130	Pass	
<b>Spike - % Recovery</b>								

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Organophosphorus Pesticides</b>				Result 1				
Diazinon	N19-Au32308	NCP	%	87		70-130	Pass	
Dimethoate	N19-Au32308	NCP	%	70		70-130	Pass	
Ethion	N19-Au32308	NCP	%	110		70-130	Pass	
Fenitrothion	N19-Au32308	NCP	%	110		70-130	Pass	
Methyl parathion	N19-Au32308	NCP	%	106		70-130	Pass	
Mevinphos	N19-Au32308	NCP	%	82		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Phenols (Halogenated)</b>				Result 1				
2-Chlorophenol	M19-Au30534	NCP	%	105		30-130	Pass	
2,4-Dichlorophenol	M19-Au30534	NCP	%	107		30-130	Pass	
2,4,5-Trichlorophenol	M19-Au30534	NCP	%	113		30-130	Pass	
2,4,6-Trichlorophenol	M19-Au30534	NCP	%	112		30-130	Pass	
2,6-Dichlorophenol	M19-Au30534	NCP	%	103		30-130	Pass	
4-Chloro-3-methylphenol	M19-Au30534	NCP	%	108		30-130	Pass	
Pentachlorophenol	M19-Au30534	NCP	%	85		30-130	Pass	
Tetrachlorophenols - Total	M19-Au30534	NCP	%	110		30-130	Pass	
<b>Spike - % Recovery</b>								
<b>Phenols (non-Halogenated)</b>				Result 1				
2-Cyclohexyl-4,6-dinitrophenol	M19-Au30534	NCP	%	66		30-130	Pass	
2-Methyl-4,6-dinitrophenol	M19-Au30534	NCP	%	87		30-130	Pass	
2-Methylphenol (o-Cresol)	M19-Au30534	NCP	%	106		30-130	Pass	
2-Nitrophenol	M19-Au30534	NCP	%	130		30-130	Pass	
2,4-Dimethylphenol	M19-Au30534	NCP	%	120		30-130	Pass	
2,4-Dinitrophenol	M19-Au30534	NCP	%	53		30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M19-Au30534	NCP	%	108		30-130	Pass	
4-Nitrophenol	M19-Au30534	NCP	%	99		30-130	Pass	
Dinoseb	M19-Au30534	NCP	%	118		30-130	Pass	
Phenol	M19-Au30534	NCP	%	106		30-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1				
TRH C6-C9	S19-Au32788	CP	%	98		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>BTEX</b>				Result 1				
Benzene	S19-Au32788	CP	%	89		70-130	Pass	
Toluene	S19-Au32788	CP	%	96		70-130	Pass	
Ethylbenzene	S19-Au32788	CP	%	96		70-130	Pass	
m&p-Xylenes	S19-Au32788	CP	%	96		70-130	Pass	
o-Xylene	S19-Au32788	CP	%	97		70-130	Pass	
Xylenes - Total	S19-Au32788	CP	%	96		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1				
Naphthalene	S19-Au32788	CP	%	97		70-130	Pass	
TRH C6-C10	S19-Au32788	CP	%	89		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1				
TRH C6-C9	S19-Au32795	CP	%	99		70-130	Pass	
TRH C10-C14	S19-Au32795	CP	%	76		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>BTEX</b>				Result 1				
Benzene	S19-Au32795	CP	%	82		70-130	Pass	
Toluene	S19-Au32795	CP	%	97		70-130	Pass	
Ethylbenzene	S19-Au32795	CP	%	97		70-130	Pass	
m&p-Xylenes	S19-Au32795	CP	%	100		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
o-Xylene	S19-Au32795	CP	%	101			70-130	Pass	
Xylenes - Total	S19-Au32795	CP	%	100			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1					
Naphthalene	S19-Au32795	CP	%	78			70-130	Pass	
TRH C6-C10	S19-Au32795	CP	%	100			70-130	Pass	
TRH >C10-C16	S19-Au32795	CP	%	71			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Heavy Metals</b>				Result 1					
Arsenic	S19-Au32796	CP	%	117			75-125	Pass	
Cadmium	S19-Au32796	CP	%	90			75-125	Pass	
Chromium	S19-Au32796	CP	%	122			75-125	Pass	
Copper	S19-Au32796	CP	%	124			75-125	Pass	
Lead	S19-Au32796	CP	%	109			75-125	Pass	
Mercury	S19-Au32796	CP	%	98			70-130	Pass	
Nickel	S19-Au32796	CP	%	131			75-125	Fail	Q08
Zinc	S19-Au32796	CP	%	117			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH C6-C9	S19-Au32787	CP	mg/kg	< 20	< 20	<1	30%	Pass	
<b>Duplicate</b>									
<b>BTEX</b>				Result 1	Result 2	RPD			
Benzene	S19-Au32787	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S19-Au32787	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S19-Au32787	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S19-Au32787	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S19-Au32787	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD			
Naphthalene	S19-Au32787	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S19-Au32787	CP	mg/kg	< 20	< 20	<1	30%	Pass	
<b>Duplicate</b>									
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD			
Acenaphthene	S19-Au32787	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S19-Au32787	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S19-Au32787	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S19-Au32787	CP	mg/kg	0.7	0.6	6.0	30%	Pass	
Benzo(a)pyrene	S19-Au32787	CP	mg/kg	0.8	0.7	6.0	30%	Pass	
Benzo(b&j)fluoranthene	S19-Au32787	CP	mg/kg	0.6	0.6	<1	30%	Pass	
Benzo(g,h,i)perylene	S19-Au32787	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S19-Au32787	CP	mg/kg	0.6	0.6	1.0	30%	Pass	
Chrysene	S19-Au32787	CP	mg/kg	0.7	0.6	9.0	30%	Pass	
Dibenz(a,h)anthracene	S19-Au32787	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S19-Au32787	CP	mg/kg	1.7	1.6	6.0	30%	Pass	
Fluorene	S19-Au32787	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S19-Au32787	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S19-Au32787	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S19-Au32787	CP	mg/kg	0.9	0.8	9.0	30%	Pass	
Pyrene	S19-Au32787	CP	mg/kg	1.6	1.5	7.0	30%	Pass	

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S19-Au32787	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4.4'-DDD	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4.4'-DDE	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4.4'-DDT	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S19-Au32787	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	M19-Au32725	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S19-Au32787	CP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfthion	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S19-Au32787	CP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S19-Au32787	CP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass

Duplicate								
<b>Organophosphorus Pesticides</b>				Result 1	Result 2	RPD		
Tetrachlorvinphos	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
<b>Phenols (Halogenated)</b>				Result 1	Result 2	RPD		
2-Chlorophenol	S19-Au32787	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	S19-Au32787	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	S19-Au32787	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	S19-Au32787	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	S19-Au32787	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	S19-Au32787	CP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	S19-Au32787	CP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	S19-Au32787	CP	mg/kg	< 10	< 10	<1	30%	Pass
Duplicate								
<b>Phenols (non-Halogenated)</b>				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	S19-Au32787	CP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	S19-Au32787	CP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	S19-Au32787	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	S19-Au32787	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	S19-Au32787	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	S19-Au32787	CP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	S19-Au32787	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	S19-Au32787	CP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	S19-Au32787	CP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	S19-Au32787	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD		
TRH C6-C9	S19-Au32794	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C10-C14	S19-Au32794	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S19-Au32794	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S19-Au32794	CP	mg/kg	< 50	< 50	<1	30%	Pass
Duplicate								
<b>BTEX</b>				Result 1	Result 2	RPD		
Benzene	S19-Au32794	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S19-Au32794	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S19-Au32794	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S19-Au32794	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S19-Au32794	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S19-Au32794	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD		
Naphthalene	S19-Au32794	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S19-Au32794	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	S19-Au32794	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S19-Au32794	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S19-Au32794	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S19-Au32795	CP	%	15	14	9.0	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S19-Au32796	CP	mg/kg	2.8	2.7	3.0	30%	Pass
Cadmium	S19-Au32796	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Au32796	CP	mg/kg	19	19	2.0	30%	Pass
Copper	S19-Au32796	CP	mg/kg	56	55	1.0	30%	Pass
Lead	S19-Au32796	CP	mg/kg	11	11	4.0	30%	Pass
Mercury	S19-Au32796	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S19-Au32796	CP	mg/kg	63	61	3.0	30%	Pass
Zinc	S19-Au32796	CP	mg/kg	70	68	3.0	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
N/A	Not applicable

**Asbestos Counter/Identifier:**

Chamath JHM Annakkage      Senior Analyst-Asbestos (NSW)

**Authorised by:**

Sayeed Abu      Senior Analyst-Asbestos (NSW)



**Glenn Jackson**  
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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GHD Pty Ltd NSW  
 Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000



NATA Accredited  
 Accreditation Number 1261  
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

Attention: **Henry Luo**

Report **672730-W**  
 Project name **TOWNSON AND BURDEKIN RD**  
 Project ID **12511195**  
 Received Date **Aug 22, 2019**

Client Sample ID			RB05	TRIP BLANK	R20
Sample Matrix			Water	Water	TRIP SPIKE
Eurofins Sample No.			S19-Au32799	S19-Au32800	S19-Au32801
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 06, 2019
Test/Reference	LOR	Unit			
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>					
Naphthalene <sup>N02</sup>	0.01	mg/L	-	< 0.01	120
TRH C6-C10	0.02	mg/L	-	< 0.02	92
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	0.02	mg/L	-	< 0.02	-
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>					
TRH C6-C9	0.02	mg/L	-	< 0.02	89
<b>BTEX</b>					
Benzene	0.001	mg/L	-	< 0.001	120
Toluene	0.001	mg/L	-	< 0.001	100
Ethylbenzene	0.001	mg/L	-	< 0.001	100
m&p-Xylenes	0.002	mg/L	-	< 0.002	100
o-Xylene	0.001	mg/L	-	< 0.001	110
Xylenes - Total	0.003	mg/L	-	< 0.003	100
4-Bromofluorobenzene (surr.)	1	%	-	71	92
<b>Heavy Metals</b>					
Arsenic	0.001	mg/L	< 0.001	-	-
Cadmium	0.0002	mg/L	< 0.0002	-	-
Chromium	0.001	mg/L	< 0.001	-	-
Copper	0.001	mg/L	< 0.001	-	-
Lead	0.001	mg/L	< 0.001	-	-
Mercury	0.0001	mg/L	< 0.0001	-	-
Nickel	0.001	mg/L	< 0.001	-	-
Zinc	0.005	mg/L	< 0.005	-	-

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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>
Total Recoverable Hydrocarbons - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Aug 23, 2019	7 Days
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Aug 23, 2019	7 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Aug 23, 2019	14 Days
Eurofins   mgt Suite B7A Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Aug 23, 2019	180 Days

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b>	<b>Received:</b> Aug 22, 2019 11:29 AM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 672730	<b>Due:</b> Aug 29, 2019
<b>Project Name:</b> TOWNSON AND BURDEKIN RD	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
<b>Project ID:</b> 12511195	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X							
<b>Brisbane Laboratory - NATA Site # 20794</b>													
<b>Perth Laboratory - NATA Site # 23736</b>													
<b>External Laboratory</b>													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	PC09_0.3-0.41	Aug 15, 2019		Soil	S19-Au32787	X			X	X		X	
2	PC09_0.5-0.6	Aug 15, 2019		Soil	S19-Au32788					X	X		
3	PC09_0.8-0.9	Aug 15, 2019		Soil	S19-Au32789					X	X		
4	PC08_0.34-0.44	Aug 15, 2019		Soil	S19-Au32790	X			X	X		X	
5	PC08_0.45-0.55	Aug 15, 2019		Soil	S19-Au32791					X	X		
6	PC08_0.7-0.8	Aug 15, 2019		Soil	S19-Au32792					X	X		
7	PC07_0.4-0.5	Aug 15, 2019		Soil	S19-Au32793	X				X		X	
8	PC07_0.6-0.7	Aug 15, 2019		Soil	S19-Au32794				X	X	X		

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b>	<b>Received:</b> Aug 22, 2019 11:29 AM
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<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X							
<b>Brisbane Laboratory - NATA Site # 20794</b>													
<b>Perth Laboratory - NATA Site # 23736</b>													
9	PC10_0.15-0.2	Aug 15, 2019		Soil	S19-Au32795				X		X		
10	PC10_0.5-0.6	Aug 15, 2019		Soil	S19-Au32796	X			X	X			
11	PC10_0.9-1.0	Aug 15, 2019		Soil	S19-Au32797				X	X			
12	QC07	Aug 15, 2019		Soil	S19-Au32798				X	X			
13	RB05	Aug 15, 2019		Water	S19-Au32799			X					
14	TRIP BLANK	Aug 15, 2019		Water	S19-Au32800							X	
15	TRIP SPIKE	Aug 06, 2019		Water	S19-Au32801							X	
16	PC09_1.4-1.5	Aug 15, 2019		Soil	S19-Au32802		X						
17	PC08_1.0-1.1	Aug 15, 2019		Soil	S19-Au32803		X						
18	PC08_1.4-1.5	Aug 15, 2019		Soil	S19-Au32804		X						
19	PC07_1.0-1.1	Aug 15, 2019		Soil	S19-Au32805		X						
20	PC07_1.4-1.5	Aug 15, 2019		Soil	S19-Au32806		X						

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b>	<b>Received:</b> Aug 22, 2019 11:29 AM
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<b>Project ID:</b> 12511195		

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X	X	X	X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>						X							
<b>Brisbane Laboratory - NATA Site # 20794</b>													
<b>Perth Laboratory - NATA Site # 23736</b>													
21	PC10_1.4-1.5	Aug 15, 2019		Soil	S19-Au32807		X						
22	QC08	Aug 15, 2019		Soil	S19-Au32808		X						
<b>Test Counts</b>						4	7	1	3	12	8	4	2

**Internal Quality Control Review and Glossary**
**General**

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene	mg/L	< 0.01		0.01	Pass	
TRH C6-C10	mg/L	< 0.02		0.02	Pass	
<b>Method Blank</b>						
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	mg/L	< 0.02		0.02	Pass	
<b>Method Blank</b>						
<b>BTEX</b>						
Benzene	mg/L	< 0.001		0.001	Pass	
Toluene	mg/L	< 0.001		0.001	Pass	
Ethylbenzene	mg/L	< 0.001		0.001	Pass	
m&p-Xylenes	mg/L	< 0.002		0.002	Pass	
o-Xylene	mg/L	< 0.001		0.001	Pass	
Xylenes - Total	mg/L	< 0.003		0.003	Pass	
<b>Method Blank</b>						
<b>Heavy Metals</b>						
Arsenic	mg/L	< 0.001		0.001	Pass	
Cadmium	mg/L	< 0.0002		0.0002	Pass	
Chromium	mg/L	< 0.001		0.001	Pass	
Copper	mg/L	< 0.001		0.001	Pass	
Lead	mg/L	< 0.001		0.001	Pass	
Mercury	mg/L	< 0.0001		0.0001	Pass	
Nickel	mg/L	< 0.001		0.001	Pass	
Zinc	mg/L	< 0.005		0.005	Pass	
<b>LCS - % Recovery</b>						
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene	%	117		70-130	Pass	
TRH C6-C10	%	121		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	%	118		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>BTEX</b>						
Benzene	%	106		70-130	Pass	
Toluene	%	112		70-130	Pass	
Ethylbenzene	%	114		70-130	Pass	
m&p-Xylenes	%	118		70-130	Pass	
Xylenes - Total	%	118		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Heavy Metals</b>						
Arsenic	%	104		80-120	Pass	
Cadmium	%	106		80-120	Pass	
Chromium	%	107		80-120	Pass	
Copper	%	105		80-120	Pass	
Lead	%	106		80-120	Pass	
Mercury	%	106		75-125	Pass	
Nickel	%	106		80-120	Pass	
Zinc	%	107		80-120	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>									
<b>Heavy Metals</b>				Result 1					
Arsenic	M19-Au30619	NCP	%	91			75-125	Pass	
Cadmium	M19-Au30619	NCP	%	92			75-125	Pass	
Chromium	M19-Au30619	NCP	%	90			75-125	Pass	
Copper	M19-Au30619	NCP	%	92			75-125	Pass	
Lead	M19-Au30619	NCP	%	91			75-125	Pass	
Mercury	M19-Au30619	NCP	%	94			70-130	Pass	
Nickel	M19-Au30619	NCP	%	91			75-125	Pass	
Zinc	M19-Au30619	NCP	%	91			75-125	Pass	
<b>Spike - % Recovery</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1					
Naphthalene	S19-Au32506	NCP	%	106			70-130	Pass	
TRH C6-C10	S19-Au32506	NCP	%	114			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1					
TRH C6-C9	S19-Au32506	NCP	%	112			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>BTEX</b>				Result 1					
Benzene	S19-Au32506	NCP	%	110			70-130	Pass	
Toluene	S19-Au32506	NCP	%	119			70-130	Pass	
Ethylbenzene	S19-Au32506	NCP	%	110			70-130	Pass	
m&p-Xylenes	S19-Au32506	NCP	%	113			70-130	Pass	
o-Xylene	S19-Au32506	NCP	%	113			70-130	Pass	
Xylenes - Total	S19-Au32506	NCP	%	113			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Heavy Metals</b>				Result 1	Result 2	RPD			
Arsenic	M19-Au30619	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	M19-Au30619	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M19-Au30619	NCP	mg/L	< 0.001	0.001	5.0	30%	Pass	
Copper	M19-Au30619	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	M19-Au30619	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	M19-Au30619	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M19-Au30619	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	M19-Au30619	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD			
Naphthalene	S19-Au32800	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S19-Au32800	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH C6-C9	S19-Au32800	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
<b>Duplicate</b>									
<b>BTEX</b>				Result 1	Result 2	RPD			
Benzene	S19-Au32800	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S19-Au32800	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S19-Au32800	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S19-Au32800	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S19-Au32800	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S19-Au32800	CP	mg/L	< 0.003	< 0.003	<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
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.
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

**Authorised By**

Alena Bounkeua	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)


**Glenn Jackson  
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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# CHAIN OF CUSTODY RECORD

ABN 59 005 085 521

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Melbourne Laboratory  
2 Kingston Town Close, Oakleigh, VIC 3166  
03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Tom Frederick, Jake Vickers	
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQulS, Custom)		Esdat		Handed over by		Tom Frederick, Jake Vickers	
Contact Name		Henry Luo		Email for Invoice		Henry.Luo@ghd.com		Email for Results		Henry.Luo@ghd.com		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)			
Phone No		0414090002		Containers		1L Plastic		250mL Plastic		125mL Plastic		200mL Amber Glass		40mL VOA vial	
Special Directions		Place all samples on Hold		Other (Asbestos AS4894, WA Guidelines)		Jar (Glass or HDPE)		500mL PFAS Bottle		3 Day*		5 Day		* Surcharges apply	
Purchase Order		12511195		Other ( Hold )											
Quote ID No		-		Sample Comments / Dangerous Goods Hazard Warning											
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	asbestos (presence / absence)	suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)	suite B14 (OCP, OPP)	suite B7 (TRH, BTEXN, PAH, 8 metals)	8 metals	BTEX / TRH C6-C10	PFAS (standard LOR, 28 compounds)	TCLP PFAS				
1	TP17_0.0-0.1	19/8/19	S	x	x	x									
2	QC09	15/8/19	S				x								
3	TP17_0.5-0.6	15/8/19	S				x								
4	TP17_1.0-1.1	15/8/19	S												
5	TP17_1.4-1.5	15/8/19	S												
6	BH07_0.0-0.1	15/8/19	S	x		x				X	X				
7	BH07_0.5-0.6	15/8/19	S	x		x									
8	BH07_1.0-1.1	15/8/19	S							X	X				
9	BH07_1.9-2.0	15/8/19	S												
10	BH07_2.9-3.0	15/8/19	S				X			X	X				
Total Counts															
Method of Shipment		<input checked="" type="checkbox"/> Courier (# )		<input type="checkbox"/> Hand Delivered		<input type="checkbox"/> Postal		Name		Signature		Date		Time	
Eurofins   mgt Laboratory Use Only		Received By <i>Luo D</i>		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature <i>[Signature]</i>		Date		13 / 08 / 2019		Time		0.65625	
		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		23 08 19		Time		6.07 am	
														Report No 673140	

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03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Tom Frederick, Jake Vickers											
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQUIS, Custom)		Esdat		Handed over by		Tom Frederick, Jake Vickers											
Contact Name		Henry Luo		Analyses (Note: Where multiple analyses are requested, codes such as "Total or Filtered" SUITE code must be used to identify SUITE priority)		asbestos (presence / absence)		suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)		suite B14 (OCP, OPP)		suite B7 (TRH, BTEXN, PAH, 8 metals)		8 metals		BTEX / TRH C6-C10		PFAS (standard LOR, 28 compounds)		TCLP PFAS		Email for Invoice		Henry.Luo@ghd.com	
Phone No		0414090002																				Email for Results		Henry.Luo@ghd.com	
Special Directions		Place all samples on Hold		Containers		Turnaround Time (TAT) Requirements (Default will be 5 days if not holding)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 6 Day <input checked="" type="checkbox"/> Other ( Hold )    * Surcharges apply		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS bottle Jar (Glass or HDPE) Other (Asbestos AS4894, WA Guidelines)		Sample Comments / Dangerous Goods Hazard Warning													
Purchase Order		12511195																							
Quote ID No		-																							
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																						
1	BH07_2.9-3.0	19/8/9	S																						
2	RB06	19/8/9	S																						
3	BH10_0.07-0.2	20/8/9	S	x	x	x																			
4	BH10_0.2-0.45	20/8/9	S	X					X	X															
5	BH10_0.5-0.7	20/8/9	S																						
6	BH10_0.9-1.0	20/8/9	S				X		X	X															
7	TP25_0-0.2	20/8/9	S	x		x																			
8	TP25_0.3-0.4	20/8/9	S		X				X	X															
9	TP25_0.9-1.0	20/8/9	S																						
10	TP25_1.5-1.6	20/8/9	S				X		X	X			1	1	2										
Total Counts													1	1	1										
Method of Shipment		<input checked="" type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time											
Eurofins   mgt Laboratory Use Only		Received By <i>Luo D</i>		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature <i>[Signature]</i>		Date <i>23/08/19</i>		Time <i>6:07 PM</i>		Temperature <i>41.3 °C</i>		Report No <i>673140</i>											
		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time															

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**Melbourne Laboratory**  
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03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Jake Vickers									
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQuls, Custom)		Esdat		Handed over by		Jake Vickers									
Contact Name		Henry Luo		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filterable") SUITE code must be used to attach SUITE pricing.</small>		asbestos (presence / absence)		suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)		suite B7b (TRH, BTEXN, PAH, 8 metals)		8 metals		BTEX / TRH C6-C10		PFAS (standard LOR, 28 compounds)		TCLP PFAS		Email for Invoice		Henry.Luo@ghd.com	
Phone No		0414090002																		Email for Results		Henry.Luo@ghd.com	
Special Directions		Place all samples on Hold		Containers		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input checked="" type="checkbox"/> Other ( Hold ) * Surcharges apply															
Purchase Order		12511195		Other (Asbestos AS4564, WA Guidelines)		Sample Comments / Dangerous Goods Hazard Warning																	
Quote ID No		-		1L Plastic																			
No		Client Sample ID		Sampled Date/Time (dd/mm/yy hh:mm)		Matrix (Solid (S) Water (W))																	
1		TP24-0-0.1		20/8/19		s		x		x		x											
2		TP24_0.4-0.5		20/8/19		s																	
3		TP24_0.6-0.7		20/8/19		s																	
4		TP24_1.5-1.6		20/8/19		s				x		x											
5		TP24_1.7-1.8		20/8/19		s																	
6		TP23_0-0.8		20/8/19		s		x		x		x											
7		TP23_0.8-0.9		20/8/19		s																	
8		FD01_200819		20/8/19		s																	
9		TP23_1.45-1.5		20/8/19		s		x		x		x											
10		FD02_200819		20/8/19		s				x		x											
Total Counts																							
Method of Shipment		<input checked="" type="checkbox"/> Courier (# )		<input type="checkbox"/> Hand Delivered		<input type="checkbox"/> Postal		Name		Signature		Date		Time									
Eurofins   mgt		Received By		Luo D		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		23/08/19		Time									
Laboratory Use Only		Received By				SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Temperature									
														4.3°C									
														Report No									
														673140									

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# CHAIN OF CUSTODY RECORD

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Company		GHD		Project №		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Jake Vickers			
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQulS, Custom)		Esdat		Handed over by		Jake Vickers			
Contact Name		Henry Luo		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing</small>	asbestos (presence / asbestose)		suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)		suite B14 (OCP, OPP)		suite B7 (TRH, BTEXN, PAH, 8 metals)		8 metals		BTEX / TRH C6-C10		
Phone №		0414090002			PFAS (standard LOR, 28 compounds)		TCLP PFAS		Email for Invoice		Henry.Luo@ghd.com		Email for Results		Henry.Luo@ghd.com		
Special Directions		Place all samples on Hold			Containers		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input checked="" type="checkbox"/> Other ( Hold )     * Surcharges apply								
Purchase Order		12511195			1L Plastic		250mL Plastic		125mL Plastic		200mL Amber Glass		40mL VOA vial		500mL PFAS Bottle		Jar (Glass or HDPE)
Quote ID №		-		Other (Asbestos AS1864, WA Guidelines)		Sample Comments / Dangerous Goods Hazard Warning											
№	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	RB_200819	20/8/19	W					x									
2	TP21_0-0.1	20/8/19	s	x	x	x				x	x						
3	FD03_200819	20/8/19	s							x							
4	TP21_0.4-0.5	20/8/19	s	x													
5	TP21_0.9-1.0	20/8/19	s							x	x						
6	FD04_200819	20/8/19	s														
7	TP21_1.4-1.5	20/8/19	s	x													
8	TP20_0-0.1	20/8/19	s	x	x	x				x	x						
9	TP20_0.4-0.5	20/8/19	s														
10	TP20_1.2-1.3	20/8/19	s														
Total Counts																	
Method of Shipment		<input checked="" type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time			
Eurofins   mgt Laboratory Use Only		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date 23/08/19		Time 6:07 PM		Date		Temperature 4.3°C			
		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Date		Report № 673140			

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# CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

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Melbourne Laboratory  
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03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Jake Vickers	
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQuIS, Custom)		Esdat		Handed over by		Jake Vickers	
Contact Name		Henry Luo		Analyses (Note: Where multiple are requested, please specify "Total" or "Filtered" / SUITE code must be used to attach SUITE prefix.)		asbestos (presence / absence)  suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)  suite B14 (OCP, OPP)  suite B7 (TRH, BTEXN, PAH, 8 metals)  8 metals  BTEX / TRH C6-C10		PFAS (standard LOR, 28 compounds)  TCLP PFAS		Email for Invoice		Henry.Luo@ghd.com			
Phone No		0414090002								Email for Results		Henry.Luo@ghd.com			
Special Directions		Place all samples on Hold								Containers		Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)			
Purchase Order		12511195								1L Plastic		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day <input checked="" type="checkbox"/> Other ( Hold )     * Surcharges apply			
Quote ID No		-		250mL Plastic		200mL Amber Glass		40mL VOA vial		500mL PFAS Bottle		Jar (Glass or HDPE)		Other (Asbestos AS4894, WA Guidelines)	
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))											Sample Comments / Dangerous Goods Hazard Warning	
1	TP19_0-0.2	15/8/19	S	X	X	X									
2	TP19_0.5-0.6	6/8/19	S				X								
3	RB_210819		W					X							
4	TP18_0-0.1		S	X	X	X									
5	TP18_0.4-0.5		S				X								
6	TP18_0.9-1.0		S												
7	BH09_0-0.2		S	X	X	X			X	X					
8	BH09_0.3-0.5		S												
9	BH09_0.8-1.0		S												
10	BH09_1.5-1.7		S				X		X	X					
Total Counts															
Method of Shipment		<input checked="" type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time	
Eurofins   mgt		Received By <i>Cuo</i>		SYD   BNE   MEL   PER   ADL   NTL   DRW		<i>[Signature]</i>		Date <i>23/08/19</i>		Time <i>6:57pm</i>		Temperature <i>4.3°C</i>		Report No <i>673140</i>	
Laboratory Use Only		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Report No			

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# CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

**Sydney Laboratory**  
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066  
02 9900 8400 EnviroSampleNSW@eurofins.com

**Brisbane Laboratory**  
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**Perth Laboratory**  
Unit 2, 91 Leach Highway, Kewdale WA 6105  
08 9251 9800 EnviroSampleWA@eurofins.com

**Melbourne Laboratory**  
2 Kingston Town Close, Oakleigh, VIC 3166  
03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Jake Vickers			
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQulS, Custom)		Esdat		Handed over by		Jake Vickers			
Contact Name		Henry Luo		<small>Analyses (Note: Where matrix are requested, please specify "Total" or "Element") SUITE code must be used to attach SUITE pricing</small> asbestos (presence / absence) suite B7a (TRH, BTEXN, PAH, phenols, 8 metals) suite B14 (OCP, OPP) suite B7 (TRH, BTEXN, PAH, 8 metals) 8 metals BTEX / TRH C6-C10 PFAS (standard LOR, 28 compounds) TCLP PFAS		Email for Invoice		Henry.Luo@ghd.com		Email for Results		Henry.Luo@ghd.com		Turnaround Time (TAT) Requirements (Default will be 5 days if not tickled)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input checked="" type="checkbox"/> Other ( Hold ) * Surcharges apply	
Phone No		0414090002				Containers		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS4694, WA Guidelines)		Sample Comments / Dangerous Goods Hazard Warning							
Special Directions		Place all samples on Hold															
Purchase Order		12511195															
Quote ID No		-															
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	BH09_2.1-2.3	21/8/19	S														
2	TP22_0-0.1	21/8/19	s	x	x	x				X	X						
3	TP22_0.4-0.5	21/8/19	s							X	X						
4	TP22_0.9-1.0	21/8/19	s														
5	TP22_1.5-1.6	21/8/19	s														
6	TP12_0-0.2	22/8/19	s	x	x	x											
7	TP12_0.4-0.5	22/8/19	s														
8	TP12_0.9-1.0	22/8/19	s														
9	TP12_1.2-1.3	22/8/19	s														
10	TP12_1.5-1.6	22/8/19	s														
Total Counts								# #									
Method of Shipment		<input checked="" type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time			
Eurofins   mgt Laboratory Use Only		Received By <i>[Signature]</i>		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature <i>[Signature]</i>		Date 23/08/19		Time 6:02 am		Temperature 4.3 °C		Report No 673140			
		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time							

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**Perth Laboratory**  
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 08 9251 9600 EnviroSampleWA@eurofins.com

**Melbourne Laboratory**  
 2 Kingston Town Close, Oakleigh, VIC 3186  
 03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Jake Vickers			
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQUIS, Custom)		Esdat		Handed over by		Jake Vickers			
Contact Name		Henry Luo		<small>Analyses (Note: Where multiple analyses are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing</small>		asbestos (presence / asbestose)  suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)  suite B14 (OCP, OPP)  suite B7 (TRH, BTEXN, PAH, 8 metals)  8 metals  BTEX / TRH C6-C10  PFAS (standard LOR, 28 compounds)  TCLP PFAS								Email for Invoice		Henry.Luo@ghd.com	
Phone No		0414090002												Email for Results		Henry.Luo@ghd.com	
Special Directions		Place all samples on Hold												Containers		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)	
Purchase Order		12511195												<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input checked="" type="checkbox"/> Other ( Hold )    * Surcharges apply			
Quote ID No		-		Matrix (Solid (S) Water (W))										Sample Comments / Dangerous Goods Hazard Warning			
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)															
1	TP13_0-0.2	21/8/19	S	x	x	x											
2	TP13_0.8-0.9	21/8/19	s				x										
3	TP13_1.4-1.6	21/8/19	s														
4	TP14_0-0.2	21/8/19	s	X	X	X											
5	TP14_0.4-0.5	21/8/19	s														
6	TP14_1.4-1.5	22/8/19	s				X										
7	TP16_0-0.2	22/8/19	s	x	x	x											
8	TP16_0.4-0.5	22/8/19	s														
9	TP16_0.9-1.0	22/8/19	s				X										
10	TP16_1.4-1.5	22/8/19	s														
Total Counts																	
Method of Shipment		<input checked="" type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time			
Eurofins   mgt Laboratory Use Only		Received By		BYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date 23/08/19		Time 6:02 AM		Temperature 4.3 C		Report No 673140			
		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Report No					

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**Melbourne Laboratory**  
 2 Kingston Town Close, Oakleigh, VIC 3166  
 03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Jake Vickers			
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQULS, Custom)		Esdat		Handed over by		Jake Vickers			
Contact Name		Henry Luo		<small>Analyses (Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to filter and SUITE pricing</small> asbestos (presence / absence) suite B7a (TRH, BTEXN, PAH, phenols, 8 metals) suite B14 (OCP, OPP) suite B7 (TRH, BTEXN, PAH, 8 metals) 8 metals BTEX / TRH C6-C10 PFAS (standard LOR, 28 compounds) TCLP PFAS		Email for Invoice		Henry.Luo@ghd.com		Email for Results		Henry.Luo@ghd.com		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input checked="" type="checkbox"/> Other ( Hold ) * Surcharges apply	
Phone No		0414090002				Special Directions		Place all samples on Hold		Purchase Order		12511195		Quote ID No		-	
Special Directions		Place all samples on Hold				Containers		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) <small>Other (Asbestos AS4684, WA Guidelines)</small>		Sample Comments / Dangerous Goods Hazard Warning							
Purchase Order		12511195				Method of Shipment		<input checked="" type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time	
Quote ID No		-		Received By		Cao D		Signature		Date		23/08/19		Time		6:07 PM	
Method of Shipment		<input checked="" type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Temperature		43.6	
Name				Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Report No		673140	

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Melbourne Laboratory  
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03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Jake Vickers											
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQulS, Custom)		Esdat		Handed over by		Jake Vickers											
Contact Name		Henry Luo		Analyses (Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing		asbestos (presence / absence)		suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)		suite B14 (OCP, OPP)		suite B7 (TRH, BTEXN, PAH, 8 metals)		8 metals		BTEX / TRH C6-C10		PFAS (standard LOR, 28 compounds)		TCLP PFAS		Email for Invoice		Henry.Luo@ghd.com	
Phone No		0414090002																				Email for Results		Henry.Luo@ghd.com	
Special Directions		Place all samples on Hold																				Containers		Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)	
Purchase Order		12511195																				1L Plastic		<input type="checkbox"/> Overnight (9am)*	
Quote ID No		-		250mL Plastic		<input type="checkbox"/> 1 Day*		<input type="checkbox"/> 2 Day*																	
				125mL Plastic		<input type="checkbox"/> 3 Day*		<input type="checkbox"/> 6 Day																	
				200mL Amber Glass		<input checked="" type="checkbox"/> Other ( Hold )		* Surcharges apply																	
				40mL VOA vial		Sample Comments / Dangerous Goods Hazard Warning																			
				500mL PFAS Bottle																					
				Jar (Glass or HDPE)																					
				Other (Asbestos AS4864, WA Guidelines)																					
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																						
1	BH06_0.0-0.2	23/8/19	S	x	x	x																			
2	QC11	23/8/19	s																						
3	BH06_0.3-0.5	23/8/19	s																						
4	BH06_0.8-1.0	23/8/19	s																						
5	BH06_1.8-2.0	23/8/19	s																						
6	BH06_2.8-3.0	23/8/19	s																						
7	BH06_3.8-4.0	23/8/19	s																						
8	BH06_4.8-5.0	23/8/19	s																						
9	RB0/ 230819	23/8/19																							
10	TB	23/8/19	s																						
Total Counts																									
Method of Shipment		<input checked="" type="checkbox"/> Courier (# )		<input type="checkbox"/> Hand Delivered		<input type="checkbox"/> Postal		Name		Signature		Date		Time											
Eurofins   mgt		Received By <i>Luca S.</i>		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature <i>[Signature]</i>		Date <i>23/08/19</i>		Time <i>6:07 AM</i>		Temperature <i>43.6</i>		Report No <i>673140</i>											
Laboratory Use Only		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Report No													

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Melbourne Laboratory  
2 Kingston Town Close, Oakleigh, VIC 3186  
03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Jake Vickers	
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQulS, Custom)		Esdat		Handed over by		Jake Vickers	
Contact Name		Henry Luo		Analyses (Note: Where metals are requested, please specify "Total" or "Filtered" SUITE code must be used to attach SUITE prefix)		asbestos (presence / absence)		suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)		suite B14 (OCP, OPP)		suite B7 (TRH, BTEXN, PAH, 8 metals)		8 metals	
Phone No		0414090002		Matrix (Solid (S) Water (W))				BTEX / TRH C6-C10		PFAS (standard LOR, 28 compounds)		TCLP PFAS			
Special Directions		Place all samples on Hold		Containers		1L Plastic		250mL Plastic		125mL Plastic		200mL Amber Glass		40mL VOA vial	
Purchase Order		12511195		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)*		<input type="checkbox"/> 1 Day*		<input type="checkbox"/> 2 Day*		<input type="checkbox"/> 3 Day*		<input type="checkbox"/> 5 Day	
Quote ID No		-		Other (Asbestos AS4694, WA Guidelines)		<input checked="" type="checkbox"/> Other ( Hold )		Sample Comments / Dangerous Goods Hazard Warning							
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))												
1	TP14_0.9-1.2	22/8/19	S	x		x									
2															
3															
4															
5															
6															
7															
8															
9															
10															
Method of Shipment		<input checked="" type="checkbox"/> Courier (# )		<input type="checkbox"/> Hand Delivered		<input type="checkbox"/> Postal		Name		Signature		Date		Time	
Eurofins   mgt Laboratory Use Only		Received By <i>[Signature]</i>		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature <i>[Signature]</i>		Date <i>03/08/19</i>		Time <i>6:02pm</i>		Temperature <i>43.6</i>		Report No <i>673140</i>	

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## #AU04\_Enviro\_Sample\_NSW

---

**To:** Alena Bounkeua  
**Subject:** RE: 12511195 - third COC for samples collected this week (19 to 23 August 2019)

**From:** Henry Luo [mailto:Henry.Luo@ghd.com]  
**Sent:** Friday, 23 August 2019 6:01 PM  
**To:** Alena Bounkeua  
**Cc:** James Tomlinson; Hannah Dawson; Felix Salmon  
**Subject:** RE: 12511195 - third COC for samples collected this week (19 to 23 August 2019)

EXTERNAL EMAIL \*

Hi Alena

Please find the attached file, which contains 10 tabs, as the COC.

Standard laboratory turnaround.

Please be aware that these samples were collected by different people, and jar / bag details were not provided to me, so that I removed the containers number and let your sample receipt check.

I am pretty I missed something, but please let your sample receipt log in the samples based on:

- 1) Only samples in PFAS containers are for PFAS analysis. If samples not in proper containers, please do NOT go ahead for the analysis.
- 2) Some samples are only in PFAS jars but need to be analysed for conventional contaminants.
- 3) Give us time to check the SRA etc prior to analysis.

Please let us know if you have any questions.

Kind regards

Henry

**Henry Luo**  
**Senior Environmental Engineer - Contamination Assessment & Remediation**

**GHD**

*Proudly employee owned*

T: + 61 2 9239 7044 | F: + 61 2 9239 7199 | V: 217044 | M: 0414 090 002 | E: [henry.luo@ghd.com](mailto:henry.luo@ghd.com)  
Level 15 133 Castlereagh St Sydney NSW 2000 Australia | <http://www.ghd.com/>

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Please consider the environment before printing this email

## #AU04\_Enviro\_Sample\_NSW

---

**From:** #AU04\_Enviro\_Sample\_NSW  
**Sent:** Monday, 26 August 2019 5:23 PM  
**To:** 'Henry Luo'; Alena Bounkeua  
**Cc:** James Tomlinson; Hannah Dawson; Felix Salmon; Terry Nham  
**Subject:** RE: 12511195 - third COC for samples collected this week (19 to 23 August 2019)

Hi Henry,

Please find my comment in red below:

- 1) Sample TP23\_0-0.8 was not received, analysis cancelled. Henry response: is **TP23\_0.8-0.9** sample available? If it is, please test for asbestos identification, suite B7, B14 and PFAS **ANALYSIS ADDED**
- 2) Sample TP16\_0-0.2, only one Asbestos bag received, chemical analysis cancelled. Please advise Henry response: is **TP16\_0.4-0.5** sample available? If I is, please test for suite B7b, B14. **ONLY ASB BAG RECEIVED, PLEASE ADVISE**
- 3) Sample TP16\_0.9-1.0, only one Asbestos bag received, chemical analysis cancelled. Please advise Henry response: is **TP16\_1.4-1.5** available? If it is, please test for suite B7. **ONLY ASB BAG RECEIVED, PLEASE ADVISE**
- 4) Sample BH08\_0-0.2, Glass Jar not received, (only PFAS tub and ASB bag) chemical analysis cancelled. Please advise Henry response: please still test **BH08\_0-0.2** for asbestos identification and PFAS. **ANALYSIS ADDED** . If **BH08\_0.3-0.5** sample is available, please test it for B7a and B14. **NO JAR RECEIVED, PLEASE ADVISE**
- 5) Sample TB received as water in a PFAS 500ml bottle, TRH/BTEX cancelled. Please advise Henry response: please test the TB for PFAS only. **ANALYSIS UPDATED**

**Extra samples received (BH07\_3.9-4.0, FD03\_210819, FD01\_210819, FD02\_210819, TRIP SPIKE, TRIP BLANK, SPIKE LAB) placed on hold.**

Kind Regards,

Luca Dominici  
Enviro Sample NSW  
**Sample Receipt NSW**

### **Eurofins | Environment Testing**

Unit F3, Parkview Building  
16 Mars Road  
LANE COVE WEST NSW 2066  
AUSTRALIA  
Phone : +61 2 9900 8421

Email : [EnviroSampleNSW@Eurofins.com](mailto:EnviroSampleNSW@Eurofins.com)  
Website: [www.eurofins.com.au/environmental-testing](http://www.eurofins.com.au/environmental-testing)

---

**From:** Henry Luo [mailto:Henry.Luo@ghd.com]  
**Sent:** Monday, 26 August 2019 5:02 PM  
**To:** Alena Bounkeua  
**Cc:** James Tomlinson; Hannah Dawson; Felix Salmon; #AU04\_Enviro\_Sample\_NSW; Terry Nham  
**Subject:** RE: 12511195 - third COC for samples collected this week (19 to 23 August 2019)

Hi Alena

Thank you very much for your email. Please see my response below in green colour font for the inquiries.

- 1) Sample TP23\_0-0.8 was not received, analysis cancelled. Henry response: is TP23\_0.8-0.9 sample available? If it is, please test for asbestos identification, suite B7, B14 and PFAS

- 2) Sample TP16\_0-0.2, only one Asbestos bag received, chemical analysis cancelled. Please advise Henry response: is TP16\_0.4-0.5 sample available? If I is, please test for suite B7b, B14.
- 3) Sample TP16\_0.9-1.0, only one Asbestos bag received, chemical analysis cancelled. Please advise Henry response: is TP16\_1.4-1.5 available? If it is, please test for suite B7.
- 4) Sample BH08\_0-0.2, Glass Jar not received, (only PFAS tub and ASB bag) chemical analysis cancelled. Please advise Henry response: please still test BH08\_0-0.2 for asbestos identification and PFAS. If BH08\_0.3-0.5 sample is available, please test it for B7a and B14.
- 5) Sample TB received as water in a PFAS 500ml bottle, TRH/BTEX cancelled. Please advise Henry response: please test the TB for PFAS only.

Kind regards

Henry

**Henry Luo**  
**Senior Environmental Engineer - Contamination Assessment & Remediation**

**GHD**

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Level 15 133 Castlereagh St Sydney NSW 2000 Australia | <http://www.ghd.com/>

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**From:** AlenaBounkeua@eurofins.com <AlenaBounkeua@eurofins.com>  
**Sent:** Monday, 26 August 2019 4:25 PM  
**To:** Henry Luo <Henry.Luo@ghd.com>  
**Cc:** James Tomlinson <James.Tomlinson@ghd.com>; Hannah Dawson <Hannah.Dawson@ghd.com>; Felix Salmon <Felix.Salmon@ghd.com>; EnviroSampleNSW@eurofins.com  
**Subject:** RE: 12511195 - third COC for samples collected this week (19 to 23 August 2019)

Hi Henry,

Please see the notes below in regards to the samples for this COC.

If you could please advise on how you would like us to proceed that would be great.

- Sample TP23\_0-0.8 was not received, analysis cancelled.
- Sample TP16\_0-0.2, only one Asbestos bag received, chemical analysis cancelled. Please advise
- Sample TP16\_0.9-1.0, only one Asbestos bag received, chemical analysis cancelled. Please advise
- Sample BH08\_0-0.2, Glass Jar not received, (only PFAS tub and ASB bag) chemical analysis cancelled. Please advise
- Sample TB received as water in a PFAS 500ml bottle, TRH/BTEX cancelled. Please advise

Thanks,

Kind Regards,

Alena Bounkeua  
**Eurofins | Environment Testing**  
Phone: +61 2 9900 8414  
Mobile: +61 429 365 410  
Email: [AlenaBounkeua@eurofins.com](mailto:AlenaBounkeua@eurofins.com)

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**From:** Henry Luo [<mailto:Henry.Luo@ghd.com>]  
**Sent:** Friday, 23 August 2019 6:01 PM  
**To:** Alena Bounkeua  
**Cc:** James Tomlinson; Hannah Dawson; Felix Salmon  
**Subject:** RE: 12511195 - third COC for samples collected this week (19 to 23 August 2019)

EXTERNAL EMAIL\*

Hi Alena

Please find the attached file, which contains 10 tabs, as the COC.

Standard laboratory turnaround.

Please be aware that these samples were collected by different people, and jar / bag details were not provided to me, so that I removed the containers number and let your sample receipt check.

I am pretty I missed something, but please let your sample receipt log in the samples based on:

- 1) Only samples in PFAS containers are for PFAS analysis. If samples not in proper containers, please do NOT go ahead for the analysis.
- 2) Some samples are only in PFAS jars but need to be analysed for conventional contaminants.
- 3) Give us time to check the SRA etc prior to analysis.

Please let us know if you have any questions.

Kind regards

Henry

**Henry Luo**  
**Senior Environmental Engineer - Contamination Assessment & Remediation**

**GHD**

*Proudly employee owned*

T: + 61 2 9239 7044 | F: + 61 2 9239 7199 | V: 217044 | M: 0414 090 002 | E: [henry.luo@ghd.com](mailto:henry.luo@ghd.com)  
Level 15 133 Castlereagh St Sydney NSW 2000 Australia | <http://www.ghd.com/>

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**From:** [AlenaBounkeua@eurofins.com](mailto:AlenaBounkeua@eurofins.com) <[AlenaBounkeua@eurofins.com](mailto:AlenaBounkeua@eurofins.com)>  
**Sent:** Friday, 23 August 2019 9:13 AM



To: Henry Luo <[Henry.Luo@ghd.com](mailto:Henry.Luo@ghd.com)>

Subject: Re: 12511195 - No COC

Thanks Henry

Kind Regards,

Alena Bounkeua

Eurofins|mgt

Phone: +61 2 9900 8414

Mobile: +61 429 365 410

On Fri, Aug 23, 2019 at 9:11 AM +1000, "Henry Luo" <[Henry.Luo@ghd.com](mailto:Henry.Luo@ghd.com)> wrote:

EXTERNAL EMAIL\*

Hi Alena

I will sort this out today.

Kind regards

Henry

**Henry Luo**

**Senior Environmental Engineer - Contamination Assessment & Remediation**

**GHD**

*Proudly employee owned*

T: + 61 2 9239 7044 | F: + 61 2 9239 7199 | V: 217044 | M: 0414 090 002 | E: [henry.luo@ghd.com](mailto:henry.luo@ghd.com)

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**From:** [AlenaBounkeua@eurofins.com](mailto:AlenaBounkeua@eurofins.com) <[AlenaBounkeua@eurofins.com](mailto:AlenaBounkeua@eurofins.com)>

**Sent:** Thursday, 22 August 2019 8:21 PM

**To:** Henry Luo <[Henry.Luo@ghd.com](mailto:Henry.Luo@ghd.com)>

**Subject:** 12511195 - No COC

Hi Henry,

Just letting you know we have received samples for this job yesterday with no COC.

If you could provide a COC at your earliest convenience that would be great.

Thanks,

Kind Regards,

Alena Bounkeua

**Eurofins | Environment Testing**

Phone: +61 2 9900 8414

Mobile: +61 429 365 410

Email: [AlenaBounkeua@eurofins.com](mailto:AlenaBounkeua@eurofins.com)

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**GHD Pty Ltd NSW**  
**Level 15, 133 Castlereagh Street**  
**Sydney**  
**NSW 2000**



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**Site Number 18217**

Accredited for compliance with ISO/IEC 17025–Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

**Attention:** Henry Luo  
**Report** 673140-AID  
**Project Name** TOWNSON AND BURDEKIN RD  
**Project ID** 12511195  
**Received Date** Aug 23, 2019  
**Date Reported** Aug 30, 2019

**Methodology:**

Asbestos Fibre  
 Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

*NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*

Unknown Mineral  
 Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

*NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*

Subsampling Soil  
 Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

*NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*

Bonded asbestos-  
 containing material  
 (ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

*NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*

Limit of Reporting

The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).

The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).

*NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

**Project Name** TOWNSON AND BURDEKIN RD  
**Project ID** 12511195  
**Date Sampled** Aug 15, 2019 to Aug 23, 2019  
**Report** 673140-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP17_0.0-0.1	19-Au36023	Aug 19, 2019	Approximate Sample 352g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH07_0.0-0.1	19-Au36026	Aug 15, 2019	Approximate Sample 208g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH07_0.5-0.6	19-Au36027	Aug 15, 2019	Approximate Sample 117g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH10_0.07-0.2	19-Au36030	Aug 20, 2019	Approximate Sample 205g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH10_0.2-0.45	19-Au36031	Aug 20, 2019	Approximate Sample 223g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP25_0-0.2	19-Au36033	Aug 20, 2019	Approximate Sample 239g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP24_0-0.1	19-Au36036	Aug 20, 2019	Approximate Sample 203g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP23_1.45-1.5	19-Au36039	Aug 20, 2019	Approximate Sample 274g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP21_0-0.1	19-Au36137	Aug 20, 2019	Approximate Sample 195g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP21_0.4-0.5	19-Au36139	Aug 20, 2019	Approximate Sample 156g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP21_1.4-1.5	19-Au36141	Aug 20, 2019	Approximate Sample 178g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP20_0-0.1	19-Au36142	Aug 20, 2019	Approximate Sample 122g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP19_0-0.2	19-Au36144	Aug 15, 2019	Approximate Sample 101g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP18_0-0.1	19-Au36147	Aug 15, 2019	Approximate Sample 122g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH09_0-0.2	19-Au36149	Aug 15, 2019	Approximate Sample 136g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP22_0-0.1	19-Au36151	Aug 21, 2019	Approximate Sample 217g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP12_0-0.2	19-Au36263	Aug 22, 2019	Approximate Sample 394g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP13_0-0.2	19-Au36265	Aug 21, 2019	Approximate Sample 500g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP14_0-0.2	19-Au36267	Aug 21, 2019	Approximate Sample 500g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP16_0-0.2	19-Au36269	Aug 22, 2019	Approximate Sample 56g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH08_0-0.2	19-Au36271	Aug 21, 2019	Approximate Sample 510g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP15_0.0-0.2	19-Au36303	Aug 23, 2019	Approximate Sample 410g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP15_0.2-0.4	19-Au36305	Aug 23, 2019	Approximate Sample 415g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH06_0.0-0.2	19-Au36307	Aug 23, 2019	Approximate Sample 52g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP14_0.9-1.2	19-Au36312	Aug 23, 2019	Approximate Sample 567g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP23_0.8-0.9	19-Au36458	Aug 20, 2019	Approximate Sample 212g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP16_1.4-1.5	19-Au36473	Aug 22, 2019	Approximate Sample 41g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH08_0.3-0.5	19-Au36474	Aug 21, 2019	Approximate Sample 62g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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>
Asbestos - LTM-ASB-8020	Sydney	Aug 26, 2019	Indefinite

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 23, 2019 6:07 PM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 673140	<b>Due:</b> Aug 30, 2019
	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoralkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
<b>External Laboratory</b>																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	TP17_0.0-0.1	Aug 19, 2019		Soil	S19-Au36023	X									X	X						X
2	QC09	Aug 15, 2019		Soil	S19-Au36024											X			X			
3	TP17_0.5-0.6	Aug 15, 2019		Soil	S19-Au36025											X			X			
4	BH07_0.0-0.1	Aug 15, 2019		Soil	S19-Au36026	X									X	X						X
5	BH07_0.5-0.6	Aug 15, 2019		Soil	S19-Au36027	X										X						X
6	BH07_1.0-1.1	Aug 15, 2019		Soil	S19-Au36028											X						X
7	BH07_2.9-3.0	Aug 15, 2019		Soil	S19-Au36029											X			X			X
8	BH10_0.07-0.2	Aug 20, 2019		Soil	S19-Au36030	X									X	X						X
9	BH10_0.2-0.45	Aug 20, 2019		Soil	S19-Au36031	X										X						X



<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 23, 2019 6:07 PM
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<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoralkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
10	BH10_0.9-1.0	Aug 20, 2019		Soil	S19-Au36032											X			X			X
11	TP25_0-0.2	Aug 20, 2019		Soil	S19-Au36033	X				X					X	X						
12	TP25_0.3-0.4	Aug 20, 2019		Soil	S19-Au36034										X						X	X
13	TP25_1.5-1.6	Aug 20, 2019		Soil	S19-Au36035										X				X			X
14	TP24_0-0.1	Aug 20, 2019		Soil	S19-Au36036	X									X	X					X	X
15	TP24_1.5-1.6	Aug 20, 2019		Soil	S19-Au36037										X				X			X
16	TP23_0-0.8	Aug 20, 2019		Soil	S19-Au36038		X															
17	TP23_1.45-1.5	Aug 20, 2019		Soil	S19-Au36039	X										X			X			X
18	FD02_200819	Aug 20, 2019		Soil	S19-Au36040											X			X			X
19	RB_200819	Aug 20, 2019		Water	S19-Au36136							X										
20	TP21_0-0.1	Aug 20, 2019		Soil	S19-Au36137	X									X	X					X	X
21	FD03_200819	Aug 20, 2019		Soil	S19-Au36138											X			X			X

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<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
22	TP21_0.4-0.5	Aug 20, 2019		Soil	S19-Au36139	X																
23	TP21_0.9-1.0	Aug 20, 2019		Soil	S19-Au36140											X						X
24	TP21_1.4-1.5	Aug 20, 2019		Soil	S19-Au36141	X										X			X			
25	TP20_0-0.1	Aug 20, 2019		Soil	S19-Au36142	X									X	X					X	X
26	TP20_0.4-0.5	Aug 20, 2019		Soil	S19-Au36143											X			X			
27	TP19_0-0.2	Aug 15, 2019		Soil	S19-Au36144	X									X	X					X	
28	TP19_0.5-0.6	Aug 15, 2019		Soil	S19-Au36145											X			X			
29	RB_210819	Aug 21, 2019		Water	S19-Au36146							X										
30	TP18_0-0.1	Aug 15, 2019		Soil	S19-Au36147	X									X	X					X	
31	TP18_0.4-0.5	Aug 15, 2019		Soil	S19-Au36148											X			X			
32	BH09_0-0.2	Aug 15, 2019		Soil	S19-Au36149	X									X	X					X	X
33	BH09_1.5-1.7	Aug 15, 2019		Soil	S19-Au36150											X			X			X

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 23, 2019 6:07 PM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	673140	<b>Due:</b>	Aug 30, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
34	TP22_0-0.1	Aug 21, 2019		Soil	S19-Au36151	X								X	X						X	X
35	TP22_0.4-0.5	Aug 21, 2019		Soil	S19-Au36152										X							X
36	TP22_1.5-1.6	Aug 21, 2019		Soil	S19-Au36262										X				X			
37	TP12_0-0.2	Aug 22, 2019		Soil	S19-Au36263	X								X	X						X	
38	TP12_0.4-0.5	Aug 22, 2019		Soil	S19-Au36264										X				X			
39	TP13_0-0.2	Aug 21, 2019		Soil	S19-Au36265	X								X	X						X	
40	TP13_0.8-0.9	Aug 22, 2019		Soil	S19-Au36266										X				X			
41	TP14_0-0.2	Aug 21, 2019		Soil	S19-Au36267	X								X	X						X	
42	TP14_1.4-1.5	Aug 22, 2019		Soil	S19-Au36268										X				X			
43	TP16_0-0.2	Aug 22, 2019		Soil	S19-Au36269	X							X					X				
44	TP16_0.9-1.0	Aug 22, 2019		Soil	S19-Au36270		X															
45	BH08_0-0.2	Aug 21, 2019		Soil	S19-Au36271	X							X					X				X

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 23, 2019 6:07 PM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	673140	<b>Due:</b>	Aug 30, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail				Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoralkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X			X			X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>				X	X			X		X	X		X	X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>							X		X				X	X	X					X
<b>Perth Laboratory - NATA Site # 23736</b>																				
46	BH08_0.8-1.0	Aug 21, 2019	Soil	S19-Au36272											X		X		X	
47	TP15_0.0-0.2	Aug 23, 2019	Soil	S19-Au36303	X							X	X						X	
48	TP15_0.5-0.6	Aug 23, 2019	Soil	S19-Au36304									X				X			
49	TP15_0.2-0.4	Aug 23, 2019	Soil	S19-Au36305	X							X	X						X	
50	TP15_0.7-0.9	Aug 23, 2019	Soil	S19-Au36306									X				X			
51	BH06_0.0-0.2	Aug 23, 2019	Soil	S19-Au36307	X							X	X						X	
52	QC11	Aug 23, 2019	Soil	S19-Au36308									X				X			
53	BH06_0.8-1.0	Aug 23, 2019	Soil	S19-Au36309									X				X		X	
54	RB0/230819	Aug 23, 2019	Water	S19-Au36310						X									X	
55	TB	Aug 23, 2019	Water	S19-Au36311															X	
56	TP14_0.9-1.2	Aug 23, 2019	Soil	S19-Au36312	X								X				X			
57	BH07_0.0-0.1	Aug 15, 2019	US Leachate	S19-Au36349					X										X	

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<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail				Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoralkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X				X		X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>				X	X			X			X	X	X	X	X	X	X	X		
<b>Brisbane Laboratory - NATA Site # 20794</b>							X		X				X	X	X					X
<b>Perth Laboratory - NATA Site # 23736</b>																				
58	BH07_1.0-1.1	Aug 15, 2019	US Leachate	S19-Au36350					X											X
59	BH07_2.9-3.0	Aug 15, 2019	US Leachate	S19-Au36351					X											X
60	BH10_0.2-0.45	Aug 20, 2019	US Leachate	S19-Au36352					X											X
61	BH10_0.9-1.0	Aug 20, 2019	US Leachate	S19-Au36353					X											X
62	TP25_0.3-0.4	Aug 20, 2019	US Leachate	S19-Au36354					X											X
63	TP25_1.5-1.6	Aug 20, 2019	US Leachate	S19-Au36355					X											X
64	TP24_0-0.1	Aug 20, 2019	US Leachate	S19-Au36356					X											X
65	TP24_1.5-1.6	Aug 20, 2019	US Leachate	S19-Au36357					X											X
66	TP23_0-0.8	Aug 20, 2019	US Leachate	S19-Au36358		X														
67	TP23_1.45-1.5	Aug 20, 2019	US Leachate	S19-Au36359					X											X
68	TP21_0-0.1	Aug 20, 2019	US Leachate	S19-Au36360					X											X
69	TP21_0.9-1.0	Aug 20, 2019	US Leachate	S19-Au36361					X											X

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	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail			Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>					X			X			X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>			X	X			X		X	X		X	X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>						X	X					X	X	X					X
<b>Perth Laboratory - NATA Site # 23736</b>																			
70	TP20_0-0.1	Aug 20, 2019						X											X
71	BH09_0-0.2	Aug 20, 2019					X			X									X
72	BH09_1.5-1.7	Aug 20, 2019					X												X
73	TP22_0-0.1	Aug 21, 2019					X												X
74	TP22_0.4-0.5	Aug 21, 2019					X												X
75	BH08_0-0.2	Aug 21, 2019					X												X
76	BH08_0.8-1.0	Aug 21, 2019					X												X
77	BH06_0.0-0.2	Aug 21, 2019					X												X
78	BH06_0.8-1.0	Aug 21, 2019					X												X
79	TP17_1.0-1.1	Aug 15, 2019				X													
80	TP17_1.4-1.5	Aug 15, 2019				X													
81	BH07_1.9-2.0	Aug 15, 2019				X													

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 23, 2019 6:07 PM
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<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoralkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
82	RB06	Aug 19, 2019		Water	S19-Au36452			X														
83	BH10_0.5-0.7	Aug 20, 2019		Soil	S19-Au36453			X														
84	TP25_0.9-1.0	Aug 20, 2019		Soil	S19-Au36454			X														
85	TP24_0.4-0.5	Aug 20, 2019		Soil	S19-Au36455			X														
86	TP24_0.6-0.7	Aug 20, 2019		Soil	S19-Au36456			X														
87	TP24_1.7-1.8	Aug 20, 2019		Soil	S19-Au36457			X														
88	TP23_0.8-0.9	Aug 20, 2019		Soil	S19-Au36458	X								X	X				X			X
89	FD01_200819	Aug 20, 2019		Soil	S19-Au36459			X														
90	FD04_00819	Aug 20, 2019		Soil	S19-Au36460			X														
91	TP20_1.2-1.3	Aug 20, 2019		Soil	S19-Au36461			X														
92	TP18_0.9-1.0	Aug 21, 2019		Soil	S19-Au36462			X														
93	BH09_0.3-0.5	Aug 21, 2019		Soil	S19-Au36463			X														

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	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoralkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
94	BH09_0.8-1.0	Aug 21, 2019		Soil	S19-Au36464			X														
95	BH09_2.1-2.3	Aug 21, 2019		Soil	S19-Au36465			X														
96	TP22_0.9-1.0	Aug 21, 2019		Soil	S19-Au36466			X														
97	TP12_0.9-1.0	Aug 22, 2019		Soil	S19-Au36467			X														
98	TP12_1.2-1.3	Aug 22, 2019		Soil	S19-Au36468			X														
99	TP12_1.5-1.6	Aug 22, 2019		Soil	S19-Au36469			X														
100	TP13_1.4-1.6	Aug 21, 2019		Soil	S19-Au36470			X														
101	TP14_0.4-0.5	Aug 21, 2019		Soil	S19-Au36471			X														
102	TP16_0.4-0.5	Aug 22, 2019		Soil	S19-Au36472					X												
103	TP16_1.4-1.5	Aug 22, 2019		Soil	S19-Au36473	X						X						X				
104	BH08_0.3-0.5	Aug 21, 2019		Soil	S19-Au36474	X						X						X				
105	BH08_1.8-2.0	Aug 21, 2019		Soil	S19-Au36475				X													



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<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoralkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
106	BH08_2.8-3.0	Aug 21, 2019		Soil	S19-Au36476				X													
107	BH08_3.8-4.0	Aug 22, 2019		Soil	S19-Au36477				X													
108	BH06_0.3-0.5	Aug 23, 2019		Soil	S19-Au36478			X														
109	BH06_1.8-2.0	Aug 23, 2019		Soil	S19-Au36479			X														
110	BH06_2.8-3.0	Aug 23, 2019		Soil	S19-Au36480			X														
111	BH06_3.8-4.0	Aug 23, 2019		Soil	S19-Au36481			X														
112	BH06_4.8-5.0	Aug 23, 2019		Soil	S19-Au36482			X														
113	BH07_3.9-4.0	Aug 15, 2019		Soil	S19-Au36730											X						X
114	FD03_210819	Aug 21, 2019		Soil	S19-Au36731											X						X
115	FD01_10819	Aug 21, 2019		Soil	S19-Au36732			X														
116	FD02_210819	Aug 21, 2019		Soil	S19-Au36733			X														
117	TRIP SPIKE	Not Provided		Soil	S19-Au36734									X								

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 23, 2019 6:07 PM
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<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail				Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X			X			X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>				X	X			X		X	X		X	X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>							X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																				
118	TRIP BLANK	Not Provided		Soil	S19-Au36735							X								
<b>Test Counts</b>				28	3	33	33	33	21	7	7	2	18	54	54	54	25	25	17	49

**Internal Quality Control Review and Glossary**
**General**

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

**Holding Times**

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

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

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

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

**Units**

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

**Terms**

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

**Comments**

S19-Au36269, S19-Au36473, S19-Au36474: The samples received were not collected in an approved asbestos bag and was therefore sub-sampled from the 250mL glass jar. Valid sub-sampling procedures were applied so as to ensure that the sub-samples to be analysed accurately represented the samples received.

**Sample Integrity**

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

**Qualifier Codes/Comments**

Code	Description
N/A	Not applicable

**Asbestos Counter/Identifier:**

Chamath JHM Annakkage                      Senior Analyst-Asbestos (NSW)

**Authorised by:**

Sayeed Abu                                      Senior Analyst-Asbestos (NSW)



**Glenn Jackson**  
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

GHD Pty Ltd NSW  
 Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000



NATA Accredited  
 Accreditation Number 1261  
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

Attention: **Henry Luo**

Report **673140-L**  
 Project name **TOWNSON AND BURDEKIN RD**  
 Project ID **12511195**  
 Received Date **Aug 23, 2019**

Client Sample ID			BH07_0.0-0.1	BH07_1.0-1.1	BH07_2.9-3.0	BH10_0.2-0.45
Sample Matrix			US Leachate	US Leachate	US Leachate	US Leachate
Eurofins Sample No.			S19-Au36349	S19-Au36350	S19-Au36351	S19-Au36352
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>USA Leaching Procedure</b>						
Leachate Fluid <sup>C01</sup>		comment	1.0	1.0	1.0	1.0
pH (initial)	0.1	pH Units	5.0	5.0	5.0	5.0
pH (Leachate fluid)	0.1	pH Units	5.0	5.0	5.0	5.0
pH (off)	0.1	pH Units	5.0	5.0	5.0	5.0
pH (USA HCl addition)	0.1	pH Units	1.8	1.7	1.7	1.6
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTTrDA) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTTeDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	84	102	77	80
13C5-PFPeA (surr.)	1	%	88	107	82	81
13C5-PFHxA (surr.)	1	%	97	114	92	93
13C4-PFHpA (surr.)	1	%	94	124	86	90
13C8-PFOA (surr.)	1	%	97	124	100	95
13C5-PFNA (surr.)	1	%	107	131	90	89
13C6-PFDA (surr.)	1	%	97	121	93	96
13C2-PFUnDA (surr.)	1	%	95	114	85	84
13C2-PFDoDA (surr.)	1	%	90	104	89	85
13C2-PFTTeDA (surr.)	1	%	92	91	95	87
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			BH07_0.0-0.1 US Leachate S19-Au36349 Aug 15, 2019	BH07_1.0-1.1 US Leachate S19-Au36350 Aug 15, 2019	BH07_2.9-3.0 US Leachate S19-Au36351 Aug 15, 2019	BH10_0.2-0.45 US Leachate S19-Au36352 Aug 20, 2019
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl sulfonamido substances</b>						
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	83	100	81	78
D3-N-MeFOSA (surr.)	1	%	65	78	62	48
D5-N-EtFOSA (surr.)	1	%	56	81	59	64
D7-N-MeFOSE (surr.)	1	%	74	89	69	70
D9-N-EtFOSE (surr.)	1	%	69	82	60	61
D5-N-EtFOSAA (surr.)	1	%	50	67	55	51
D3-N-MeFOSAA (surr.)	1	%	55	73	60	55
<b>Perfluoroalkyl sulfonic acids (PFSA)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	<sup>N09</sup> 0.02
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	89	113	84	84
18O2-PFHxS (surr.)	1	%	96	121	91	92
13C8-PFOS (surr.)	1	%	100	118	93	91
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	88	124	91	88
13C2-6:2 FTSA (surr.)	1	%	69	89	63	69
13C2-8:2 FTSA (surr.)	1	%	65	99	69	74
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.02
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.02
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.02
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			BH10_0.9-1.0	TP25_0.3-0.4	TP25_1.5-1.6	TP24_0-0.1
Sample Matrix			US Leachate	US Leachate	US Leachate	US Leachate
Eurofins Sample No.			S19-Au36353	S19-Au36354	S19-Au36355	S19-Au36356
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>USA Leaching Procedure</b>						
Leachate Fluid <sup>C01</sup>		comment	1.0	1.0	1.0	1.0
pH (initial)	0.1	pH Units	5.0	5.0	5.0	5.0
pH (Leachate fluid)	0.1	pH Units	5.0	5.0	5.0	5.0
pH (off)	0.1	pH Units	5.0	5.0	5.0	5.0
pH (USA HCl addition)	0.1	pH Units	1.1	1.4	1.6	1.6
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTTrDA) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	64	95	98	98
13C5-PFPeA (surr.)	1	%	68	104	110	109
13C5-PFHxA (surr.)	1	%	74	108	111	118
13C4-PFHpA (surr.)	1	%	73	113	114	121
13C8-PFOA (surr.)	1	%	76	125	130	116
13C5-PFNA (surr.)	1	%	75	110	129	128
13C6-PFDA (surr.)	1	%	70	114	128	122
13C2-PFUnDA (surr.)	1	%	67	95	119	109
13C2-PFDoDA (surr.)	1	%	66	91	106	105
13C2-PFTeDA (surr.)	1	%	71	96	87	76
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	62	96	108	104
D3-N-MeFOSA (surr.)	1	%	39	75	80	64
D5-N-EtFOSA (surr.)	1	%	47	77	84	81
D7-N-MeFOSE (surr.)	1	%	63	94	100	82
D9-N-EtFOSE (surr.)	1	%	50	74	81	78
D5-N-EtFOSAA (surr.)	1	%	37	65	75	66
D3-N-MeFOSAA (surr.)	1	%	42	69	78	70

Client Sample ID			BH10_0.9-1.0	TP25_0.3-0.4	TP25_1.5-1.6	TP24_0-0.1
Sample Matrix			US Leachate	US Leachate	US Leachate	US Leachate
Eurofins Sample No.			S19-Au36353	S19-Au36354	S19-Au36355	S19-Au36356
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	0.01	ug/L	<sup>N09</sup> 0.02	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	72	114	119	118
18O2-PFHxS (surr.)	1	%	75	119	116	121
13C8-PFOS (surr.)	1	%	79	104	120	119
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	69	104	111	111
13C2-6:2 FTSA (surr.)	1	%	54	77	91	92
13C2-8:2 FTSA (surr.)	1	%	46	101	95	101
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.02	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.02	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.02	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			TP24_1.5-1.6	TP23_1.45-1.5	TP21_0-0.1	TP21_0.9-1.0
Sample Matrix			US Leachate	US Leachate	US Leachate	US Leachate
Eurofins Sample No.			S19-Au36357	S19-Au36359	S19-Au36360	S19-Au36361
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>USA Leaching Procedure</b>						
Leachate Fluid <sup>C01</sup>		comment	1.0	1.0	1.0	1.0
pH (initial)	0.1	pH Units	5.0	5.0	5.0	5.0
pH (Leachate fluid)	0.1	pH Units	5.0	5.0	5.0	5.0
pH (off)	0.1	pH Units	5.0	5.1	5.0	5.0
pH (USA HCl addition)	0.1	pH Units	1.5	1.6	1.6	1.6
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01



Client Sample ID			TP24_1.5-1.6	TP23_1.45-1.5	TP21_0-0.1	TP21_0.9-1.0
Sample Matrix			US Leachate	US Leachate	US Leachate	US Leachate
Eurofins Sample No.			S19-Au36357	S19-Au36359	S19-Au36360	S19-Au36361
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	77	94	91	90
13C5-PFPeA (surr.)	1	%	90	106	94	86
13C5-PFHxA (surr.)	1	%	95	106	98	110
13C4-PFHpA (surr.)	1	%	101	112	110	114
13C8-PFOA (surr.)	1	%	96	108	109	114
13C5-PFNA (surr.)	1	%	104	114	116	112
13C6-PFDA (surr.)	1	%	90	106	100	109
13C2-PFUnDA (surr.)	1	%	80	95	94	99
13C2-PFDoDA (surr.)	1	%	77	89	95	94
13C2-PFTeDA (surr.)	1	%	87	88	96	91
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	77	94	93	90
D3-N-MeFOSA (surr.)	1	%	62	71	67	71
D5-N-EtFOSA (surr.)	1	%	68	81	75	81
D7-N-MeFOSE (surr.)	1	%	60	93	76	91
D9-N-EtFOSE (surr.)	1	%	60	73	75	74
D5-N-EtFOSAA (surr.)	1	%	49	46	69	43
D3-N-MeFOSAA (surr.)	1	%	52	47	68	46
<b>Perfluoroalkyl sulfonic acids (PFSAs)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	92	104	105	98
18O2-PFHxS (surr.)	1	%	90	109	102	105
13C8-PFOS (surr.)	1	%	90	107	100	112

Client Sample ID			TP24_1.5-1.6	TP23_1.45-1.5	TP21_0-0.1	TP21_0.9-1.0
Sample Matrix			US Leachate	US Leachate	US Leachate	US Leachate
Eurofins Sample No.			S19-Au36357	S19-Au36359	S19-Au36360	S19-Au36361
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	93	98	107	103
13C2-6:2 FTSA (surr.)	1	%	70	69	86	75
13C2-8:2 FTSA (surr.)	1	%	67	80	93	65
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			TP20_0-0.1	BH09_0-0.2	BH09_1.5-1.7	TP22_0-0.1
Sample Matrix			US Leachate	US Leachate	US Leachate	US Leachate
Eurofins Sample No.			S19-Au36362	S19-Au36363	S19-Au36364	S19-Au36365
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>USA Leaching Procedure</b>						
Leachate Fluid <sup>C01</sup>		comment	1.0	1.0	1.0	1.0
pH (initial)	0.1	pH Units	5.0	5.0	5.0	5.0
pH (Leachate fluid)	0.1	pH Units	5.0	5.0	5.0	5.0
pH (off)	0.1	pH Units	5.0	5.0	4.9	5.4
pH (USA HCl addition)	0.1	pH Units	1.6	1.7	1.6	2.0
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTTrDA) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTTeDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	107	90	113	104
13C5-PFPeA (surr.)	1	%	111	97	123	112
13C5-PFHxA (surr.)	1	%	115	104	129	137
13C4-PFHpA (surr.)	1	%	125	124	135	138
13C8-PFOA (surr.)	1	%	129	116	142	129
13C5-PFNA (surr.)	1	%	132	117	132	135
13C6-PFDA (surr.)	1	%	129	111	137	132
13C2-PFUnDA (surr.)	1	%	119	106	124	105

Client Sample ID			TP20_0-0.1	BH09_0-0.2	BH09_1.5-1.7	TP22_0-0.1
Sample Matrix			US Leachate	US Leachate	US Leachate	US Leachate
Eurofins Sample No.			S19-Au36362	S19-Au36363	S19-Au36364	S19-Au36365
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
13C2-PFDoDA (surr.)	1	%	106	90	104	93
13C2-PFTEdA (surr.)	1	%	86	71	60	56
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	104	91	111	103
D3-N-MeFOSA (surr.)	1	%	77	66	68	66
D5-N-EtFOSA (surr.)	1	%	82	72	71	68
D7-N-MeFOSE (surr.)	1	%	96	81	76	81
D9-N-EtFOSE (surr.)	1	%	67	55	79	74
D5-N-EtFOSAA (surr.)	1	%	74	64	66	47
D3-N-MeFOSAA (surr.)	1	%	78	67	65	56
<b>Perfluoroalkyl sulfonic acids (PFSA)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	0.01	ug/L	< 0.01	<sup>N09</sup> 0.03	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	120	109	125	129
18O2-PFHxS (surr.)	1	%	125	115	135	123
13C8-PFOS (surr.)	1	%	127	114	135	115
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	129	89	133	139
13C2-6:2 FTSA (surr.)	1	%	91	86	101	100
13C2-8:2 FTSA (surr.)	1	%	106	93	129	111
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	0.03	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	0.03	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	0.03	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			TP22_0.4-0.5 US Leachate S19-Au36366 Aug 21, 2019	BH08_0-0.2 US Leachate S19-Au36367 Aug 21, 2019	BH08_0.8-1.0 US Leachate S19-Au36368 Aug 21, 2019	BH06_0.0-0.2 US Leachate S19-Au36369 Aug 21, 2019
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>USA Leaching Procedure</b>						
Leachate Fluid <sup>C01</sup>		comment	1.0	1.0	1.0	1.0
pH (initial)	0.1	pH Units	5.0	5.0	5.0	5.0
pH (Leachate fluid)	0.1	pH Units	5.0	5.0	5.0	5.0
pH (off)	0.1	pH Units	5.0	4.9	5.0	5.0
pH (USA HCl addition)	0.1	pH Units	1.1	1.0	1.0	1.0
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTTrDA) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	91	104	97	79
13C5-PFPeA (surr.)	1	%	98	117	99	86
13C5-PFHxA (surr.)	1	%	110	119	107	93
13C4-PFHpA (surr.)	1	%	106	127	121	106
13C8-PFOA (surr.)	1	%	107	126	122	107
13C5-PFNA (surr.)	1	%	113	121	116	111
13C6-PFDA (surr.)	1	%	117	125	109	97
13C2-PFUnDA (surr.)	1	%	100	107	102	91
13C2-PFDoDA (surr.)	1	%	106	93	92	94
13C2-PFTeDA (surr.)	1	%	98	52	80	58
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	96	46	71	88
D3-N-MeFOSA (surr.)	1	%	73	17	51	72
D5-N-EtFOSA (surr.)	1	%	83	23	56	82
D7-N-MeFOSE (surr.)	1	%	78	31	56	69
D9-N-EtFOSE (surr.)	1	%	75	24	54	74
D5-N-EtFOSAA (surr.)	1	%	76	58	48	38
D3-N-MeFOSAA (surr.)	1	%	78	64	50	40

Client Sample ID			TP22_0.4-0.5	BH08_0-0.2	BH08_0.8-1.0	BH06_0.0-0.2
Sample Matrix			US Leachate	US Leachate	US Leachate	US Leachate
Eurofins Sample No.			S19-Au36366	S19-Au36367	S19-Au36368	S19-Au36369
Date Sampled			Aug 21, 2019	Aug 21, 2019	Aug 21, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl sulfonic acids (PFSA)s</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	0.01	ug/L	< 0.01	<sup>NO9</sup> 0.01	< 0.01	<sup>NO9</sup> 0.02
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	106	116	118	101
18O2-PFHxS (surr.)	1	%	107	121	119	100
13C8-PFOS (surr.)	1	%	113	119	112	97
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)s</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	99	123	129	96
13C2-6:2 FTSA (surr.)	1	%	79	91	78	71
13C2-8:2 FTSA (surr.)	1	%	75	98	86	77
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	0.01	< 0.01	0.02
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	0.01	< 0.01	0.02
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	0.01	< 0.01	0.02
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			BH06_0.8-1.0
Sample Matrix			US Leachate
Eurofins Sample No.			S19-Au36370
Date Sampled			Aug 21, 2019
Test/Reference	LOR	Unit	
<b>USA Leaching Procedure</b>			
Leachate Fluid <sup>C01</sup>		comment	1.0
pH (initial)	0.1	pH Units	5.0
pH (Leachate fluid)	0.1	pH Units	5.0
pH (off)	0.1	pH Units	5.0
pH (USA HCl addition)	0.1	pH Units	1.0
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>			
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	0.01	ug/L	< 0.01

<b>Client Sample ID</b>			<b>BH06_0.8-1.0</b>
<b>Sample Matrix</b>			<b>US Leachate</b>
<b>Eurofins Sample No.</b>			<b>S19-Au36370</b>
<b>Date Sampled</b>			<b>Aug 21, 2019</b>
Test/Reference	LOR	Unit	
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>			
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTTrDA) <sup>N15</sup>	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	104
13C5-PFPeA (surr.)	1	%	104
13C5-PFHxA (surr.)	1	%	125
13C4-PFHpA (surr.)	1	%	121
13C8-PFOA (surr.)	1	%	130
13C5-PFNA (surr.)	1	%	127
13C6-PFDA (surr.)	1	%	114
13C2-PFUnDA (surr.)	1	%	95
13C2-PFDoDA (surr.)	1	%	98
13C2-PFTeDA (surr.)	1	%	98
<b>Perfluoroalkyl sulfonamido substances</b>			
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	85
D3-N-MeFOSA (surr.)	1	%	71
D5-N-EtFOSA (surr.)	1	%	76
D7-N-MeFOSE (surr.)	1	%	86
D9-N-EtFOSE (surr.)	1	%	77
D5-N-EtFOSAA (surr.)	1	%	59
D3-N-MeFOSAA (surr.)	1	%	62
<b>Perfluoroalkyl sulfonic acids (PFSAs)</b>			
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	119
18O2-PFHxS (surr.)	1	%	119
13C8-PFOS (surr.)	1	%	112

<b>Client Sample ID</b>			<b>BH06_0.8-1.0</b>
<b>Sample Matrix</b>			<b>US Leachate</b>
<b>Eurofins Sample No.</b>			<b>S19-Au36370</b>
<b>Date Sampled</b>			<b>Aug 21, 2019</b>
Test/Reference	LOR	Unit	
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	139
13C2-6:2 FTSA (surr.)	1	%	78
13C2-8:2 FTSA (surr.)	1	%	85
<b>PFASs Summations</b>			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

Description	Testing Site	Extracted	Holding Time
USA Leaching Procedure - Method: LTM-GEN-7010 Leaching Procedure for Soils & Solid Wastes	Brisbane	Aug 27, 2019	14 Days
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 28, 2019	14 Days
Perfluoroalkyl sulfonamido substances - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 28, 2019	14 Days
Perfluoroalkyl sulfonic acids (PFSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 28, 2019	14 Days
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 28, 2019	14 Days



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<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 673140	<b>Due:</b> Aug 30, 2019
	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
<b>External Laboratory</b>																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	TP17_0.0-0.1	Aug 19, 2019		Soil	S19-Au36023	X									X	X						X
2	QC09	Aug 15, 2019		Soil	S19-Au36024											X			X			
3	TP17_0.5-0.6	Aug 15, 2019		Soil	S19-Au36025											X			X			
4	BH07_0.0-0.1	Aug 15, 2019		Soil	S19-Au36026	X									X	X						X
5	BH07_0.5-0.6	Aug 15, 2019		Soil	S19-Au36027	X										X						X
6	BH07_1.0-1.1	Aug 15, 2019		Soil	S19-Au36028											X						X
7	BH07_2.9-3.0	Aug 15, 2019		Soil	S19-Au36029											X			X			X
8	BH10_0.07-0.2	Aug 20, 2019		Soil	S19-Au36030	X									X	X						X
9	BH10_0.2-0.45	Aug 20, 2019		Soil	S19-Au36031	X										X						X

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<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
10	BH10_0.9-1.0	Aug 20, 2019		Soil	S19-Au36032											X			X			X
11	TP25_0-0.2	Aug 20, 2019		Soil	S19-Au36033	X									X	X						
12	TP25_0.3-0.4	Aug 20, 2019		Soil	S19-Au36034											X					X	X
13	TP25_1.5-1.6	Aug 20, 2019		Soil	S19-Au36035											X			X			X
14	TP24_0-0.1	Aug 20, 2019		Soil	S19-Au36036	X									X	X					X	X
15	TP24_1.5-1.6	Aug 20, 2019		Soil	S19-Au36037											X			X			X
16	TP23_0-0.8	Aug 20, 2019		Soil	S19-Au36038		X															
17	TP23_1.45-1.5	Aug 20, 2019		Soil	S19-Au36039	X										X			X			X
18	FD02_200819	Aug 20, 2019		Soil	S19-Au36040											X			X			X
19	RB_200819	Aug 20, 2019		Water	S19-Au36136							X										
20	TP21_0-0.1	Aug 20, 2019		Soil	S19-Au36137	X									X	X					X	X
21	FD03_200819	Aug 20, 2019		Soil	S19-Au36138											X			X			X

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<b>Project ID:</b> 12511195	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
22	TP21_0.4-0.5	Aug 20, 2019		Soil	S19-Au36139	X																
23	TP21_0.9-1.0	Aug 20, 2019		Soil	S19-Au36140										X							X
24	TP21_1.4-1.5	Aug 20, 2019		Soil	S19-Au36141	X									X				X			
25	TP20_0-0.1	Aug 20, 2019		Soil	S19-Au36142	X								X	X						X	X
26	TP20_0.4-0.5	Aug 20, 2019		Soil	S19-Au36143										X				X			
27	TP19_0-0.2	Aug 15, 2019		Soil	S19-Au36144	X								X	X						X	
28	TP19_0.5-0.6	Aug 15, 2019		Soil	S19-Au36145										X				X			
29	RB_210819	Aug 21, 2019		Water	S19-Au36146							X										
30	TP18_0-0.1	Aug 15, 2019		Soil	S19-Au36147	X								X	X						X	
31	TP18_0.4-0.5	Aug 15, 2019		Soil	S19-Au36148										X				X			
32	BH09_0-0.2	Aug 15, 2019		Soil	S19-Au36149	X								X	X						X	X
33	BH09_1.5-1.7	Aug 15, 2019		Soil	S19-Au36150										X				X			X

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<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoralkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
34	TP22_0-0.1	Aug 21, 2019		Soil	S19-Au36151	X								X	X						X	X
35	TP22_0.4-0.5	Aug 21, 2019		Soil	S19-Au36152										X							X
36	TP22_1.5-1.6	Aug 21, 2019		Soil	S19-Au36262										X				X			
37	TP12_0-0.2	Aug 22, 2019		Soil	S19-Au36263	X								X	X						X	
38	TP12_0.4-0.5	Aug 22, 2019		Soil	S19-Au36264										X				X			
39	TP13_0-0.2	Aug 21, 2019		Soil	S19-Au36265	X								X	X						X	
40	TP13_0.8-0.9	Aug 22, 2019		Soil	S19-Au36266										X				X			
41	TP14_0-0.2	Aug 21, 2019		Soil	S19-Au36267	X								X	X						X	
42	TP14_1.4-1.5	Aug 22, 2019		Soil	S19-Au36268										X				X			
43	TP16_0-0.2	Aug 22, 2019		Soil	S19-Au36269	X							X					X				
44	TP16_0.9-1.0	Aug 22, 2019		Soil	S19-Au36270		X															
45	BH08_0-0.2	Aug 21, 2019		Soil	S19-Au36271	X							X					X				X

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<b>Project ID:</b> 12511195	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail				Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X				X		X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>				X	X			X			X		X	X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>							X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																				
46	BH08_0.8-1.0	Aug 21, 2019	Soil	S19-Au36272												X		X		X
47	TP15_0.0-0.2	Aug 23, 2019	Soil	S19-Au36303	X							X	X						X	
48	TP15_0.5-0.6	Aug 23, 2019	Soil	S19-Au36304									X				X			
49	TP15_0.2-0.4	Aug 23, 2019	Soil	S19-Au36305	X							X	X						X	
50	TP15_0.7-0.9	Aug 23, 2019	Soil	S19-Au36306									X				X			
51	BH06_0.0-0.2	Aug 23, 2019	Soil	S19-Au36307	X							X	X						X	X
52	QC11	Aug 23, 2019	Soil	S19-Au36308									X				X			
53	BH06_0.8-1.0	Aug 23, 2019	Soil	S19-Au36309									X				X			X
54	RB0/230819	Aug 23, 2019	Water	S19-Au36310						X										X
55	TB	Aug 23, 2019	Water	S19-Au36311																X
56	TP14_0.9-1.2	Aug 23, 2019	Soil	S19-Au36312	X								X				X			
57	BH07_0.0-0.1	Aug 15, 2019	US Leachate	S19-Au36349					X											X

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Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail				Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoralkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>				X	X			X			X		X	X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>							X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																				
58	BH07_1.0-1.1	Aug 15, 2019	US Leachate	S19-Au36350					X											X
59	BH07_2.9-3.0	Aug 15, 2019	US Leachate	S19-Au36351					X											X
60	BH10_0.2-0.45	Aug 20, 2019	US Leachate	S19-Au36352					X											X
61	BH10_0.9-1.0	Aug 20, 2019	US Leachate	S19-Au36353					X											X
62	TP25_0.3-0.4	Aug 20, 2019	US Leachate	S19-Au36354					X											X
63	TP25_1.5-1.6	Aug 20, 2019	US Leachate	S19-Au36355					X											X
64	TP24_0-0.1	Aug 20, 2019	US Leachate	S19-Au36356					X											X
65	TP24_1.5-1.6	Aug 20, 2019	US Leachate	S19-Au36357					X											X
66	TP23_0-0.8	Aug 20, 2019	US Leachate	S19-Au36358		X														
67	TP23_1.45-1.5	Aug 20, 2019	US Leachate	S19-Au36359					X											X
68	TP21_0-0.1	Aug 20, 2019	US Leachate	S19-Au36360					X											X
69	TP21_0.9-1.0	Aug 20, 2019	US Leachate	S19-Au36361					X											X

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**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail			Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>					X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>			X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>						X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																			
70	TP20_0-0.1	Aug 20, 2019						X											X
71	BH09_0-0.2	Aug 20, 2019						X											X
72	BH09_1.5-1.7	Aug 20, 2019						X											X
73	TP22_0-0.1	Aug 21, 2019						X											X
74	TP22_0.4-0.5	Aug 21, 2019						X											X
75	BH08_0-0.2	Aug 21, 2019						X											X
76	BH08_0.8-1.0	Aug 21, 2019						X											X
77	BH06_0.0-0.2	Aug 21, 2019						X											X
78	BH06_0.8-1.0	Aug 21, 2019						X											X
79	TP17_1.0-1.1	Aug 15, 2019																	X
80	TP17_1.4-1.5	Aug 15, 2019																	X
81	BH07_1.9-2.0	Aug 15, 2019																	X

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**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
82	RB06	Aug 19, 2019		Water	S19-Au36452			X														
83	BH10_0.5-0.7	Aug 20, 2019		Soil	S19-Au36453			X														
84	TP25_0.9-1.0	Aug 20, 2019		Soil	S19-Au36454			X														
85	TP24_0.4-0.5	Aug 20, 2019		Soil	S19-Au36455			X														
86	TP24_0.6-0.7	Aug 20, 2019		Soil	S19-Au36456			X														
87	TP24_1.7-1.8	Aug 20, 2019		Soil	S19-Au36457			X														
88	TP23_0.8-0.9	Aug 20, 2019		Soil	S19-Au36458	X								X	X				X			X
89	FD01_200819	Aug 20, 2019		Soil	S19-Au36459			X														
90	FD04_00819	Aug 20, 2019		Soil	S19-Au36460			X														
91	TP20_1.2-1.3	Aug 20, 2019		Soil	S19-Au36461			X														
92	TP18_0.9-1.0	Aug 21, 2019		Soil	S19-Au36462			X														
93	BH09_0.3-0.5	Aug 21, 2019		Soil	S19-Au36463			X														



<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 23, 2019 6:07 PM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 673140	<b>Due:</b> Aug 30, 2019
<b>Project Name:</b> TOWNSON AND BURDEKIN RD	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
<b>Project ID:</b> 12511195	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X		X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
94	BH09_0.8-1.0	Aug 21, 2019		Soil	S19-Au36464			X														
95	BH09_2.1-2.3	Aug 21, 2019		Soil	S19-Au36465			X														
96	TP22_0.9-1.0	Aug 21, 2019		Soil	S19-Au36466			X														
97	TP12_0.9-1.0	Aug 22, 2019		Soil	S19-Au36467			X														
98	TP12_1.2-1.3	Aug 22, 2019		Soil	S19-Au36468			X														
99	TP12_1.5-1.6	Aug 22, 2019		Soil	S19-Au36469			X														
100	TP13_1.4-1.6	Aug 21, 2019		Soil	S19-Au36470			X														
101	TP14_0.4-0.5	Aug 21, 2019		Soil	S19-Au36471			X														
102	TP16_0.4-0.5	Aug 22, 2019		Soil	S19-Au36472					X												
103	TP16_1.4-1.5	Aug 22, 2019		Soil	S19-Au36473	X						X						X				
104	BH08_0.3-0.5	Aug 21, 2019		Soil	S19-Au36474	X						X						X				
105	BH08_1.8-2.0	Aug 21, 2019		Soil	S19-Au36475				X													

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 23, 2019 6:07 PM
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	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
106	BH08_2.8-3.0	Aug 21, 2019		Soil	S19-Au36476				X													
107	BH08_3.8-4.0	Aug 22, 2019		Soil	S19-Au36477				X													
108	BH06_0.3-0.5	Aug 23, 2019		Soil	S19-Au36478			X														
109	BH06_1.8-2.0	Aug 23, 2019		Soil	S19-Au36479			X														
110	BH06_2.8-3.0	Aug 23, 2019		Soil	S19-Au36480			X														
111	BH06_3.8-4.0	Aug 23, 2019		Soil	S19-Au36481			X														
112	BH06_4.8-5.0	Aug 23, 2019		Soil	S19-Au36482			X														
113	BH07_3.9-4.0	Aug 15, 2019		Soil	S19-Au36730											X						X
114	FD03_210819	Aug 21, 2019		Soil	S19-Au36731											X						X
115	FD01_10819	Aug 21, 2019		Soil	S19-Au36732			X														
116	FD02_210819	Aug 21, 2019		Soil	S19-Au36733			X														
117	TRIP SPIKE	Not Provided		Soil	S19-Au36734									X								

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 23, 2019 6:07 PM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	673140	<b>Due:</b>	Aug 30, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail				Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)	
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X				X		X	X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>				X	X			X			X		X	X	X	X	X	X	X		
<b>Brisbane Laboratory - NATA Site # 20794</b>							X		X					X	X	X					X
<b>Perth Laboratory - NATA Site # 23736</b>																					
118	TRIP BLANK	Not Provided		Soil	S19-Au36735							X									
<b>Test Counts</b>				28	3	33	33	33	21	7	7	2	18	54	54	54	25	25	17	49	

**Internal Quality Control Review and Glossary**
**General**

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Perfluoroalkyl carboxylic acids (PFCAs)</b>									
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass			
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass			
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass			
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass			
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass			
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass			
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass			
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass			
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass			
Perfluorotridecanoic acid (PFTTrDA)	ug/L	< 0.01			0.01	Pass			
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass			
<b>Method Blank</b>									
<b>Perfluoroalkyl sulfonamido substances</b>									
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass			
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass			
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass			
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05			0.05	Pass			
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05			0.05	Pass			
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass			
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass			
<b>Method Blank</b>									
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>									
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass			
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass			
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass			
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass			
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass			
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass			
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass			
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass			
<b>Method Blank</b>									
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>									
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass			
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass			
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass			
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S19-Au36349	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1	Result 2	RPD			
Perfluorododecanoic acid (PFDoDA)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTTrDA)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTTeDA)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
<b>Duplicate</b>									
<b>Perfluoroalkyl sulfonamido substances</b>				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S19-Au36349	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S19-Au36349	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S19-Au36349	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S19-Au36349	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S19-Au36349	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S19-Au36349	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S19-Au36349	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
<b>Duplicate</b>									
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
<b>Duplicate</b>									
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S19-Au36349	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S19-Au36349	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
<b>Duplicate</b>									
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S19-Au36359	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

<b>Duplicate</b>								
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1	Result 2	RPD		
Perfluorooctanoic acid (PFOA)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanoic acid (PFNA)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
<b>Duplicate</b>								
<b>Perfluoroalkyl sulfonamido substances</b>				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S19-Au36359	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S19-Au36359	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S19-Au36359	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S19-Au36359	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S19-Au36359	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S19-Au36359	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S19-Au36359	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
<b>Duplicate</b>								
<b>Perfluoroalkyl sulfonic acids (PFSA)</b>				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
<b>Duplicate</b>								
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S19-Au36359	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S19-Au36359	CP	ug/L	< 0.01	< 0.01	<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
C01	Leachate Fluid Key: 1 - pH 5.0; 2 - pH 2.9; 3 - pH 9.2; 4 - Reagent (DI) water; 5 - Client sample, 6 - other
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

**Authorised By**

Alena Bounkeua	Analytical Services Manager
Bryan Wilson	Senior Analyst-PFAS (QLD)


**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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GHD Pty Ltd NSW  
 Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000



NATA Accredited  
 Accreditation Number 1261  
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

Attention: **Henry Luo**

Report **673140-S**  
 Project name **TOWNSON AND BURDEKIN RD**  
 Project ID **12511195**  
 Received Date **Aug 23, 2019**

Client Sample ID			TP17_0.0-0.1	QC09	TP17_0.5-0.6	BH07_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36023	S19-Au36024	S19-Au36025	S19-Au36026
Date Sampled			Aug 19, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	-
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	-
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	91	78	81	-
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	-
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-

Client Sample ID			TP17_0.0-0.1	QC09	TP17_0.5-0.6	BH07_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36023	S19-Au36024	S19-Au36025	S19-Au36026
Date Sampled			Aug 19, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	51	97	88	-
p-Terphenyl-d14 (surr.)	1	%	56	89	86	-
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Toxaphene	1	mg/kg	< 1	-	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	< 0.1
Dibutylchloroendate (surr.)	1	%	62	-	-	98
Tetrachloro-m-xylene (surr.)	1	%	58	-	-	96
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Bolstar	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Coumaphos	2	mg/kg	< 2	-	-	< 2
Demeton-S	0.2	mg/kg	< 0.2	-	-	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	-	-	< 0.2
Diazinon	0.2	mg/kg	< 0.2	-	-	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	-	-	< 0.2

Client Sample ID			TP17_0.0-0.1	QC09	TP17_0.5-0.6	BH07_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36023	S19-Au36024	S19-Au36025	S19-Au36026
Date Sampled			Aug 19, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Dimethoate	0.2	mg/kg	< 0.2	-	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	-	-	< 0.2
EPN	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethion	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Malathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Merphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Monocrotophos	2	mg/kg	< 2	-	-	< 2
Naled	0.2	mg/kg	< 0.2	-	-	< 0.2
Omethoate	2	mg/kg	< 2	-	-	< 2
Phorate	0.2	mg/kg	< 0.2	-	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	-	-	< 0.2
Ronnel	0.2	mg/kg	< 0.2	-	-	< 0.2
Terbufos	0.2	mg/kg	< 0.2	-	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	-	-	< 0.2
Triphenylphosphate (surr.)	1	%	50	-	-	81
<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-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-	-
2-Nitrophenol	1.0	mg/kg	< 1	-	-	-
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-	-
2,4-Dinitrophenol	5	mg/kg	< 5	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-	-
4-Nitrophenol	5	mg/kg	< 5	-	-	-
Dinoseb	20	mg/kg	< 20	-	-	-
Phenol	0.5	mg/kg	< 0.5	-	-	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	-	-
Phenol-d6 (surr.)	1	%	84	-	-	-

Client Sample ID			TP17_0.0-0.1	QC09	TP17_0.5-0.6	BH07_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36023	S19-Au36024	S19-Au36025	S19-Au36026
Date Sampled			Aug 19, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	5.8	5.9	4.2	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	16	17	14	-
Copper	5	mg/kg	28	32	13	-
Lead	5	mg/kg	28	31	10	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	16	19	5.5	-
Zinc	5	mg/kg	68	79	14	-
% Moisture	1	%	11	11	15	8.5
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorononanoic acid (PFNA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorotridecanoic acid (PFTrDA) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
13C4-PFBA (surr.)	1	%	-	-	-	98
13C5-PFPeA (surr.)	1	%	-	-	-	109
13C5-PFHxA (surr.)	1	%	-	-	-	99
13C4-PFHpA (surr.)	1	%	-	-	-	90
13C8-PFOA (surr.)	1	%	-	-	-	97
13C5-PFNA (surr.)	1	%	-	-	-	88
13C6-PFDA (surr.)	1	%	-	-	-	89
13C2-PFUnDA (surr.)	1	%	-	-	-	91
13C2-PFDoDA (surr.)	1	%	-	-	-	97
13C2-PFTeDA (surr.)	1	%	-	-	-	94
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	10	ug/kg	-	-	-	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	10	ug/kg	-	-	-	< 10
13C8-FOSA (surr.)	1	%	-	-	-	98
D3-N-MeFOSA (surr.)	1	%	-	-	-	100
D5-N-EtFOSA (surr.)	1	%	-	-	-	105
D7-N-MeFOSE (surr.)	1	%	-	-	-	106
D9-N-EtFOSE (surr.)	1	%	-	-	-	99
D5-N-EtFOSAA (surr.)	1	%	-	-	-	91
D3-N-MeFOSAA (surr.)	1	%	-	-	-	108

Client Sample ID			TP17_0.0-0.1	QC09	TP17_0.5-0.6	BH07_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36023	S19-Au36024	S19-Au36025	S19-Au36026
Date Sampled			Aug 19, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
13C3-PFBS (surr.)	1	%	-	-	-	93
18O2-PFHxS (surr.)	1	%	-	-	-	91
13C8-PFOS (surr.)	1	%	-	-	-	99
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	10	ug/kg	-	-	-	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
13C2-4:2 FTSA (surr.)	1	%	-	-	-	81
13C2-6:2 FTSA (surr.)	1	%	-	-	-	69
13C2-8:2 FTSA (surr.)	1	%	-	-	-	71
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	5	ug/kg	-	-	-	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	-	-	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	-	-	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	-	-	< 10
Sum of PFASs (n=30)*	50	ug/kg	-	-	-	< 50

Client Sample ID			BH07_0.5-0.6	BH07_1.0-1.1	BH07_2.9-3.0	BH10_0.07-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36027	S19-Au36028	S19-Au36029	S19-Au36030
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	-	< 50	130
TRH C29-C36	50	mg/kg	< 50	-	< 50	210
TRH C10-C36 (Total)	50	mg/kg	< 50	-	< 50	340
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	67	-	72	94

Client Sample ID			BH07_0.5-0.6	BH07_1.0-1.1	BH07_2.9-3.0	BH10_0.07-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36027	S19-Au36028	S19-Au36029	S19-Au36030
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	-	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	-	< 100	270
TRH >C34-C40	100	mg/kg	< 100	-	< 100	170
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	< 100	440
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	< 0.5	0.9
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	0.6	1.2
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	1.2	1.5
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	0.6
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	0.8
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	0.7
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	0.6
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	0.8
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	1.7
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	0.7
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	1.8
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	1.6
Total PAH*	0.5	mg/kg	< 0.5	-	< 0.5	9.3
2-Fluorobiphenyl (surr.)	1	%	92	-	81	93
p-Terphenyl-d14 (surr.)	1	%	87	-	103	53
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	-	< 0.05
a-BHC	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-BHC	0.05	mg/kg	-	-	-	< 0.05
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05

Client Sample ID			BH07_0.5-0.6	BH07_1.0-1.1	BH07_2.9-3.0	BH10_0.07-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36027	S19-Au36028	S19-Au36029	S19-Au36030
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.05	mg/kg	-	-	-	< 0.05
Toxaphene	1	mg/kg	-	-	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Dibutylchloroendate (surr.)	1	%	-	-	-	69
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	52
<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	%	-	-	-	58

Client Sample ID			BH07_0.5-0.6	BH07_1.0-1.1	BH07_2.9-3.0	BH10_0.07-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36027	S19-Au36028	S19-Au36029	S19-Au36030
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Phenols (Halogenated)</b>						
2-Chlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	-	-	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	-	-	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	-	-	< 1
Pentachlorophenol	1	mg/kg	< 1	-	-	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	-	-	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	-	-	< 1
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	-	-	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	-	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	-	-	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	-	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-	< 0.4
4-Nitrophenol	5	mg/kg	< 5	-	-	< 5
Dinoseb	20	mg/kg	< 20	-	-	< 20
Phenol	0.5	mg/kg	< 0.5	-	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	-	< 20
Phenol-d6 (surr.)	1	%	91	-	-	80
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	5.4	-	9.4	4.0
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	< 0.4
Chromium	5	mg/kg	15	-	22	30
Copper	5	mg/kg	22	-	22	30
Lead	5	mg/kg	15	-	19	17
Mercury	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Nickel	5	mg/kg	8.4	-	14	16
Zinc	5	mg/kg	38	-	44	52
<b>% Moisture</b>						
	1	%	12	12	18	10
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
Perfluorononanoic acid (PFNA) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
Perfluorotridecanoic acid (PFTTrDA) <sup>N15</sup>	5	ug/kg	-	< 5	< 5	-
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
13C4-PFBA (surr.)	1	%	-	100	94	-
13C5-PFPeA (surr.)	1	%	-	82	92	-
13C5-PFHxA (surr.)	1	%	-	98	93	-
13C4-PFHpA (surr.)	1	%	-	98	96	-



Client Sample ID			BH07_0.5-0.6	BH07_1.0-1.1	BH07_2.9-3.0	BH10_0.07-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36027	S19-Au36028	S19-Au36029	S19-Au36030
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
13C8-PFOA (surr.)	1	%	-	98	99	-
13C5-PFNA (surr.)	1	%	-	89	91	-
13C6-PFDA (surr.)	1	%	-	95	87	-
13C2-PFUnDA (surr.)	1	%	-	97	88	-
13C2-PFDoDA (surr.)	1	%	-	98	94	-
13C2-PFTeDA (surr.)	1	%	-	97	98	-
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	10	ug/kg	-	< 10	< 10	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	10	ug/kg	-	< 10	< 10	-
13C8-FOSA (surr.)	1	%	-	94	93	-
D3-N-MeFOSA (surr.)	1	%	-	103	98	-
D5-N-EtFOSA (surr.)	1	%	-	95	104	-
D7-N-MeFOSE (surr.)	1	%	-	100	93	-
D9-N-EtFOSE (surr.)	1	%	-	100	99	-
D5-N-EtFOSAA (surr.)	1	%	-	96	96	-
D3-N-MeFOSAA (surr.)	1	%	-	106	104	-
<b>Perfluoroalkyl sulfonic acids (PFSA)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	5	ug/kg	-	< 5	< 5	-
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	5	ug/kg	-	< 5	< 5	-
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	5	ug/kg	-	< 5	< 5	-
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	5	ug/kg	-	< 5	< 5	-
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	5	ug/kg	-	< 5	< 5	-
13C3-PFBS (surr.)	1	%	-	96	92	-
18O2-PFHxS (surr.)	1	%	-	91	86	-
13C8-PFOS (surr.)	1	%	-	92	100	-
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	10	ug/kg	-	< 10	< 10	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	5	ug/kg	-	< 5	< 5	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	5	ug/kg	-	< 5	< 5	-
13C2-4:2 FTSA (surr.)	1	%	-	84	55	-
13C2-6:2 FTSA (surr.)	1	%	-	70	63	-
13C2-8:2 FTSA (surr.)	1	%	-	85	82	-

Client Sample ID			BH07_0.5-0.6	BH07_1.0-1.1	BH07_2.9-3.0	BH10_0.07-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36027	S19-Au36028	S19-Au36029	S19-Au36030
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	5	ug/kg	-	< 5	< 5	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	< 5	< 5	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	< 5	< 5	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	< 10	< 10	-
Sum of PFASs (n=30)*	50	ug/kg	-	< 50	< 50	-

Client Sample ID			BH10_0.2-0.45	BH10_0.9-1.0	TP25_0-0.2	TP25_0.3-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36031	S19-Au36032	S19-Au36033	S19-Au36034
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	-	< 20	-	< 20
TRH C10-C14	20	mg/kg	-	< 20	-	< 20
TRH C15-C28	50	mg/kg	-	< 50	-	< 50
TRH C29-C36	50	mg/kg	-	< 50	-	< 50
TRH C10-C36 (Total)	50	mg/kg	-	< 50	-	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	-	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	-	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	90	-	61
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	-	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	-	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	-	< 20	-	< 20
TRH >C10-C16	50	mg/kg	-	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	-	< 50	-	< 50
TRH >C16-C34	100	mg/kg	-	< 100	-	< 100
TRH >C34-C40	100	mg/kg	-	< 100	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	-	< 100
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	-	1.2
Acenaphthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	-	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5

Client Sample ID			BH10_0.2-0.45	BH10_0.9-1.0	TP25_0-0.2	TP25_0.3-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36031	S19-Au36032	S19-Au36033	S19-Au36034
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Total PAH*	0.5	mg/kg	-	< 0.5	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	81	-	99
p-Terphenyl-d14 (surr.)	1	%	-	80	-	102
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.05	mg/kg	-	-	< 0.05	-
Toxaphene	1	mg/kg	-	-	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchloroendate (surr.)	1	%	-	-	60	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	53	-
<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	-

Client Sample ID			BH10_0.2-0.45	BH10_0.9-1.0	TP25_0-0.2	TP25_0.3-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36031	S19-Au36032	S19-Au36033	S19-Au36034
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
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	%	-	-	87	-
<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-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	-	< 0.2
2-Nitrophenol	1.0	mg/kg	-	-	-	< 1
2,4-Dimethylphenol	0.5	mg/kg	-	-	-	< 0.5
2,4-Dinitrophenol	5	mg/kg	-	-	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	-	< 0.4
4-Nitrophenol	5	mg/kg	-	-	-	< 5
Dinoseb	20	mg/kg	-	-	-	< 20
Phenol	0.5	mg/kg	-	-	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	-	-	-	< 20
Phenol-d6 (surr.)	1	%	-	-	-	108

Client Sample ID			BH10_0.2-0.45	BH10_0.9-1.0	TP25_0-0.2	TP25_0.3-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36031	S19-Au36032	S19-Au36033	S19-Au36034
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	-	2.3	-	7.2
Cadmium	0.4	mg/kg	-	< 0.4	-	< 0.4
Chromium	5	mg/kg	-	< 5	-	13
Copper	5	mg/kg	-	23	-	22
Lead	5	mg/kg	-	9.2	-	12
Mercury	0.1	mg/kg	-	0.1	-	< 0.1
Nickel	5	mg/kg	-	5.3	-	< 5
Zinc	5	mg/kg	-	39	-	26
% Moisture	1	%	6.5	15	13	15
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluorononanoic acid (PFNA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluorotridecanoic acid (PFTrDA) <sup>N15</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
13C4-PFBA (surr.)	1	%	97	94	-	98
13C5-PFPeA (surr.)	1	%	106	93	-	86
13C5-PFHxA (surr.)	1	%	93	97	-	92
13C4-PFHpA (surr.)	1	%	97	91	-	88
13C8-PFOA (surr.)	1	%	95	98	-	87
13C5-PFNA (surr.)	1	%	86	82	-	89
13C6-PFDA (surr.)	1	%	90	90	-	91
13C2-PFUnDA (surr.)	1	%	87	96	-	89
13C2-PFDoDA (surr.)	1	%	95	92	-	96
13C2-PFTeDA (surr.)	1	%	100	92	-	104
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	10	ug/kg	< 10	< 10	-	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	10	ug/kg	< 10	< 10	-	< 10
13C8-FOSA (surr.)	1	%	96	96	-	101
D3-N-MeFOSA (surr.)	1	%	101	96	-	98
D5-N-EtFOSA (surr.)	1	%	103	114	-	110
D7-N-MeFOSE (surr.)	1	%	99	94	-	95
D9-N-EtFOSE (surr.)	1	%	100	100	-	100
D5-N-EtFOSAA (surr.)	1	%	98	96	-	102
D3-N-MeFOSAA (surr.)	1	%	109	105	-	101

Client Sample ID			BH10_0.2-0.45	BH10_0.9-1.0	TP25_0-0.2	TP25_0.3-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36031	S19-Au36032	S19-Au36033	S19-Au36034
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	5	ug/kg	< 5	< 5	-	< 5
13C3-PFBS (surr.)	1	%	101	97	-	99
18O2-PFHxS (surr.)	1	%	99	84	-	93
13C8-PFOS (surr.)	1	%	102	98	-	94
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	10	ug/kg	< 10	< 10	-	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	5	ug/kg	< 5	< 5	-	< 5
13C2-4:2 FTSA (surr.)	1	%	74	80	-	76
13C2-6:2 FTSA (surr.)	1	%	70	51	-	63
13C2-8:2 FTSA (surr.)	1	%	87	65	-	86
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	-	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	-	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	-	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	-	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	-	< 50

Client Sample ID			TP25_1.5-1.6	TP24_0-0.1	TP24_1.5-1.6	TP23_1.45-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36035	S19-Au36036	S19-Au36037	S19-Au36039
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	90	94	79	66

Client Sample ID			TP25_1.5-1.6	TP24_0-0.1	TP24_1.5-1.6	TP23_1.45-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36035	S19-Au36036	S19-Au36037	S19-Au36039
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	0.9	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	1.2	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.4	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	0.7	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	0.6	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	0.7	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	0.6	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	0.7	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	0.8	0.9	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	0.8	1.2	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	1.6	5.9	< 0.5
2-Fluorobiphenyl (surr.)	1	%	113	53	104	120
p-Terphenyl-d14 (surr.)	1	%	129	55	109	125
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-

Client Sample ID			TP25_1.5-1.6	TP24_0-0.1	TP24_1.5-1.6	TP23_1.45-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36035	S19-Au36036	S19-Au36037	S19-Au36039
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchloroendate (surr.)	1	%	-	60	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	52	-	-
<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	%	-	55	-	-



Client Sample ID			TP25_1.5-1.6	TP24_0-0.1	TP24_1.5-1.6	TP23_1.45-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36035	S19-Au36036	S19-Au36037	S19-Au36039
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
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-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	-
2-Nitrophenol	1.0	mg/kg	-	< 1	-	-
2,4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	-
2,4-Dinitrophenol	5	mg/kg	-	< 5	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	-
4-Nitrophenol	5	mg/kg	-	< 5	-	-
Dinoseb	20	mg/kg	-	< 20	-	-
Phenol	0.5	mg/kg	-	< 0.5	-	-
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	-
Phenol-d6 (surr.)	1	%	-	48	-	-
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	16	8.8	6.2	9.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	40	18	11	21
Copper	5	mg/kg	11	15	16	27
Lead	5	mg/kg	16	17	18	25
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	8.4	9.1	11	16
Zinc	5	mg/kg	16	29	27	62
<b>% Moisture</b>						
	1	%	17	7.4	11	11
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	95	95	94	98
13C5-PFPeA (surr.)	1	%	80	88	85	95
13C5-PFHxA (surr.)	1	%	95	102	97	92
13C4-PFHpA (surr.)	1	%	88	95	95	94

Client Sample ID			TP25_1.5-1.6	TP24_0-0.1	TP24_1.5-1.6	TP23_1.45-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36035	S19-Au36036	S19-Au36037	S19-Au36039
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
13C8-PFOA (surr.)	1	%	87	100	94	92
13C5-PFNA (surr.)	1	%	83	85	100	95
13C6-PFDA (surr.)	1	%	90	96	105	94
13C2-PFUnDA (surr.)	1	%	89	92	88	95
13C2-PFDoDA (surr.)	1	%	106	104	97	95
13C2-PFTeDA (surr.)	1	%	91	99	100	95
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	95	99	108	102
D3-N-MeFOSA (surr.)	1	%	100	99	107	97
D5-N-EtFOSA (surr.)	1	%	105	106	118	107
D7-N-MeFOSE (surr.)	1	%	97	99	105	95
D9-N-EtFOSE (surr.)	1	%	99	98	110	102
D5-N-EtFOSAA (surr.)	1	%	58	98	101	106
D3-N-MeFOSAA (surr.)	1	%	61	115	111	109
<b>Perfluoroalkyl sulfonic acids (PFSAs)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	103	98	97	89
18O2-PFHxS (surr.)	1	%	99	106	97	97
13C8-PFOS (surr.)	1	%	99	103	104	102
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	89	76	87	75
13C2-6:2 FTSA (surr.)	1	%	55	56	70	72
13C2-8:2 FTSA (surr.)	1	%	54	86	93	68

Client Sample ID			TP25_1.5-1.6	TP24_0-0.1	TP24_1.5-1.6	TP23_1.45-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36035	S19-Au36036	S19-Au36037	S19-Au36039
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			FD02_200819	TP21_0-0.1	FD03_200819	TP21_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36040	S19-Au36137	S19-Au36138	S19-Au36140
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	-
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	-
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	65	64	62	-
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	-
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-

Client Sample ID			FD02_200819	TP21_0-0.1	FD03_200819	TP21_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36040	S19-Au36137	S19-Au36138	S19-Au36140
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	108	102	80	-
p-Terphenyl-d14 (surr.)	1	%	120	95	108	-
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchloroendate (surr.)	1	%	-	108	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	102	-	-
<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	-	-

Client Sample ID			FD02_200819	TP21_0-0.1	FD03_200819	TP21_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36040	S19-Au36137	S19-Au36138	S19-Au36140
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
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	%	-	82	-	-
<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-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	-
2-Nitrophenol	1.0	mg/kg	-	< 1	-	-
2,4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	-
2,4-Dinitrophenol	5	mg/kg	-	< 5	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	-
4-Nitrophenol	5	mg/kg	-	< 5	-	-
Dinoseb	20	mg/kg	-	< 20	-	-
Phenol	0.5	mg/kg	-	< 0.5	-	-
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	-
Phenol-d6 (surr.)	1	%	-	90	-	-

Client Sample ID			FD02_200819	TP21_0-0.1	FD03_200819	TP21_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36040	S19-Au36137	S19-Au36138	S19-Au36140
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	10	6.9	4.2	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	15	15	22	-
Copper	5	mg/kg	22	8.6	10	-
Lead	5	mg/kg	19	14	10	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	14	5.5	17	-
Zinc	5	mg/kg	60	27	32	-
% Moisture	1	%	8.1	7.4	6.9	13
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	96	100	101	98
13C5-PFPeA (surr.)	1	%	94	85	116	94
13C5-PFHxA (surr.)	1	%	89	100	101	99
13C4-PFHpA (surr.)	1	%	86	96	94	96
13C8-PFOA (surr.)	1	%	97	102	95	104
13C5-PFNA (surr.)	1	%	83	89	90	85
13C6-PFDA (surr.)	1	%	94	89	95	93
13C2-PFUnDA (surr.)	1	%	89	89	91	94
13C2-PFDoDA (surr.)	1	%	98	103	98	97
13C2-PFTeDA (surr.)	1	%	96	96	101	101
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	96	100	96	100
D3-N-MeFOSA (surr.)	1	%	100	97	100	96
D5-N-EtFOSA (surr.)	1	%	104	105	108	105
D7-N-MeFOSE (surr.)	1	%	95	96	103	101
D9-N-EtFOSE (surr.)	1	%	104	101	102	101
D5-N-EtFOSAA (surr.)	1	%	103	104	107	101
D3-N-MeFOSAA (surr.)	1	%	110	112	117	112

Client Sample ID			FD02_200819	TP21_0-0.1	FD03_200819	TP21_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36040	S19-Au36137	S19-Au36138	S19-Au36140
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 20, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	99	103	94	99
18O2-PFHxS (surr.)	1	%	99	96	96	100
13C8-PFOS (surr.)	1	%	94	100	102	104
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	68	88	59	79
13C2-6:2 FTSA (surr.)	1	%	59	107	59	66
13C2-8:2 FTSA (surr.)	1	%	91	83	100	91
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			TP21_1.4-1.5	TP20_0-0.1	TP20_0.4-0.5	TP19_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36141	S19-Au36142	S19-Au36143	S19-Au36144
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	91	98	63	93

Client Sample ID			TP21_1.4-1.5	TP20_0-0.1	TP20_0.4-0.5	TP19_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36141	S19-Au36142	S19-Au36143	S19-Au36144
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	111	51	92	52
p-Terphenyl-d14 (surr.)	1	%	120	54	95	96
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	-	< 0.05



Client Sample ID			TP21_1.4-1.5	TP20_0-0.1	TP20_0.4-0.5	TP19_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36141	S19-Au36142	S19-Au36143	S19-Au36144
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	< 0.05
Methoxychlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Toxaphene	1	mg/kg	-	< 1	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	< 0.1
Dibutylchloroendate (surr.)	1	%	-	77	-	69
Tetrachloro-m-xylene (surr.)	1	%	-	56	-	58
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Bolstar	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Coumaphos	2	mg/kg	-	< 2	-	< 2
Demeton-S	0.2	mg/kg	-	< 0.2	-	< 0.2
Demeton-O	0.2	mg/kg	-	< 0.2	-	< 0.2
Diazinon	0.2	mg/kg	-	< 0.2	-	< 0.2
Dichlorvos	0.2	mg/kg	-	< 0.2	-	< 0.2
Dimethoate	0.2	mg/kg	-	< 0.2	-	< 0.2
Disulfoton	0.2	mg/kg	-	< 0.2	-	< 0.2
EPN	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethion	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethoprop	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethyl parathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fenitrothion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fensulfothion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fenthion	0.2	mg/kg	-	< 0.2	-	< 0.2
Malathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Merphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Methyl parathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Mevinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Monocrotophos	2	mg/kg	-	< 2	-	< 2
Naled	0.2	mg/kg	-	< 0.2	-	< 0.2
Omethoate	2	mg/kg	-	< 2	-	< 2
Phorate	0.2	mg/kg	-	< 0.2	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Pyrazophos	0.2	mg/kg	-	< 0.2	-	< 0.2
Ronnel	0.2	mg/kg	-	< 0.2	-	< 0.2
Terbufos	0.2	mg/kg	-	< 0.2	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Tokuthion	0.2	mg/kg	-	< 0.2	-	< 0.2
Trichloronate	0.2	mg/kg	-	< 0.2	-	< 0.2
Triphenylphosphate (surr.)	1	%	-	58	-	97

Client Sample ID			TP21_1.4-1.5	TP20_0-0.1	TP20_0.4-0.5	TP19_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36141	S19-Au36142	S19-Au36143	S19-Au36144
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Phenols (Halogenated)</b>						
2-Chlorophenol	0.5	mg/kg	-	< 0.5	-	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	-	< 1	-	< 1
2,4,6-Trichlorophenol	1	mg/kg	-	< 1	-	< 1
2,6-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	-	< 1	-	< 1
Pentachlorophenol	1	mg/kg	-	< 1	-	< 1
Tetrachlorophenols - Total	10	mg/kg	-	< 10	-	< 10
Total Halogenated Phenol*	1	mg/kg	-	< 1	-	< 1
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	-	< 20	-	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	-	< 5	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	< 0.2
2-Nitrophenol	1.0	mg/kg	-	< 1	-	< 1
2,4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	< 0.5
2,4-Dinitrophenol	5	mg/kg	-	< 5	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	< 0.4
4-Nitrophenol	5	mg/kg	-	< 5	-	< 5
Dinoseb	20	mg/kg	-	< 20	-	< 20
Phenol	0.5	mg/kg	-	< 0.5	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	< 20
Phenol-d6 (surr.)	1	%	-	81	-	83
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	7.2	4.2	7.1	6.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	19	14	23	20
Copper	5	mg/kg	32	7.3	22	10
Lead	5	mg/kg	27	21	15	21
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	11	5.2	9.8	< 5
Zinc	5	mg/kg	52	42	22	45
<b>% Moisture</b>						
	1	%	17	11	17	5.0
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorononanoic acid (PFNA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorotridecanoic acid (PFTrDA) <sup>N15</sup>	5	ug/kg	-	< 5	-	-
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
13C4-PFBA (surr.)	1	%	-	102	-	-
13C5-PFPeA (surr.)	1	%	-	102	-	-
13C5-PFHxA (surr.)	1	%	-	101	-	-
13C4-PFHpA (surr.)	1	%	-	91	-	-

Client Sample ID			TP21_1.4-1.5	TP20_0-0.1	TP20_0.4-0.5	TP19_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36141	S19-Au36142	S19-Au36143	S19-Au36144
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
13C8-PFOA (surr.)	1	%	-	98	-	-
13C5-PFNA (surr.)	1	%	-	86	-	-
13C6-PFDA (surr.)	1	%	-	93	-	-
13C2-PFUnDA (surr.)	1	%	-	98	-	-
13C2-PFDoDA (surr.)	1	%	-	101	-	-
13C2-PFTeDA (surr.)	1	%	-	93	-	-
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	10	ug/kg	-	< 10	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	10	ug/kg	-	< 10	-	-
13C8-FOSA (surr.)	1	%	-	99	-	-
D3-N-MeFOSA (surr.)	1	%	-	102	-	-
D5-N-EtFOSA (surr.)	1	%	-	108	-	-
D7-N-MeFOSE (surr.)	1	%	-	110	-	-
D9-N-EtFOSE (surr.)	1	%	-	102	-	-
D5-N-EtFOSAA (surr.)	1	%	-	106	-	-
D3-N-MeFOSAA (surr.)	1	%	-	110	-	-
<b>Perfluoroalkyl sulfonic acids (PFSA)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	5	ug/kg	-	< 5	-	-
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	5	ug/kg	-	< 5	-	-
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	5	ug/kg	-	< 5	-	-
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	5	ug/kg	-	< 5	-	-
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	5	ug/kg	-	< 5	-	-
13C3-PFBS (surr.)	1	%	-	102	-	-
18O2-PFHxS (surr.)	1	%	-	99	-	-
13C8-PFOS (surr.)	1	%	-	105	-	-
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	10	ug/kg	-	< 10	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	5	ug/kg	-	< 5	-	-
13C2-4:2 FTSA (surr.)	1	%	-	76	-	-
13C2-6:2 FTSA (surr.)	1	%	-	80	-	-
13C2-8:2 FTSA (surr.)	1	%	-	65	-	-

Client Sample ID			TP21_1.4-1.5	TP20_0-0.1	TP20_0.4-0.5	TP19_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36141	S19-Au36142	S19-Au36143	S19-Au36144
Date Sampled			Aug 20, 2019	Aug 20, 2019	Aug 20, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	5	ug/kg	-	< 5	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	< 5	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	< 5	-	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	< 10	-	-
Sum of PFASs (n=30)*	50	ug/kg	-	< 50	-	-

Client Sample ID			TP19_0.5-0.6	TP18_0-0.1	TP18_0.4-0.5	BH09_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36145	S19-Au36147	S19-Au36148	S19-Au36149
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	67	77	78	79
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP19_0.5-0.6	TP18_0-0.1	TP18_0.4-0.5	BH09_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36145	S19-Au36147	S19-Au36148	S19-Au36149
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	58	103	80	97
p-Terphenyl-d14 (surr.)	1	%	67	90	114	77
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	< 0.05
Methoxychlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Toxaphene	1	mg/kg	-	< 1	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	< 0.1
Dibutylchloroendate (surr.)	1	%	-	90	-	101
Tetrachloro-m-xylene (surr.)	1	%	-	124	-	116
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Bolstar	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Coumaphos	2	mg/kg	-	< 2	-	< 2
Demeton-S	0.2	mg/kg	-	< 0.2	-	< 0.2
Demeton-O	0.2	mg/kg	-	< 0.2	-	< 0.2
Diazinon	0.2	mg/kg	-	< 0.2	-	< 0.2
Dichlorvos	0.2	mg/kg	-	< 0.2	-	< 0.2
Dimethoate	0.2	mg/kg	-	< 0.2	-	< 0.2

Client Sample ID			TP19_0.5-0.6	TP18_0-0.1	TP18_0.4-0.5	BH09_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36145	S19-Au36147	S19-Au36148	S19-Au36149
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Disulfoton	0.2	mg/kg	-	< 0.2	-	< 0.2
EPN	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethion	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethoprop	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethyl parathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fenitrothion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fensulfothion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fenthion	0.2	mg/kg	-	< 0.2	-	< 0.2
Malathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Merphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Methyl parathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Mevinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Monocrotophos	2	mg/kg	-	< 2	-	< 2
Naled	0.2	mg/kg	-	< 0.2	-	< 0.2
Omethoate	2	mg/kg	-	< 2	-	< 2
Phorate	0.2	mg/kg	-	< 0.2	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Pyrazophos	0.2	mg/kg	-	< 0.2	-	< 0.2
Ronnel	0.2	mg/kg	-	< 0.2	-	< 0.2
Terbufos	0.2	mg/kg	-	< 0.2	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Tokuthion	0.2	mg/kg	-	< 0.2	-	< 0.2
Trichloronate	0.2	mg/kg	-	< 0.2	-	< 0.2
Triphenylphosphate (surr.)	1	%	-	91	-	84
<b>Phenols (Halogenated)</b>						
2-Chlorophenol	0.5	mg/kg	-	< 0.5	-	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	-	< 1	-	< 1
2,4,6-Trichlorophenol	1	mg/kg	-	< 1	-	< 1
2,6-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	-	< 1	-	< 1
Pentachlorophenol	1	mg/kg	-	< 1	-	< 1
Tetrachlorophenols - Total	10	mg/kg	-	< 10	-	< 10
Total Halogenated Phenol*	1	mg/kg	-	< 1	-	< 1
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	-	< 20	-	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	-	< 5	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	< 0.2
2-Nitrophenol	1.0	mg/kg	-	< 1	-	< 1
2,4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	< 0.5
2,4-Dinitrophenol	5	mg/kg	-	< 5	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	< 0.4
4-Nitrophenol	5	mg/kg	-	< 5	-	< 5
Dinoseb	20	mg/kg	-	< 20	-	< 20
Phenol	0.5	mg/kg	-	< 0.5	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	< 20
Phenol-d6 (surr.)	1	%	-	103	-	94

Client Sample ID			TP19_0.5-0.6	TP18_0-0.1	TP18_0.4-0.5	BH09_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36145	S19-Au36147	S19-Au36148	S19-Au36149
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	11	6.6	3.5	9.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	31	22	15	17
Copper	5	mg/kg	24	20	13	18
Lead	5	mg/kg	22	28	10	18
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	12	5.5	5.5	8.3
Zinc	5	mg/kg	28	26	14	30
% Moisture	1	%	16	8.3	12	6.8
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorononanoic acid (PFNA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorotridecanoic acid (PFTrDA) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
13C4-PFBA (surr.)	1	%	-	-	-	98
13C5-PFPeA (surr.)	1	%	-	-	-	94
13C5-PFHxA (surr.)	1	%	-	-	-	91
13C4-PFHpA (surr.)	1	%	-	-	-	92
13C8-PFOA (surr.)	1	%	-	-	-	96
13C5-PFNA (surr.)	1	%	-	-	-	97
13C6-PFDA (surr.)	1	%	-	-	-	97
13C2-PFUnDA (surr.)	1	%	-	-	-	98
13C2-PFDoDA (surr.)	1	%	-	-	-	96
13C2-PFTeDA (surr.)	1	%	-	-	-	98
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	10	ug/kg	-	-	-	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	10	ug/kg	-	-	-	< 10
13C8-FOSA (surr.)	1	%	-	-	-	103
D3-N-MeFOSA (surr.)	1	%	-	-	-	100
D5-N-EtFOSA (surr.)	1	%	-	-	-	108
D7-N-MeFOSE (surr.)	1	%	-	-	-	113
D9-N-EtFOSE (surr.)	1	%	-	-	-	105
D5-N-EtFOSAA (surr.)	1	%	-	-	-	109
D3-N-MeFOSAA (surr.)	1	%	-	-	-	113

Client Sample ID			TP19_0.5-0.6	TP18_0-0.1	TP18_0.4-0.5	BH09_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36145	S19-Au36147	S19-Au36148	S19-Au36149
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
13C3-PFBS (surr.)	1	%	-	-	-	101
18O2-PFHxS (surr.)	1	%	-	-	-	99
13C8-PFOS (surr.)	1	%	-	-	-	97
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	10	ug/kg	-	-	-	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
13C2-4:2 FTSA (surr.)	1	%	-	-	-	77
13C2-6:2 FTSA (surr.)	1	%	-	-	-	97
13C2-8:2 FTSA (surr.)	1	%	-	-	-	82
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	5	ug/kg	-	-	-	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	-	-	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	-	-	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	-	-	< 10
Sum of PFASs (n=30)*	50	ug/kg	-	-	-	< 50

Client Sample ID			BH09_1.5-1.7	TP22_0-0.1	TP22_0.4-0.5	TP22_1.5-1.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36150	S19-Au36151	S19-Au36152	S19-Au36262
Date Sampled			Aug 15, 2019	Aug 21, 2019	Aug 21, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	-	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	-	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	-	58
TRH C29-C36	50	mg/kg	< 50	< 50	-	63
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	-	121
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	77	78	-	91



Client Sample ID			BH09_1.5-1.7	TP22_0-0.1	TP22_0.4-0.5	TP22_1.5-1.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36150	S19-Au36151	S19-Au36152	S19-Au36262
Date Sampled			Aug 15, 2019	Aug 21, 2019	Aug 21, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	-	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	-	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	-	< 100
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	0.6
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	-	0.6
2-Fluorobiphenyl (surr.)	1	%	80	112	-	81
p-Terphenyl-d14 (surr.)	1	%	101	91	-	98
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-

Client Sample ID			BH09_1.5-1.7	TP22_0-0.1	TP22_0.4-0.5	TP22_1.5-1.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36150	S19-Au36151	S19-Au36152	S19-Au36262
Date Sampled			Aug 15, 2019	Aug 21, 2019	Aug 21, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchloroendate (surr.)	1	%	-	104	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	127	-	-
<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	%	-	95	-	-

Client Sample ID			BH09_1.5-1.7	TP22_0-0.1	TP22_0.4-0.5	TP22_1.5-1.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36150	S19-Au36151	S19-Au36152	S19-Au36262
Date Sampled			Aug 15, 2019	Aug 21, 2019	Aug 21, 2019	Aug 21, 2019
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-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	-
2-Nitrophenol	1.0	mg/kg	-	< 1	-	-
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dinitrophenol	5	mg/kg	-	< 5	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	-
4-Nitrophenol	5	mg/kg	-	< 5	-	-
Dinoseb	20	mg/kg	-	< 20	-	-
Phenol	0.5	mg/kg	-	< 0.5	-	-
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	-
Phenol-d6 (surr.)	1	%	-	94	-	-
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	2.4	6.7	-	7.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
Chromium	5	mg/kg	9.8	18	-	28
Copper	5	mg/kg	37	26	-	23
Lead	5	mg/kg	16	20	-	27
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Nickel	5	mg/kg	7.1	15	-	22
Zinc	5	mg/kg	51	53	-	110
<b>% Moisture</b>						
	1	%	13	13	10	9.9
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluorononanoic acid (PFNA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluorotridecanoic acid (PFTrDA) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
13C4-PFBA (surr.)	1	%	94	99	100	-
13C5-PFPeA (surr.)	1	%	99	102	98	-
13C5-PFHxA (surr.)	1	%	94	96	98	-
13C4-PFHpA (surr.)	1	%	90	97	96	-

Client Sample ID			BH09_1.5-1.7	TP22_0-0.1	TP22_0.4-0.5	TP22_1.5-1.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36150	S19-Au36151	S19-Au36152	S19-Au36262
Date Sampled			Aug 15, 2019	Aug 21, 2019	Aug 21, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
13C8-PFOA (surr.)	1	%	98	98	99	-
13C5-PFNA (surr.)	1	%	87	92	92	-
13C6-PFDA (surr.)	1	%	91	101	95	-
13C2-PFUnDA (surr.)	1	%	92	91	95	-
13C2-PFDoDA (surr.)	1	%	95	94	97	-
13C2-PFTeDA (surr.)	1	%	98	104	102	-
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	10	ug/kg	< 10	< 10	< 10	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	10	ug/kg	< 10	< 10	< 10	-
13C8-FOSA (surr.)	1	%	95	106	102	-
D3-N-MeFOSA (surr.)	1	%	99	99	97	-
D5-N-EtFOSA (surr.)	1	%	104	112	108	-
D7-N-MeFOSE (surr.)	1	%	101	104	98	-
D9-N-EtFOSE (surr.)	1	%	99	103	103	-
D5-N-EtFOSAA (surr.)	1	%	93	107	108	-
D3-N-MeFOSAA (surr.)	1	%	111	114	120	-
<b>Perfluoroalkyl sulfonic acids (PFSA)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	-
13C3-PFBS (surr.)	1	%	93	109	102	-
18O2-PFHxS (surr.)	1	%	92	98	92	-
13C8-PFOS (surr.)	1	%	95	93	107	-
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	10	ug/kg	< 10	< 10	< 10	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	< 5	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	5	ug/kg	< 5	< 5	< 5	-
13C2-4:2 FTSA (surr.)	1	%	50	91	72	-
13C2-6:2 FTSA (surr.)	1	%	72	77	77	-
13C2-8:2 FTSA (surr.)	1	%	72	90	100	-

Client Sample ID			BH09_1.5-1.7	TP22_0-0.1	TP22_0.4-0.5	TP22_1.5-1.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36150	S19-Au36151	S19-Au36152	S19-Au36262
Date Sampled			Aug 15, 2019	Aug 21, 2019	Aug 21, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	-
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	-

Client Sample ID			TP12_0-0.2	TP12_0.4-0.5	TP13_0-0.2	TP13_0.8-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36263	S19-Au36264	S19-Au36265	S19-Au36266
Date Sampled			Aug 22, 2019	Aug 22, 2019	Aug 21, 2019	Aug 22, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	88	85	79	93
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP12_0-0.2	TP12_0.4-0.5	TP13_0-0.2	TP13_0.8-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36263	S19-Au36264	S19-Au36265	S19-Au36266
Date Sampled			Aug 22, 2019	Aug 22, 2019	Aug 21, 2019	Aug 22, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	104	68	108	76
p-Terphenyl-d14 (surr.)	1	%	61	90	135	102
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Toxaphene	1	mg/kg	< 1	-	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	-
Dibutylchloroendate (surr.)	1	%	79	-	60	-
Tetrachloro-m-xylene (surr.)	1	%	123	-	117	-
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Coumaphos	2	mg/kg	< 2	-	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	-	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	-	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	-	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	-	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	-	< 0.2	-

Client Sample ID			TP12_0-0.2	TP12_0.4-0.5	TP13_0-0.2	TP13_0.8-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36263	S19-Au36264	S19-Au36265	S19-Au36266
Date Sampled			Aug 22, 2019	Aug 22, 2019	Aug 21, 2019	Aug 22, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Disulfoton	0.2	mg/kg	< 0.2	-	< 0.2	-
EPN	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	-	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Monocrotophos	2	mg/kg	< 2	-	< 2	-
Naled	0.2	mg/kg	< 0.2	-	< 0.2	-
Omethoate	2	mg/kg	< 2	-	< 2	-
Phorate	0.2	mg/kg	< 0.2	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	-	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	-	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	-	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	82	-	57	-
<b>Phenols (Halogenated)</b>						
2-Chlorophenol	0.5	mg/kg	< 0.5	-	< 0.5	-
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	-	< 0.5	-
2,4,5-Trichlorophenol	1	mg/kg	< 1	-	< 1	-
2,4,6-Trichlorophenol	1	mg/kg	< 1	-	< 1	-
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	-	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	-	< 1	-
Pentachlorophenol	1	mg/kg	< 1	-	< 1	-
Tetrachlorophenols - Total	10	mg/kg	< 10	-	< 10	-
Total Halogenated Phenol*	1	mg/kg	< 1	-	< 1	-
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	-	< 20	-
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	-	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	< 0.2	-
2-Nitrophenol	1.0	mg/kg	< 1	-	< 1	-
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	-	< 0.5	-
2,4-Dinitrophenol	5	mg/kg	< 5	-	< 5	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	< 0.4	-
4-Nitrophenol	5	mg/kg	< 5	-	< 5	-
Dinoseb	20	mg/kg	< 20	-	< 20	-
Phenol	0.5	mg/kg	< 0.5	-	< 0.5	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	< 20	-
Phenol-d6 (surr.)	1	%	111	-	106	-

Client Sample ID			TP12_0-0.2	TP12_0.4-0.5	TP13_0-0.2	TP13_0.8-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36263	S19-Au36264	S19-Au36265	S19-Au36266
Date Sampled			Aug 22, 2019	Aug 22, 2019	Aug 21, 2019	Aug 22, 2019
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	13	51	10	5.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	31	120	22	13
Copper	5	mg/kg	16	44	11	16
Lead	5	mg/kg	28	69	19	10
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	9.1	27	6.0	< 5
Zinc	5	mg/kg	34	74	23	14
% Moisture	1	%	11	8.0	18	14

Client Sample ID			TP14_0-0.2	TP14_1.4-1.5	TP16_0-0.2	BH08_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36267	S19-Au36268	S19-Au36269	S19-Au36271
Date Sampled			Aug 21, 2019	Aug 22, 2019	Aug 22, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	-	-
TRH C10-C14	20	mg/kg	< 20	< 20	-	-
TRH C15-C28	50	mg/kg	68	< 50	-	-
TRH C29-C36	50	mg/kg	89	< 50	-	-
TRH C10-C36 (Total)	50	mg/kg	157	< 50	-	-
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	85	80	-	-
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	-	-
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	130	< 100	-	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	130	< 100	-	-
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-



Client Sample ID			TP14_0-0.2	TP14_1.4-1.5	TP16_0-0.2	BH08_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36267	S19-Au36268	S19-Au36269	S19-Au36271
Date Sampled			Aug 21, 2019	Aug 22, 2019	Aug 22, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	103	79	-	-
p-Terphenyl-d14 (surr.)	1	%	76	110	-	-
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	-
a-BHC	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-BHC	0.05	mg/kg	< 0.05	-	-	-
d-BHC	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.05	mg/kg	< 0.05	-	-	-
Toxaphene	1	mg/kg	< 1	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchloroendate (surr.)	1	%	77	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	125	-	-	-
<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	-	-	-

Client Sample ID			TP14_0-0.2	TP14_1.4-1.5	TP16_0-0.2	BH08_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36267	S19-Au36268	S19-Au36269	S19-Au36271
Date Sampled			Aug 21, 2019	Aug 22, 2019	Aug 22, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
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	%	100	-	-	-
<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-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-	-
2-Nitrophenol	1.0	mg/kg	< 1	-	-	-
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-	-
2,4-Dinitrophenol	5	mg/kg	< 5	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-	-
4-Nitrophenol	5	mg/kg	< 5	-	-	-
Dinoseb	20	mg/kg	< 20	-	-	-

Client Sample ID			TP14_0-0.2	TP14_1.4-1.5	TP16_0-0.2	BH08_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36267	S19-Au36268	S19-Au36269	S19-Au36271
Date Sampled			Aug 21, 2019	Aug 22, 2019	Aug 22, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>Phenols (non-Halogenated)</b>						
Phenol	0.5	mg/kg	< 0.5	-	-	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	-	-
Phenol-d6 (surr.)	1	%	91	-	-	-
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	11	21	14	4.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	17	31	35	< 5
Copper	5	mg/kg	43	27	< 5	20
Lead	5	mg/kg	58	19	18	8.2
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	23	5.2	< 5	< 5
Zinc	5	mg/kg	170	23	< 5	17
% Moisture	1	%	16	18	11	4.8
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorononanoic acid (PFNA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorotridecanoic acid (PFTTrDA) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluorotetradecanoic acid (PFTTeDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
13C4-PFBA (surr.)	1	%	-	-	-	96
13C5-PFPeA (surr.)	1	%	-	-	-	90
13C5-PFHxA (surr.)	1	%	-	-	-	98
13C4-PFHpA (surr.)	1	%	-	-	-	99
13C8-PFOA (surr.)	1	%	-	-	-	94
13C5-PFNA (surr.)	1	%	-	-	-	87
13C6-PFDA (surr.)	1	%	-	-	-	95
13C2-PFUnDA (surr.)	1	%	-	-	-	96
13C2-PFDoDA (surr.)	1	%	-	-	-	102
13C2-PFTTeDA (surr.)	1	%	-	-	-	100
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	10	ug/kg	-	-	-	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	10	ug/kg	-	-	-	< 10
13C8-FOSA (surr.)	1	%	-	-	-	101
D3-N-MeFOSA (surr.)	1	%	-	-	-	101

Client Sample ID			TP14_0-0.2	TP14_1.4-1.5	TP16_0-0.2	BH08_0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36267	S19-Au36268	S19-Au36269	S19-Au36271
Date Sampled			Aug 21, 2019	Aug 22, 2019	Aug 22, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl sulfonamido substances</b>						
D5-N-EtFOSA (surr.)	1	%	-	-	-	107
D7-N-MeFOSE (surr.)	1	%	-	-	-	106
D9-N-EtFOSE (surr.)	1	%	-	-	-	106
D5-N-EtFOSAA (surr.)	1	%	-	-	-	107
D3-N-MeFOSAA (surr.)	1	%	-	-	-	109
<b>Perfluoroalkyl sulfonic acids (PFSA)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
13C3-PFBS (surr.)	1	%	-	-	-	95
18O2-PFHxS (surr.)	1	%	-	-	-	101
13C8-PFOS (surr.)	1	%	-	-	-	99
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	10	ug/kg	-	-	-	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
13C2-4:2 FTSA (surr.)	1	%	-	-	-	63
13C2-6:2 FTSA (surr.)	1	%	-	-	-	67
13C2-8:2 FTSA (surr.)	1	%	-	-	-	96
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	5	ug/kg	-	-	-	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	-	-	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	-	-	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	-	-	< 10
Sum of PFASs (n=30)*	50	ug/kg	-	-	-	< 50

Client Sample ID			BH08_0.8-1.0	TP15_0.0-0.2	TP15_0.5-0.6	TP15_0.2-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36272	S19-Au36303	S19-Au36304	S19-Au36305
Date Sampled			Aug 21, 2019	Aug 23, 2019	Aug 23, 2019	Aug 23, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50

Client Sample ID			BH08_0.8-1.0	TP15_0.0-0.2	TP15_0.5-0.6	TP15_0.2-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36272	S19-Au36303	S19-Au36304	S19-Au36305
Date Sampled			Aug 21, 2019	Aug 23, 2019	Aug 23, 2019	Aug 23, 2019
Test/Reference	LOR	Unit				
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	119	79	83	93
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	113	59	80	53
p-Terphenyl-d14 (surr.)	1	%	101	62	143	52
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	-	< 0.05

Client Sample ID			BH08_0.8-1.0	TP15_0.0-0.2	TP15_0.5-0.6	TP15_0.2-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36272	S19-Au36303	S19-Au36304	S19-Au36305
Date Sampled			Aug 21, 2019	Aug 23, 2019	Aug 23, 2019	Aug 23, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Endosulfan I	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	< 0.05
Methoxychlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Toxaphene	1	mg/kg	-	< 1	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	< 0.1
Dibutylchloroendate (surr.)	1	%	-	65	-	61
Tetrachloro-m-xylene (surr.)	1	%	-	56	-	52
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Bolstar	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Coumaphos	2	mg/kg	-	< 2	-	< 2
Demeton-S	0.2	mg/kg	-	< 0.2	-	< 0.2
Demeton-O	0.2	mg/kg	-	< 0.2	-	< 0.2
Diazinon	0.2	mg/kg	-	< 0.2	-	< 0.2
Dichlorvos	0.2	mg/kg	-	< 0.2	-	< 0.2
Dimethoate	0.2	mg/kg	-	< 0.2	-	< 0.2
Disulfoton	0.2	mg/kg	-	< 0.2	-	< 0.2
EPN	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethion	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethoprop	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethyl parathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fenitrothion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fensulfothion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fenthion	0.2	mg/kg	-	< 0.2	-	< 0.2
Malathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Merphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Methyl parathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Mevinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Monocrotophos	2	mg/kg	-	< 2	-	< 2
Naled	0.2	mg/kg	-	< 0.2	-	< 0.2
Omethoate	2	mg/kg	-	< 2	-	< 2
Phorate	0.2	mg/kg	-	< 0.2	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Pyrazophos	0.2	mg/kg	-	< 0.2	-	< 0.2
Ronnel	0.2	mg/kg	-	< 0.2	-	< 0.2

Client Sample ID			BH08_0.8-1.0	TP15_0.0-0.2	TP15_0.5-0.6	TP15_0.2-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36272	S19-Au36303	S19-Au36304	S19-Au36305
Date Sampled			Aug 21, 2019	Aug 23, 2019	Aug 23, 2019	Aug 23, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Terbufos	0.2	mg/kg	-	< 0.2	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Tokuthion	0.2	mg/kg	-	< 0.2	-	< 0.2
Trichloronate	0.2	mg/kg	-	< 0.2	-	< 0.2
Triphenylphosphate (surr.)	1	%	-	59	-	51
<b>Phenols (Halogenated)</b>						
2-Chlorophenol	0.5	mg/kg	-	< 0.5	-	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	-	< 1	-	< 1
2,4,6-Trichlorophenol	1	mg/kg	-	< 1	-	< 1
2,6-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	-	< 1	-	< 1
Pentachlorophenol	1	mg/kg	-	< 1	-	< 1
Tetrachlorophenols - Total	10	mg/kg	-	< 10	-	< 10
Total Halogenated Phenol*	1	mg/kg	-	< 1	-	< 1
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	-	< 20	-	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	-	< 5	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	< 0.2
2-Nitrophenol	1.0	mg/kg	-	< 1	-	< 1
2,4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	< 0.5
2,4-Dinitrophenol	5	mg/kg	-	< 5	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	< 0.4
4-Nitrophenol	5	mg/kg	-	< 5	-	< 5
Dinoseb	20	mg/kg	-	< 20	-	< 20
Phenol	0.5	mg/kg	-	< 0.5	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	< 20
Phenol-d6 (surr.)	1	%	-	59	-	46
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	10	33	7.4	7.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	110	7.8	31
Copper	5	mg/kg	21	15	9.5	24
Lead	5	mg/kg	16	40	7.6	23
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	8.3	15	< 5	25
Zinc	5	mg/kg	33	43	< 5	61
<b>% Moisture</b>						
	1	%	13	9.6	17	7.4
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
Perfluorononanoic acid (PFNA) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	5	ug/kg	< 5	-	-	-

Client Sample ID			BH08_0.8-1.0	TP15_0.0-0.2	TP15_0.5-0.6	TP15_0.2-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36272	S19-Au36303	S19-Au36304	S19-Au36305
Date Sampled			Aug 21, 2019	Aug 23, 2019	Aug 23, 2019	Aug 23, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorotridecanoic acid (PFTTrDA) <sup>N15</sup>	5	ug/kg	< 5	-	-	-
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
13C4-PFBA (surr.)	1	%	96	-	-	-
13C5-PFPeA (surr.)	1	%	79	-	-	-
13C5-PFHxA (surr.)	1	%	98	-	-	-
13C4-PFHpA (surr.)	1	%	95	-	-	-
13C8-PFOA (surr.)	1	%	93	-	-	-
13C5-PFNA (surr.)	1	%	92	-	-	-
13C6-PFDA (surr.)	1	%	88	-	-	-
13C2-PFUnDA (surr.)	1	%	84	-	-	-
13C2-PFDoDA (surr.)	1	%	97	-	-	-
13C2-PFTeDA (surr.)	1	%	97	-	-	-
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	10	ug/kg	< 10	-	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	10	ug/kg	< 10	-	-	-
13C8-FOSA (surr.)	1	%	101	-	-	-
D3-N-MeFOSA (surr.)	1	%	100	-	-	-
D5-N-EtFOSA (surr.)	1	%	110	-	-	-
D7-N-MeFOSE (surr.)	1	%	98	-	-	-
D9-N-EtFOSE (surr.)	1	%	100	-	-	-
D5-N-EtFOSAA (surr.)	1	%	105	-	-	-
D3-N-MeFOSAA (surr.)	1	%	118	-	-	-
<b>Perfluoroalkyl sulfonic acids (PFSA)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	5	ug/kg	< 5	-	-	-
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	5	ug/kg	< 5	-	-	-
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	5	ug/kg	< 5	-	-	-
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	5	ug/kg	< 5	-	-	-
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	5	ug/kg	< 5	-	-	-
13C3-PFBS (surr.)	1	%	98	-	-	-
18O2-PFHxS (surr.)	1	%	88	-	-	-
13C8-PFOS (surr.)	1	%	95	-	-	-



Client Sample ID			BH08_0.8-1.0	TP15_0.0-0.2	TP15_0.5-0.6	TP15_0.2-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36272	S19-Au36303	S19-Au36304	S19-Au36305
Date Sampled			Aug 21, 2019	Aug 23, 2019	Aug 23, 2019	Aug 23, 2019
Test/Reference	LOR	Unit				
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	10	ug/kg	< 10	-	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	5	ug/kg	< 5	-	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	5	ug/kg	< 5	-	-	-
13C2-4:2 FTSA (surr.)	1	%	70	-	-	-
13C2-6:2 FTSA (surr.)	1	%	57	-	-	-
13C2-8:2 FTSA (surr.)	1	%	66	-	-	-
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	-	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	-	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	-	-	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	-	-	-
Sum of PFASs (n=30)*	50	ug/kg	< 50	-	-	-

Client Sample ID			TP15_0.7-0.9	BH06_0.0-0.2	QC11	BH06_0.8-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36306	S19-Au36307	S19-Au36308	S19-Au36309
Date Sampled			Aug 23, 2019	Aug 23, 2019	Aug 23, 2019	Aug 23, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	89	89	120	127
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			TP15_0.7-0.9	BH06_0.0-0.2	QC11	BH06_0.8-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36306	S19-Au36307	S19-Au36308	S19-Au36309
Date Sampled			Aug 23, 2019	Aug 23, 2019	Aug 23, 2019	Aug 23, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	109	51	99	91
p-Terphenyl-d14 (surr.)	1	%	115	51	107	109
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4,4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchloroendate (surr.)	1	%	-	64	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	51	-	-

Client Sample ID			TP15_0.7-0.9	BH06_0.0-0.2	QC11	BH06_0.8-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36306	S19-Au36307	S19-Au36308	S19-Au36309
Date Sampled			Aug 23, 2019	Aug 23, 2019	Aug 23, 2019	Aug 23, 2019
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	%	-	54	-	-
<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	-	-

Client Sample ID			TP15_0.7-0.9	BH06_0.0-0.2	QC11	BH06_0.8-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36306	S19-Au36307	S19-Au36308	S19-Au36309
Date Sampled			Aug 23, 2019	Aug 23, 2019	Aug 23, 2019	Aug 23, 2019
Test/Reference	LOR	Unit				
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	< 20	-	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	< 5	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	-
2-Nitrophenol	1.0	mg/kg	-	< 1	-	-
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dinitrophenol	5	mg/kg	-	< 5	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	-
4-Nitrophenol	5	mg/kg	-	< 5	-	-
Dinoseb	20	mg/kg	-	< 20	-	-
Phenol	0.5	mg/kg	-	< 0.5	-	-
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	-
Phenol-d6 (surr.)	1	%	-	35	-	-
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	17	5.1	11	7.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	26	22	43	22
Copper	5	mg/kg	30	16	16	26
Lead	5	mg/kg	20	22	29	22
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	11	17	17	13
Zinc	5	mg/kg	45	49	55	40
<b>% Moisture</b>						
	1	%	13	15	16	16
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
Perfluorononanoic acid (PFNA) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
Perfluorotridecanoic acid (PFTeDA) <sup>N15</sup>	5	ug/kg	-	< 5	-	< 5
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
13C4-PFBA (surr.)	1	%	-	97	-	105
13C5-PFPeA (surr.)	1	%	-	105	-	110
13C5-PFHxA (surr.)	1	%	-	104	-	99
13C4-PFHpA (surr.)	1	%	-	93	-	102
13C8-PFOA (surr.)	1	%	-	107	-	106
13C5-PFNA (surr.)	1	%	-	99	-	98
13C6-PFDA (surr.)	1	%	-	96	-	97
13C2-PFUnDA (surr.)	1	%	-	94	-	96
13C2-PFDoDA (surr.)	1	%	-	97	-	102
13C2-PFTeDA (surr.)	1	%	-	100	-	107

Client Sample ID			TP15_0.7-0.9	BH06_0.0-0.2	QC11	BH06_0.8-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36306	S19-Au36307	S19-Au36308	S19-Au36309
Date Sampled			Aug 23, 2019	Aug 23, 2019	Aug 23, 2019	Aug 23, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	10	ug/kg	-	< 10	-	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	10	ug/kg	-	< 10	-	< 10
13C8-FOSA (surr.)	1	%	-	103	-	98
D3-N-MeFOSA (surr.)	1	%	-	99	-	99
D5-N-EtFOSA (surr.)	1	%	-	105	-	110
D7-N-MeFOSE (surr.)	1	%	-	97	-	103
D9-N-EtFOSE (surr.)	1	%	-	104	-	103
D5-N-EtFOSAA (surr.)	1	%	-	103	-	113
D3-N-MeFOSAA (surr.)	1	%	-	109	-	128
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	5	ug/kg	-	< 5	-	< 5
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	5	ug/kg	-	< 5	-	< 5
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	5	ug/kg	-	< 5	-	< 5
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	5	ug/kg	-	< 5	-	< 5
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	5	ug/kg	-	< 5	-	< 5
13C3-PFBS (surr.)	1	%	-	101	-	95
18O2-PFHxS (surr.)	1	%	-	91	-	97
13C8-PFOS (surr.)	1	%	-	98	-	108
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	10	ug/kg	-	< 10	-	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	5	ug/kg	-	< 5	-	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	5	ug/kg	-	< 5	-	< 5
13C2-4:2 FTSA (surr.)	1	%	-	83	-	83
13C2-6:2 FTSA (surr.)	1	%	-	78	-	84
13C2-8:2 FTSA (surr.)	1	%	-	70	-	70
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	5	ug/kg	-	< 5	-	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	< 5	-	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	< 5	-	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	< 10	-	< 10
Sum of PFASs (n=30)*	50	ug/kg	-	< 50	-	< 50

Client Sample ID			TP14_0.9-1.2	TP23_0.8-0.9	TP16_1.4-1.5	BH08_0.3-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36312	S19-Au36458	S19-Au36473	S19-Au36474
Date Sampled			Aug 23, 2019	Aug 20, 2019	Aug 22, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	-	-
TRH C10-C14	20	mg/kg	< 20	< 20	-	-
TRH C15-C28	50	mg/kg	< 50	< 50	-	-
TRH C29-C36	50	mg/kg	< 50	< 50	-	-
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	-	-
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	126	65	-	-
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	-	-
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	< 100	< 100	-	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	-	-
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	108	76	-	-
p-Terphenyl-d14 (surr.)	1	%	123	64	-	-

Client Sample ID			TP14_0.9-1.2	TP23_0.8-0.9	TP16_1.4-1.5	BH08_0.3-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36312	S19-Au36458	S19-Au36473	S19-Au36474
Date Sampled			Aug 23, 2019	Aug 20, 2019	Aug 22, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchloroendate (surr.)	1	%	-	76	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	71	-	-
<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	-	-

Client Sample ID			TP14_0.9-1.2	TP23_0.8-0.9	TP16_1.4-1.5	BH08_0.3-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36312	S19-Au36458	S19-Au36473	S19-Au36474
Date Sampled			Aug 23, 2019	Aug 20, 2019	Aug 22, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
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	%	-	76	-	-
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	6.2	7.3	9.1	7.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	26	15	26	10.0
Copper	5	mg/kg	23	24	8.4	11
Lead	5	mg/kg	26	22	12	11
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	6.2	14	< 5	< 5
Zinc	5	mg/kg	27	64	< 5	11
<b>% Moisture</b>						
	1	%	17	14	19	15
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorononanoic acid (PFNA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorotridecanoic acid (PFTTrDA) <sup>N15</sup>	5	ug/kg	-	< 5	-	-
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
13C4-PFBA (surr.)	1	%	-	99	-	-
13C5-PFPeA (surr.)	1	%	-	95	-	-
13C5-PFHxA (surr.)	1	%	-	97	-	-
13C4-PFHpA (surr.)	1	%	-	93	-	-
13C8-PFOA (surr.)	1	%	-	92	-	-
13C5-PFNA (surr.)	1	%	-	96	-	-
13C6-PFDA (surr.)	1	%	-	97	-	-
13C2-PFUnDA (surr.)	1	%	-	92	-	-
13C2-PFDoDA (surr.)	1	%	-	101	-	-
13C2-PFTeDA (surr.)	1	%	-	105	-	-



Client Sample ID			TP14_0.9-1.2	TP23_0.8-0.9	TP16_1.4-1.5	BH08_0.3-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36312	S19-Au36458	S19-Au36473	S19-Au36474
Date Sampled			Aug 23, 2019	Aug 20, 2019	Aug 22, 2019	Aug 21, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	10	ug/kg	-	< 10	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	10	ug/kg	-	< 10	-	-
13C8-FOSA (surr.)	1	%	-	99	-	-
D3-N-MeFOSA (surr.)	1	%	-	97	-	-
D5-N-EtFOSA (surr.)	1	%	-	114	-	-
D7-N-MeFOSE (surr.)	1	%	-	101	-	-
D9-N-EtFOSE (surr.)	1	%	-	105	-	-
D5-N-EtFOSAA (surr.)	1	%	-	113	-	-
D3-N-MeFOSAA (surr.)	1	%	-	127	-	-
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	5	ug/kg	-	< 5	-	-
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	5	ug/kg	-	< 5	-	-
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	5	ug/kg	-	< 5	-	-
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	5	ug/kg	-	< 5	-	-
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	5	ug/kg	-	< 5	-	-
13C3-PFBS (surr.)	1	%	-	99	-	-
18O2-PFHxS (surr.)	1	%	-	95	-	-
13C8-PFOS (surr.)	1	%	-	107	-	-
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	10	ug/kg	-	< 10	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	5	ug/kg	-	< 5	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	5	ug/kg	-	< 5	-	-
13C2-4:2 FTSA (surr.)	1	%	-	79	-	-
13C2-6:2 FTSA (surr.)	1	%	-	73	-	-
13C2-8:2 FTSA (surr.)	1	%	-	100	-	-
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	5	ug/kg	-	< 5	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	< 5	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	< 5	-	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	< 10	-	-
Sum of PFASs (n=30)*	50	ug/kg	-	< 50	-	-

Client Sample ID			BH07_3.9-4.0	FD03_210819	R20TRIP SPIKE	TRIP BLANK
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36730	S19-Au36731	S19-Au36734	S19-Au36735
Date Sampled			Aug 15, 2019	Aug 21, 2019	Not Provided	Not Provided
Test/Reference	LOR	Unit				
<b>BTEX</b>						
Benzene	0.1	mg/kg	-	-	92	< 0.1
Toluene	0.1	mg/kg	-	-	92	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	130	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	91	< 0.2
o-Xylene	0.1	mg/kg	-	-	93	< 0.1
Xylenes - Total	0.3	mg/kg	-	-	92	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	107	125
% Moisture	1	%	19	12	-	-
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
Perfluorononanoic acid (PFNA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
Perfluorotridecanoic acid (PFTrDA) <sup>N15</sup>	5	ug/kg	< 5	< 5	-	-
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
13C4-PFBA (surr.)	1	%	94	96	-	-
13C5-PFPeA (surr.)	1	%	88	102	-	-
13C5-PFHxA (surr.)	1	%	91	95	-	-
13C4-PFHpA (surr.)	1	%	92	95	-	-
13C8-PFOA (surr.)	1	%	95	99	-	-
13C5-PFNA (surr.)	1	%	90	91	-	-
13C6-PFDA (surr.)	1	%	94	89	-	-
13C2-PFUnDA (surr.)	1	%	95	98	-	-
13C2-PFDoDA (surr.)	1	%	100	96	-	-
13C2-PFTeDA (surr.)	1	%	96	98	-	-
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	10	ug/kg	< 10	< 10	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	10	ug/kg	< 10	< 10	-	-
13C8-FOSA (surr.)	1	%	104	98	-	-
D3-N-MeFOSA (surr.)	1	%	101	99	-	-
D5-N-EtFOSA (surr.)	1	%	112	110	-	-
D7-N-MeFOSE (surr.)	1	%	99	99	-	-
D9-N-EtFOSE (surr.)	1	%	105	102	-	-
D5-N-EtFOSAA (surr.)	1	%	102	110	-	-
D3-N-MeFOSAA (surr.)	1	%	133	122	-	-

Client Sample ID			BH07_3.9-4.0	FD03_210819	R20 TRIP SPIKE	TRIP BLANK
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au36730	S19-Au36731	S19-Au36734	S19-Au36735
Date Sampled			Aug 15, 2019	Aug 21, 2019	Not Provided	Not Provided
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	5	ug/kg	< 5	< 5	-	-
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	5	ug/kg	< 5	< 5	-	-
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	5	ug/kg	< 5	< 5	-	-
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	5	ug/kg	< 5	< 5	-	-
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	5	ug/kg	< 5	< 5	-	-
13C3-PFBS (surr.)	1	%	102	102	-	-
18O2-PFHxS (surr.)	1	%	92	97	-	-
13C8-PFOS (surr.)	1	%	106	93	-	-
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	10	ug/kg	< 10	< 10	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	5	ug/kg	< 5	< 5	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	5	ug/kg	< 5	< 5	-	-
13C2-4:2 FTSA (surr.)	1	%	78	64	-	-
13C2-6:2 FTSA (surr.)	1	%	36	44	-	-
13C2-8:2 FTSA (surr.)	1	%	78	63	-	-
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	-	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	-	-
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	-	-

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

Description	Testing Site	Extracted	Holding Time
<b>Eurofins   mgt Suite B7A</b>			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Aug 29, 2019	14 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Sep 02, 2019	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Sep 02, 2019	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Aug 29, 2019	
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Aug 29, 2019	14 Days
Phenols (Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Aug 29, 2019	14 Days
Phenols (non-Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Aug 29, 2019	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Aug 29, 2019	180 Days
<b>Eurofins   mgt Suite B14</b>			
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)	Melbourne	Aug 29, 2019	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8081)	Melbourne	Aug 29, 2019	14 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Brisbane	Aug 26, 2019	14 Days
<b>Per- and Polyfluoroalkyl Substances (PFASs)</b>			
Perfluoroalkyl carboxylic acids (PFCAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 27, 2019	180 Days
Perfluoroalkyl sulfonamido substances - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 27, 2019	180 Days
Perfluoroalkyl sulfonic acids (PFASs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 27, 2019	180 Days
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 27, 2019	180 Days

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<b>Project Name:</b> TOWNSON AND BURDEKIN RD	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
<b>Project ID:</b> 12511195	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X		X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
<b>External Laboratory</b>																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	TP17_0.0-0.1	Aug 19, 2019		Soil	S19-Au36023	X								X	X							X
2	QC09	Aug 15, 2019		Soil	S19-Au36024										X				X			
3	TP17_0.5-0.6	Aug 15, 2019		Soil	S19-Au36025										X				X			
4	BH07_0.0-0.1	Aug 15, 2019		Soil	S19-Au36026	X								X	X							X
5	BH07_0.5-0.6	Aug 15, 2019		Soil	S19-Au36027	X									X							X
6	BH07_1.0-1.1	Aug 15, 2019		Soil	S19-Au36028										X							X
7	BH07_2.9-3.0	Aug 15, 2019		Soil	S19-Au36029										X				X			X
8	BH10_0.07-0.2	Aug 20, 2019		Soil	S19-Au36030	X								X	X							X
9	BH10_0.2-0.45	Aug 20, 2019		Soil	S19-Au36031	X									X							X

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<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
10	BH10_0.9-1.0	Aug 20, 2019		Soil	S19-Au36032											X			X			X
11	TP25_0-0.2	Aug 20, 2019		Soil	S19-Au36033	X				X					X	X						
12	TP25_0.3-0.4	Aug 20, 2019		Soil	S19-Au36034										X						X	X
13	TP25_1.5-1.6	Aug 20, 2019		Soil	S19-Au36035										X				X			X
14	TP24_0-0.1	Aug 20, 2019		Soil	S19-Au36036	X									X	X					X	X
15	TP24_1.5-1.6	Aug 20, 2019		Soil	S19-Au36037										X				X			X
16	TP23_0-0.8	Aug 20, 2019		Soil	S19-Au36038		X															
17	TP23_1.45-1.5	Aug 20, 2019		Soil	S19-Au36039	X										X			X			X
18	FD02_200819	Aug 20, 2019		Soil	S19-Au36040											X			X			X
19	RB_200819	Aug 20, 2019		Water	S19-Au36136							X										
20	TP21_0-0.1	Aug 20, 2019		Soil	S19-Au36137	X									X	X					X	X
21	FD03_200819	Aug 20, 2019		Soil	S19-Au36138											X			X			X

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<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
22	TP21_0.4-0.5	Aug 20, 2019		Soil	S19-Au36139	X																
23	TP21_0.9-1.0	Aug 20, 2019		Soil	S19-Au36140											X						X
24	TP21_1.4-1.5	Aug 20, 2019		Soil	S19-Au36141	X										X			X			
25	TP20_0-0.1	Aug 20, 2019		Soil	S19-Au36142	X									X	X					X	X
26	TP20_0.4-0.5	Aug 20, 2019		Soil	S19-Au36143											X			X			
27	TP19_0-0.2	Aug 15, 2019		Soil	S19-Au36144	X									X	X					X	
28	TP19_0.5-0.6	Aug 15, 2019		Soil	S19-Au36145											X			X			
29	RB_210819	Aug 21, 2019		Water	S19-Au36146							X										
30	TP18_0-0.1	Aug 15, 2019		Soil	S19-Au36147	X									X	X					X	
31	TP18_0.4-0.5	Aug 15, 2019		Soil	S19-Au36148											X			X			
32	BH09_0-0.2	Aug 15, 2019		Soil	S19-Au36149	X									X	X					X	X
33	BH09_1.5-1.7	Aug 15, 2019		Soil	S19-Au36150											X			X			X

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<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
34	TP22_0-0.1	Aug 21, 2019		Soil	S19-Au36151	X								X	X						X	X
35	TP22_0.4-0.5	Aug 21, 2019		Soil	S19-Au36152										X							X
36	TP22_1.5-1.6	Aug 21, 2019		Soil	S19-Au36262										X				X			
37	TP12_0-0.2	Aug 22, 2019		Soil	S19-Au36263	X								X	X						X	
38	TP12_0.4-0.5	Aug 22, 2019		Soil	S19-Au36264										X				X			
39	TP13_0-0.2	Aug 21, 2019		Soil	S19-Au36265	X								X	X						X	
40	TP13_0.8-0.9	Aug 22, 2019		Soil	S19-Au36266										X				X			
41	TP14_0-0.2	Aug 21, 2019		Soil	S19-Au36267	X								X	X						X	
42	TP14_1.4-1.5	Aug 22, 2019		Soil	S19-Au36268										X				X			
43	TP16_0-0.2	Aug 22, 2019		Soil	S19-Au36269	X							X					X				
44	TP16_0.9-1.0	Aug 22, 2019		Soil	S19-Au36270		X															
45	BH08_0-0.2	Aug 21, 2019		Soil	S19-Au36271	X							X					X				X



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<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
46	BH08_0.8-1.0	Aug 21, 2019		Soil	S19-Au36272													X		X		X
47	TP15_0.0-0.2	Aug 23, 2019		Soil	S19-Au36303	X								X	X						X	
48	TP15_0.5-0.6	Aug 23, 2019		Soil	S19-Au36304										X				X			
49	TP15_0.2-0.4	Aug 23, 2019		Soil	S19-Au36305	X								X	X						X	
50	TP15_0.7-0.9	Aug 23, 2019		Soil	S19-Au36306										X				X			
51	BH06_0.0-0.2	Aug 23, 2019		Soil	S19-Au36307	X								X	X						X	X
52	QC11	Aug 23, 2019		Soil	S19-Au36308										X				X			
53	BH06_0.8-1.0	Aug 23, 2019		Soil	S19-Au36309										X				X			X
54	RB0/230819	Aug 23, 2019		Water	S19-Au36310							X										X
55	TB	Aug 23, 2019		Water	S19-Au36311																	X
56	TP14_0.9-1.2	Aug 23, 2019		Soil	S19-Au36312	X									X				X			
57	BH07_0.0-0.1	Aug 15, 2019		US Leachate	S19-Au36349						X											X

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Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail				Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X			X			X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>				X	X			X		X	X		X	X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>							X		X				X	X	X					X
<b>Perth Laboratory - NATA Site # 23736</b>																				
58	BH07_1.0-1.1	Aug 15, 2019	US Leachate	S19-Au36350					X											X
59	BH07_2.9-3.0	Aug 15, 2019	US Leachate	S19-Au36351					X											X
60	BH10_0.2-0.45	Aug 20, 2019	US Leachate	S19-Au36352					X											X
61	BH10_0.9-1.0	Aug 20, 2019	US Leachate	S19-Au36353					X											X
62	TP25_0.3-0.4	Aug 20, 2019	US Leachate	S19-Au36354					X											X
63	TP25_1.5-1.6	Aug 20, 2019	US Leachate	S19-Au36355					X											X
64	TP24_0-0.1	Aug 20, 2019	US Leachate	S19-Au36356					X											X
65	TP24_1.5-1.6	Aug 20, 2019	US Leachate	S19-Au36357					X											X
66	TP23_0-0.8	Aug 20, 2019	US Leachate	S19-Au36358		X														
67	TP23_1.45-1.5	Aug 20, 2019	US Leachate	S19-Au36359					X											X
68	TP21_0-0.1	Aug 20, 2019	US Leachate	S19-Au36360					X											X
69	TP21_0.9-1.0	Aug 20, 2019	US Leachate	S19-Au36361					X											X

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**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail				Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X			X			X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>				X	X			X		X		X	X	X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>							X	X					X	X	X					X
<b>Perth Laboratory - NATA Site # 23736</b>																				
70	TP20_0-0.1	Aug 20, 2019	US Leachate	S19-Au36362				X												X
71	BH09_0-0.2	Aug 20, 2019	US Leachate	S19-Au36363				X												X
72	BH09_1.5-1.7	Aug 20, 2019	US Leachate	S19-Au36364				X												X
73	TP22_0-0.1	Aug 21, 2019	US Leachate	S19-Au36365				X												X
74	TP22_0.4-0.5	Aug 21, 2019	US Leachate	S19-Au36366				X												X
75	BH08_0-0.2	Aug 21, 2019	US Leachate	S19-Au36367				X												X
76	BH08_0.8-1.0	Aug 21, 2019	US Leachate	S19-Au36368				X												X
77	BH06_0.0-0.2	Aug 21, 2019	US Leachate	S19-Au36369				X												X
78	BH06_0.8-1.0	Aug 21, 2019	US Leachate	S19-Au36370				X												X
79	TP17_1.0-1.1	Aug 15, 2019	Soil	S19-Au36449			X													
80	TP17_1.4-1.5	Aug 15, 2019	Soil	S19-Au36450			X													
81	BH07_1.9-2.0	Aug 15, 2019	Soil	S19-Au36451			X													

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**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoralkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X		X	X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
82	RB06	Aug 19, 2019		Water	S19-Au36452			X														
83	BH10_0.5-0.7	Aug 20, 2019		Soil	S19-Au36453			X														
84	TP25_0.9-1.0	Aug 20, 2019		Soil	S19-Au36454			X														
85	TP24_0.4-0.5	Aug 20, 2019		Soil	S19-Au36455			X														
86	TP24_0.6-0.7	Aug 20, 2019		Soil	S19-Au36456			X														
87	TP24_1.7-1.8	Aug 20, 2019		Soil	S19-Au36457			X														
88	TP23_0.8-0.9	Aug 20, 2019		Soil	S19-Au36458	X								X	X				X			X
89	FD01_200819	Aug 20, 2019		Soil	S19-Au36459			X														
90	FD04_00819	Aug 20, 2019		Soil	S19-Au36460			X														
91	TP20_1.2-1.3	Aug 20, 2019		Soil	S19-Au36461			X														
92	TP18_0.9-1.0	Aug 21, 2019		Soil	S19-Au36462			X														
93	BH09_0.3-0.5	Aug 21, 2019		Soil	S19-Au36463			X														

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 23, 2019 6:07 PM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 673140	<b>Due:</b> Aug 30, 2019
<b>Project Name:</b> TOWNSON AND BURDEKIN RD	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
<b>Project ID:</b> 12511195	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
94	BH09_0.8-1.0	Aug 21, 2019		Soil	S19-Au36464			X														
95	BH09_2.1-2.3	Aug 21, 2019		Soil	S19-Au36465			X														
96	TP22_0.9-1.0	Aug 21, 2019		Soil	S19-Au36466			X														
97	TP12_0.9-1.0	Aug 22, 2019		Soil	S19-Au36467			X														
98	TP12_1.2-1.3	Aug 22, 2019		Soil	S19-Au36468			X														
99	TP12_1.5-1.6	Aug 22, 2019		Soil	S19-Au36469			X														
100	TP13_1.4-1.6	Aug 21, 2019		Soil	S19-Au36470			X														
101	TP14_0.4-0.5	Aug 21, 2019		Soil	S19-Au36471			X														
102	TP16_0.4-0.5	Aug 22, 2019		Soil	S19-Au36472					X												
103	TP16_1.4-1.5	Aug 22, 2019		Soil	S19-Au36473	X						X						X				
104	BH08_0.3-0.5	Aug 21, 2019		Soil	S19-Au36474	X						X						X				
105	BH08_1.8-2.0	Aug 21, 2019		Soil	S19-Au36475				X													

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<b>Project Name:</b> TOWNSON AND BURDEKIN RD	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
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Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
106	BH08_2.8-3.0	Aug 21, 2019		Soil	S19-Au36476				X													
107	BH08_3.8-4.0	Aug 22, 2019		Soil	S19-Au36477				X													
108	BH06_0.3-0.5	Aug 23, 2019		Soil	S19-Au36478			X														
109	BH06_1.8-2.0	Aug 23, 2019		Soil	S19-Au36479			X														
110	BH06_2.8-3.0	Aug 23, 2019		Soil	S19-Au36480			X														
111	BH06_3.8-4.0	Aug 23, 2019		Soil	S19-Au36481			X														
112	BH06_4.8-5.0	Aug 23, 2019		Soil	S19-Au36482			X														
113	BH07_3.9-4.0	Aug 15, 2019		Soil	S19-Au36730												X					X
114	FD03_210819	Aug 21, 2019		Soil	S19-Au36731												X					X
115	FD01_10819	Aug 21, 2019		Soil	S19-Au36732			X														
116	FD02_210819	Aug 21, 2019		Soil	S19-Au36733			X														
117	TRIP SPIKE	Not Provided		Soil	S19-Au36734									X								

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	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
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<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail				Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X				X		X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>				X	X			X		X	X		X	X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>							X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																				
118	TRIP BLANK	Not Provided		Soil	S19-Au36735							X								
<b>Test Counts</b>				28	3	33	33	33	21	7	7	2	18	54	54	54	25	25	17	49

**Internal Quality Control Review and Glossary**
**General**

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</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	
<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	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
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>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>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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	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	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	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>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>							
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTriDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
<b>Method Blank</b>							
<b>Perfluoroalkyl sulfonamido substances</b>							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
<b>Method Blank</b>							
<b>Perfluoroalkyl sulfonic acids (PFSAs)</b>							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5		5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5		5	Pass	
<b>Method Blank</b>						
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5		5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10		10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5		5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5		5	Pass	
<b>LCS - % Recovery</b>						
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	%	94		70-130	Pass	
TRH C10-C14	%	80		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>BTEX</b>						
Benzene	%	92		70-130	Pass	
Toluene	%	95		70-130	Pass	
Ethylbenzene	%	100		70-130	Pass	
m&p-Xylenes	%	101		70-130	Pass	
Xylenes - Total	%	102		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene	%	93		70-130	Pass	
TRH C6-C10	%	89		70-130	Pass	
TRH >C10-C16	%	75		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Polycyclic Aromatic Hydrocarbons</b>						
Acenaphthene	%	105		70-130	Pass	
Acenaphthylene	%	101		70-130	Pass	
Anthracene	%	100		70-130	Pass	
Benz(a)anthracene	%	99		70-130	Pass	
Benzo(a)pyrene	%	85		70-130	Pass	
Benzo(b&j)fluoranthene	%	81		70-130	Pass	
Benzo(g,h,i)perylene	%	72		70-130	Pass	
Benzo(k)fluoranthene	%	102		70-130	Pass	
Chrysene	%	111		70-130	Pass	
Dibenz(a,h)anthracene	%	71		70-130	Pass	
Fluoranthene	%	114		70-130	Pass	
Fluorene	%	99		70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	71		70-130	Pass	
Naphthalene	%	99		70-130	Pass	
Phenanthrene	%	101		70-130	Pass	
Pyrene	%	113		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	%	82		70-130	Pass	
4,4'-DDD	%	91		70-130	Pass	
4,4'-DDE	%	85		70-130	Pass	
4,4'-DDT	%	96		70-130	Pass	
a-BHC	%	80		70-130	Pass	
Aldrin	%	81		70-130	Pass	
b-BHC	%	76		70-130	Pass	
d-BHC	%	78		70-130	Pass	
Dieldrin	%	90		70-130	Pass	
Endosulfan I	%	74		70-130	Pass	

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	%	71		70-130	Pass	
Endosulfan sulphate	%	81		70-130	Pass	
Endrin	%	95		70-130	Pass	
Endrin aldehyde	%	92		70-130	Pass	
Endrin ketone	%	72		70-130	Pass	
g-BHC (Lindane)	%	93		70-130	Pass	
Heptachlor	%	87		70-130	Pass	
Heptachlor epoxide	%	77		70-130	Pass	
Hexachlorobenzene	%	85		70-130	Pass	
Methoxychlor	%	76		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Organophosphorus Pesticides</b>						
Diazinon	%	116		70-130	Pass	
Dimethoate	%	73		70-130	Pass	
Ethion	%	125		70-130	Pass	
Fenitrothion	%	104		70-130	Pass	
Methyl parathion	%	119		70-130	Pass	
Mevinphos	%	110		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Phenols (Halogenated)</b>						
2-Chlorophenol	%	99		30-130	Pass	
2,4-Dichlorophenol	%	97		30-130	Pass	
2,4,5-Trichlorophenol	%	95		30-130	Pass	
2,4,6-Trichlorophenol	%	106		30-130	Pass	
2,6-Dichlorophenol	%	80		30-130	Pass	
4-Chloro-3-methylphenol	%	99		30-130	Pass	
Pentachlorophenol	%	77		30-130	Pass	
Tetrachlorophenols - Total	%	110		30-130	Pass	
<b>LCS - % Recovery</b>						
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4,6-dinitrophenol	%	31		30-130	Pass	
2-Methyl-4,6-dinitrophenol	%	70		30-130	Pass	
2-Methylphenol (o-Cresol)	%	89		30-130	Pass	
2-Nitrophenol	%	107		30-130	Pass	
2,4-Dimethylphenol	%	102		30-130	Pass	
2,4-Dinitrophenol	%	35		30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	103		30-130	Pass	
4-Nitrophenol	%	91		30-130	Pass	
Dinoseb	%	94		30-130	Pass	
Phenol	%	96		30-130	Pass	
<b>LCS - % Recovery</b>						
<b>Heavy Metals</b>						
Arsenic	%	105		80-120	Pass	
Cadmium	%	92		80-120	Pass	
Chromium	%	109		80-120	Pass	
Copper	%	113		80-120	Pass	
Lead	%	109		80-120	Pass	
Mercury	%	101		75-125	Pass	
Nickel	%	111		80-120	Pass	
Zinc	%	108		80-120	Pass	
<b>LCS - % Recovery</b>						
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA)	%	121		50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	138		50-150	Pass	

Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code		
Perfluorohexanoic acid (PFHxA)	%	102	50-150	Pass			
Perfluoroheptanoic acid (PFHpA)	%	111	50-150	Pass			
Perfluorooctanoic acid (PFOA)	%	112	50-150	Pass			
Perfluorononanoic acid (PFNA)	%	130	50-150	Pass			
Perfluorodecanoic acid (PFDA)	%	118	50-150	Pass			
Perfluoroundecanoic acid (PFUnDA)	%	136	50-150	Pass			
Perfluorododecanoic acid (PFDoDA)	%	115	50-150	Pass			
Perfluorotridecanoic acid (PFTrDA)	%	127	50-150	Pass			
Perfluorotetradecanoic acid (PFTeDA)	%	130	50-150	Pass			
<b>LCS - % Recovery</b>							
<b>Perfluoroalkyl sulfonamido substances</b>							
Perfluorooctane sulfonamide (FOSA)	%	130	50-150	Pass			
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	133	50-150	Pass			
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	114	50-150	Pass			
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	122	50-150	Pass			
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	116	50-150	Pass			
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	121	50-150	Pass			
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	111	50-150	Pass			
<b>LCS - % Recovery</b>							
<b>Perfluoroalkyl sulfonic acids (PFSA's)</b>							
Perfluorobutanesulfonic acid (PFBS)	%	102	50-150	Pass			
Perfluorononanesulfonic acid (PFNS)	%	105	50-150	Pass			
Perfluoropropanesulfonic acid (PFPrS)	%	101	50-150	Pass			
Perfluoropentanesulfonic acid (PFPeS)	%	109	50-150	Pass			
Perfluorohexanesulfonic acid (PFHxS)	%	120	50-150	Pass			
Perfluoroheptanesulfonic acid (PFHpS)	%	119	50-150	Pass			
Perfluorooctanesulfonic acid (PFOS)	%	138	50-150	Pass			
Perfluorodecanesulfonic acid (PFDS)	%	81	50-150	Pass			
<b>LCS - % Recovery</b>							
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)</b>							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	110	50-150	Pass			
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	131	50-150	Pass			
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	77	50-150	Pass			
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	144	50-150	Pass			
<b>Test</b>	<b>Lab Sample ID</b>	<b>QA Source</b>	<b>Units</b>	<b>Result 1</b>	<b>Acceptance Limits</b>	<b>Pass Limits</b>	<b>Qualifying Code</b>
<b>Spike - % Recovery</b>							
<b>Organophosphorus Pesticides</b>							
Diazinon	M19-Au38253	NCP	%	119	70-130	Pass	
Dimethoate	M19-Au38253	NCP	%	85	70-130	Pass	
Ethion	M19-Au38253	NCP	%	99	70-130	Pass	
Fenitrothion	M19-Au38253	NCP	%	86	70-130	Pass	
Methyl parathion	M19-Au38253	NCP	%	83	70-130	Pass	
Mevinphos	M19-Au38253	NCP	%	79	70-130	Pass	
<b>Spike - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>							
TRH C6-C9	S19-Au36024	CP	%	89	70-130	Pass	
TRH C10-C14	S19-Au36024	CP	%	92	70-130	Pass	
<b>Spike - % Recovery</b>							
<b>BTEX</b>							
Benzene	S19-Au36024	CP	%	90	70-130	Pass	
Toluene	S19-Au36024	CP	%	90	70-130	Pass	
Ethylbenzene	S19-Au36024	CP	%	90	70-130	Pass	
m&p-Xylenes	S19-Au36024	CP	%	91	70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
o-Xylene	S19-Au36024	CP	%	90		70-130	Pass	
Xylenes - Total	S19-Au36024	CP	%	91		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1				
Naphthalene	S19-Au36024	CP	%	95		70-130	Pass	
TRH C6-C10	S19-Au36024	CP	%	85		70-130	Pass	
TRH >C10-C16	S19-Au36024	CP	%	77		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Heavy Metals</b>				Result 1				
Arsenic	S19-Au36024	CP	%	99		75-125	Pass	
Cadmium	S19-Au36024	CP	%	82		75-125	Pass	
Chromium	S19-Au36024	CP	%	102		75-125	Pass	
Copper	S19-Au36024	CP	%	99		75-125	Pass	
Lead	S19-Au36024	CP	%	96		75-125	Pass	
Mercury	S19-Au36024	CP	%	85		70-130	Pass	
Nickel	S19-Au36024	CP	%	93		75-125	Pass	
Zinc	S19-Au36024	CP	%	73		75-125	Fail	Q08
<b>Spike - % Recovery</b>								
<b>Organochlorine Pesticides</b>				Result 1				
Chlordanes - Total	S19-Au36026	CP	%	102		70-130	Pass	
4,4'-DDD	S19-Au36026	CP	%	92		70-130	Pass	
4,4'-DDE	S19-Au36026	CP	%	107		70-130	Pass	
4,4'-DDT	S19-Au36026	CP	%	94		70-130	Pass	
a-BHC	S19-Au36026	CP	%	72		70-130	Pass	
Aldrin	S19-Au36026	CP	%	94		70-130	Pass	
b-BHC	S19-Au36026	CP	%	71		70-130	Pass	
d-BHC	S19-Au36026	CP	%	78		70-130	Pass	
Dieldrin	S19-Au36026	CP	%	107		70-130	Pass	
Endosulfan I	S19-Au36026	CP	%	97		70-130	Pass	
Endosulfan II	S19-Au36026	CP	%	76		70-130	Pass	
Endosulfan sulphate	S19-Au36026	CP	%	79		70-130	Pass	
Endrin	S19-Au36026	CP	%	88		70-130	Pass	
Endrin aldehyde	S19-Au36026	CP	%	84		70-130	Pass	
Endrin ketone	S19-Au36026	CP	%	90		70-130	Pass	
g-BHC (Lindane)	S19-Au36026	CP	%	76		70-130	Pass	
Heptachlor	S19-Au36026	CP	%	73		70-130	Pass	
Heptachlor epoxide	S19-Au36026	CP	%	85		70-130	Pass	
Hexachlorobenzene	S19-Au36026	CP	%	104		70-130	Pass	
Methoxychlor	S19-Au36026	CP	%	76		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1				
Perfluorobutanoic acid (PFBA)	S19-Au36028	CP	%	117		50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S19-Au36028	CP	%	122		50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S19-Au36028	CP	%	112		50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S19-Au36028	CP	%	110		50-150	Pass	
Perfluorooctanoic acid (PFOA)	S19-Au36028	CP	%	128		50-150	Pass	
Perfluorononanoic acid (PFNA)	S19-Au36028	CP	%	134		50-150	Pass	
Perfluorodecanoic acid (PFDA)	S19-Au36028	CP	%	126		50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S19-Au36028	CP	%	131		50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S19-Au36028	CP	%	118		50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	S19-Au36028	CP	%	128		50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S19-Au36028	CP	%	135		50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl sulfonamido substances</b>				Result 1				
Perfluorooctane sulfonamide (FOSA)	S19-Au36028	CP	%	127		50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S19-Au36028	CP	%	130		50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S19-Au36028	CP	%	126		50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S19-Au36028	CP	%	118		50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S19-Au36028	CP	%	113		50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S19-Au36028	CP	%	126		50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S19-Au36028	CP	%	106		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl sulfonic acids (PFSAs)</b>				Result 1				
Perfluorobutanesulfonic acid (PFBS)	S19-Au36028	CP	%	104		50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S19-Au36028	CP	%	109		50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S19-Au36028	CP	%	109		50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S19-Au36028	CP	%	115		50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S19-Au36028	CP	%	115		50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S19-Au36028	CP	%	128		50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S19-Au36028	CP	%	126		50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S19-Au36028	CP	%	88		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>				Result 1				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S19-Au36028	CP	%	108		50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S19-Au36028	CP	%	113		50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S19-Au36028	CP	%	82		50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S19-Au36028	CP	%	139		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1				
TRH C10-C14	S19-Au36039	CP	%	84		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1				
TRH >C10-C16	S19-Au36039	CP	%	79		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1				
Acenaphthene	S19-Au36039	CP	%	77		70-130	Pass	
Acenaphthylene	S19-Au36039	CP	%	82		70-130	Pass	
Anthracene	S19-Au36039	CP	%	73		70-130	Pass	
Benz(a)anthracene	S19-Au36039	CP	%	75		70-130	Pass	
Benzo(a)pyrene	S19-Au36039	CP	%	71		70-130	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene	S19-Au36039	CP	%	75		70-130	Pass	
Benzo(g,h,i)perylene	S19-Au36039	CP	%	79		70-130	Pass	
Benzo(k)fluoranthene	S19-Au36039	CP	%	73		70-130	Pass	
Chrysene	S19-Au36039	CP	%	90		70-130	Pass	
Dibenz(a,h)anthracene	S19-Au36039	CP	%	80		70-130	Pass	
Fluoranthene	S19-Au36039	CP	%	82		70-130	Pass	
Fluorene	S19-Au36039	CP	%	79		70-130	Pass	
Indeno(1,2,3-cd)pyrene	S19-Au36039	CP	%	72		70-130	Pass	
Naphthalene	S19-Au36039	CP	%	83		70-130	Pass	
Phenanthrene	S19-Au36039	CP	%	78		70-130	Pass	
Pyrene	S19-Au36039	CP	%	86		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Phenols (Halogenated)</b>				Result 1				
2-Chlorophenol	S19-Au36039	CP	%	83		30-130	Pass	
2,4-Dichlorophenol	S19-Au36039	CP	%	75		30-130	Pass	
2,4,5-Trichlorophenol	S19-Au36039	CP	%	80		30-130	Pass	
2,4,6-Trichlorophenol	S19-Au36039	CP	%	70		30-130	Pass	
2,6-Dichlorophenol	S19-Au36039	CP	%	79		30-130	Pass	
4-Chloro-3-methylphenol	S19-Au36039	CP	%	75		30-130	Pass	
Pentachlorophenol	S19-Au36039	CP	%	76		30-130	Pass	
Tetrachlorophenols - Total	S19-Au36039	CP	%	87		30-130	Pass	
<b>Spike - % Recovery</b>								
<b>Phenols (non-Halogenated)</b>				Result 1				
2-Cyclohexyl-4,6-dinitrophenol	S19-Au36039	CP	%	63		30-130	Pass	
2-Methyl-4,6-dinitrophenol	S19-Au36039	CP	%	58		30-130	Pass	
2-Methylphenol (o-Cresol)	S19-Au36039	CP	%	87		30-130	Pass	
2-Nitrophenol	S19-Au36039	CP	%	72		30-130	Pass	
2,4-Dimethylphenol	S19-Au36039	CP	%	81		30-130	Pass	
2,4-Dinitrophenol	S19-Au36039	CP	%	71		30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S19-Au36039	CP	%	83		30-130	Pass	
4-Nitrophenol	S19-Au36039	CP	%	78		30-130	Pass	
Dinoseb	S19-Au36039	CP	%	79		30-130	Pass	
Phenol	S19-Au36039	CP	%	78		30-130	Pass	
<b>Spike - % Recovery</b>								
<b>Heavy Metals</b>				Result 1				
Arsenic	S19-Au36039	CP	%	81		75-125	Pass	
Cadmium	S19-Au36039	CP	%	88		75-125	Pass	
Chromium	S19-Au36039	CP	%	73		75-125	Fail	Q08
Copper	S19-Au36039	CP	%	82		75-125	Pass	
Lead	S19-Au36039	CP	%	74		75-125	Fail	Q08
Mercury	S19-Au36039	CP	%	96		70-130	Pass	
Nickel	S19-Au36039	CP	%	80		75-125	Pass	
Zinc	S19-Au36039	CP	%	64		75-125	Fail	Q08
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1				
TRH C6-C9	S19-Au36148	CP	%	103		70-130	Pass	
TRH C10-C14	S19-Au36148	CP	%	83		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>BTEX</b>				Result 1				
Benzene	S19-Au36148	CP	%	91		70-130	Pass	
Toluene	S19-Au36148	CP	%	101		70-130	Pass	
Ethylbenzene	S19-Au36148	CP	%	101		70-130	Pass	
m&p-Xylenes	S19-Au36148	CP	%	110		70-130	Pass	
o-Xylene	S19-Au36148	CP	%	105		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Xylenes - Total	S19-Au36148	CP	%	108		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1				
Naphthalene	S19-Au36148	CP	%	85		70-130	Pass	
TRH C6-C10	S19-Au36148	CP	%	94		70-130	Pass	
TRH >C10-C16	S19-Au36148	CP	%	74		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1				
TRH C6-C9	S19-Au36303	CP	%	92		70-130	Pass	
TRH C10-C14	S19-Au36303	CP	%	89		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>BTEX</b>				Result 1				
Benzene	S19-Au36303	CP	%	93		70-130	Pass	
Toluene	S19-Au36303	CP	%	103		70-130	Pass	
Ethylbenzene	S19-Au36303	CP	%	106		70-130	Pass	
m&p-Xylenes	S19-Au36303	CP	%	108		70-130	Pass	
o-Xylene	S19-Au36303	CP	%	107		70-130	Pass	
Xylenes - Total	S19-Au36303	CP	%	108		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1				
Naphthalene	S19-Au36303	CP	%	114		70-130	Pass	
TRH C6-C10	S19-Au36303	CP	%	90		70-130	Pass	
TRH >C10-C16	S19-Au36303	CP	%	84		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1				
Acenaphthene	S19-Au36303	CP	%	104		70-130	Pass	
Acenaphthylene	S19-Au36303	CP	%	103		70-130	Pass	
Anthracene	S19-Au36303	CP	%	94		70-130	Pass	
Benz(a)anthracene	S19-Au36303	CP	%	115		70-130	Pass	
Benzo(a)pyrene	S19-Au36303	CP	%	120		70-130	Pass	
Benzo(b&j)fluoranthene	S19-Au36303	CP	%	119		70-130	Pass	
Benzo(g,h,i)perylene	S19-Au36303	CP	%	87		70-130	Pass	
Benzo(k)fluoranthene	S19-Au36303	CP	%	117		70-130	Pass	
Chrysene	S19-Au36303	CP	%	113		70-130	Pass	
Dibenz(a,h)anthracene	S19-Au36303	CP	%	77		70-130	Pass	
Fluoranthene	S19-Au36303	CP	%	112		70-130	Pass	
Fluorene	S19-Au36303	CP	%	103		70-130	Pass	
Indeno(1,2,3-cd)pyrene	S19-Au36303	CP	%	76		70-130	Pass	
Naphthalene	S19-Au36303	CP	%	111		70-130	Pass	
Phenanthrene	S19-Au36303	CP	%	105		70-130	Pass	
Pyrene	S19-Au36303	CP	%	111		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Phenols (Halogenated)</b>				Result 1				
2-Chlorophenol	S19-Au36303	CP	%	109		30-130	Pass	
2,4-Dichlorophenol	S19-Au36303	CP	%	88		30-130	Pass	
2,4,5-Trichlorophenol	S19-Au36303	CP	%	84		30-130	Pass	
2,4,6-Trichlorophenol	S19-Au36303	CP	%	60		30-130	Pass	
2,6-Dichlorophenol	S19-Au36303	CP	%	111		30-130	Pass	
4-Chloro-3-methylphenol	S19-Au36303	CP	%	64		30-130	Pass	
Pentachlorophenol	S19-Au36303	CP	%	109		30-130	Pass	
Tetrachlorophenols - Total	S19-Au36303	CP	%	101		30-130	Pass	
<b>Spike - % Recovery</b>								
<b>Phenols (non-Halogenated)</b>				Result 1				
2-Cyclohexyl-4,6-dinitrophenol	S19-Au36303	CP	%	86		30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
2-Methyl-4,6-dinitrophenol	S19-Au36303	CP	%	107		30-130	Pass	
2-Methylphenol (o-Cresol)	S19-Au36303	CP	%	111		30-130	Pass	
2-Nitrophenol	S19-Au36303	CP	%	118		30-130	Pass	
2,4-Dimethylphenol	S19-Au36303	CP	%	108		30-130	Pass	
2,4-Dinitrophenol	S19-Au36303	CP	%	76		30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S19-Au36303	CP	%	110		30-130	Pass	
4-Nitrophenol	S19-Au36303	CP	%	96		30-130	Pass	
Dinoseb	S19-Au36303	CP	%	109		30-130	Pass	
Phenol	S19-Au36303	CP	%	116		30-130	Pass	
<b>Spike - % Recovery</b>								
<b>Heavy Metals</b>				Result 1				
Arsenic	S19-Au36303	CP	%	66		75-125	Fail	Q08
Cadmium	S19-Au36303	CP	%	87		75-125	Pass	
Copper	S19-Au36303	CP	%	82		75-125	Pass	
Lead	S19-Au36303	CP	%	56		75-125	Fail	Q08
Mercury	S19-Au36303	CP	%	93		70-130	Pass	
Nickel	S19-Au36303	CP	%	73		75-125	Fail	Q08
Zinc	S19-Au36303	CP	%	51		75-125	Fail	Q08
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1				
Perfluorobutanoic acid (PFBA)	S19-Au36307	CP	%	118		50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S19-Au36307	CP	%	89		50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S19-Au36307	CP	%	103		50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S19-Au36307	CP	%	112		50-150	Pass	
Perfluorooctanoic acid (PFOA)	S19-Au36307	CP	%	118		50-150	Pass	
Perfluorononanoic acid (PFNA)	S19-Au36307	CP	%	133		50-150	Pass	
Perfluorodecanoic acid (PFDA)	S19-Au36307	CP	%	120		50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S19-Au36307	CP	%	135		50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S19-Au36307	CP	%	113		50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	S19-Au36307	CP	%	133		50-150	Pass	
Perfluorotetradecanoic acid (PFTTeDA)	S19-Au36307	CP	%	136		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl sulfonamido substances</b>				Result 1				
Perfluorooctane sulfonamide (FOSA)	S19-Au36307	CP	%	123		50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S19-Au36307	CP	%	130		50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S19-Au36307	CP	%	121		50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S19-Au36307	CP	%	117		50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S19-Au36307	CP	%	108		50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S19-Au36307	CP	%	121		50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S19-Au36307	CP	%	115		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl sulfonic acids (PFSAs)</b>				Result 1				
Perfluorobutanesulfonic acid (PFBS)	S19-Au36307	CP	%	99		50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S19-Au36307	CP	%	111		50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoropropanesulfonic acid (PFPrS)	S19-Au36307	CP	%	107			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S19-Au36307	CP	%	104			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S19-Au36307	CP	%	115			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S19-Au36307	CP	%	119			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S19-Au36307	CP	%	107			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S19-Au36307	CP	%	79			50-150	Pass	
<b>Spike - % Recovery</b>									
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S19-Au36307	CP	%	109			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S19-Au36307	CP	%	122			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S19-Au36307	CP	%	82			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S19-Au36307	CP	%	146			50-150	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH C10-C14	S19-Au36023	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S19-Au36023	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S19-Au36023	CP	mg/kg	< 50	< 50	<1	30%	Pass	
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH >C10-C16	S19-Au36023	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S19-Au36023	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S19-Au36023	CP	mg/kg	< 100	< 100	<1	30%	Pass	
<b>Duplicate</b>									
<b>Organochlorine Pesticides</b>				Result 1	Result 2	RPD			
Chlordanes - Total	M19-Au38260	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

<b>Duplicate</b>								
<b>Organochlorine Pesticides</b>				Result 1	Result 2	RPD		
Methoxychlor	M19-Au38260	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	M19-Au19467	NCP	mg/kg	< 1	< 1	<1	30%	Pass
<b>Duplicate</b>								
<b>Organophosphorus Pesticides</b>				Result 1	Result 2	RPD		
Azinphos-methyl	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	M19-Au38260	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfotion	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	M19-Au38260	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	M19-Au38260	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	M19-Au38260	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
<b>Duplicate</b>								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Arsenic	S19-Au36023	CP	mg/kg	5.8	6.4	11	30%	Pass
Cadmium	S19-Au36023	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Au36023	CP	mg/kg	16	18	10	30%	Pass
Copper	S19-Au36023	CP	mg/kg	28	31	11	30%	Pass
Lead	S19-Au36023	CP	mg/kg	28	30	6.0	30%	Pass
Mercury	S19-Au36023	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S19-Au36023	CP	mg/kg	16	18	14	30%	Pass
Zinc	S19-Au36023	CP	mg/kg	68	80	17	30%	Pass
<b>Duplicate</b>								
				Result 1	Result 2	RPD		
% Moisture	S19-Au36023	CP	%	11	12	8.0	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S19-Au36024	CP	mg/kg	5.9	5.8	1.0	30%	Pass
Cadmium	S19-Au36024	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Au36024	CP	mg/kg	17	17	2.0	30%	Pass
Copper	S19-Au36024	CP	mg/kg	32	32	2.0	30%	Pass
Lead	S19-Au36024	CP	mg/kg	31	30	2.0	30%	Pass
Mercury	S19-Au36024	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S19-Au36024	CP	mg/kg	19	19	3.0	30%	Pass
Zinc	S19-Au36024	CP	mg/kg	79	77	3.0	30%	Pass
Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanoic acid (PFNA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S19-Au36026	CP	ug/kg	< 10	< 10	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S19-Au36026	CP	ug/kg	< 10	< 10	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass

Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S19-Au36026	CP	ug/kg	< 10	< 10	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S19-Au36026	CP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S19-Au36030	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S19-Au36030	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S19-Au36030	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S19-Au36030	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S19-Au36030	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S19-Au36030	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S19-Au36030	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S19-Au36030	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S19-Au36030	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S19-Au36033	CP	%	13	12	8.0	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S19-Au36037	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C10-C14	S19-Au36037	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S19-Au36037	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S19-Au36037	CP	mg/kg	< 50	< 50	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S19-Au36037	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S19-Au36037	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S19-Au36037	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S19-Au36037	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S19-Au36037	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S19-Au36037	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S19-Au36037	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S19-Au36037	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	S19-Au36037	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S19-Au36037	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S19-Au36037	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S19-Au36037	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S19-Au36037	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S19-Au36037	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S19-Au36037	CP	mg/kg	< 0.5	0.9	59	30%	Fail

<b>Duplicate</b>									
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD			
Benzo(a)pyrene	S19-Au36037	CP	mg/kg	0.7	1.3	59	30%	Fail	Q15
Benzo(b&j)fluoranthene	S19-Au36037	CP	mg/kg	0.6	1.2	67	30%	Fail	Q15
Benzo(g,h,i)perylene	S19-Au36037	CP	mg/kg	0.7	1.3	63	30%	Fail	Q15
Benzo(k)fluoranthene	S19-Au36037	CP	mg/kg	0.6	1.3	70	30%	Fail	Q15
Chrysene	S19-Au36037	CP	mg/kg	0.7	1.3	60	30%	Fail	Q15
Dibenz(a,h)anthracene	S19-Au36037	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S19-Au36037	CP	mg/kg	0.9	1.8	65	30%	Fail	Q15
Fluorene	S19-Au36037	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S19-Au36037	CP	mg/kg	0.5	1.1	73	30%	Fail	Q15
Naphthalene	S19-Au36037	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S19-Au36037	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S19-Au36037	CP	mg/kg	1.2	2.2	57	30%	Fail	Q15
<b>Duplicate</b>									
<b>Phenols (Halogenated)</b>				Result 1	Result 2	RPD			
2-Chlorophenol	S19-Au36037	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2,4-Dichlorophenol	S19-Au36037	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2,4,5-Trichlorophenol	S19-Au36037	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2,4,6-Trichlorophenol	S19-Au36037	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2,6-Dichlorophenol	S19-Au36037	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	S19-Au36037	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	S19-Au36037	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	S19-Au36037	CP	mg/kg	< 10	< 10	<1	30%	Pass	
<b>Duplicate</b>									
<b>Phenols (non-Halogenated)</b>				Result 1	Result 2	RPD			
2-Cyclohexyl-4,6-dinitrophenol	S19-Au36037	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4,6-dinitrophenol	S19-Au36037	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S19-Au36037	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	S19-Au36037	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2,4-Dimethylphenol	S19-Au36037	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2,4-Dinitrophenol	S19-Au36037	CP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S19-Au36037	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	S19-Au36037	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	S19-Au36037	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	S19-Au36037	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
<b>Duplicate</b>									
<b>Heavy Metals</b>				Result 1	Result 2	RPD			
Arsenic	S19-Au36037	CP	mg/kg	6.2	5.9	4.0	30%	Pass	
Cadmium	S19-Au36037	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S19-Au36037	CP	mg/kg	11	13	13	30%	Pass	
Copper	S19-Au36037	CP	mg/kg	16	14	11	30%	Pass	
Lead	S19-Au36037	CP	mg/kg	18	15	18	30%	Pass	
Mercury	S19-Au36037	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S19-Au36037	CP	mg/kg	11	10	5.0	30%	Pass	
Zinc	S19-Au36037	CP	mg/kg	27	25	8.0	30%	Pass	
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH C6-C9	S19-Au36039	CP	mg/kg	< 20	< 20	<1	30%	Pass	
<b>Duplicate</b>									
<b>BTEX</b>				Result 1	Result 2	RPD			
Benzene	S19-Au36039	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S19-Au36039	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S19-Au36039	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S19-Au36039	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S19-Au36039	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S19-Au36039	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	



<b>Duplicate</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD		
Naphthalene	S19-Au36039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S19-Au36039	CP	mg/kg	< 20	< 20	<1	30%	Pass
<b>Duplicate</b>								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Arsenic	S19-Au36039	CP	mg/kg	9.6	9.6	<1	30%	Pass
Cadmium	S19-Au36039	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Au36039	CP	mg/kg	21	21	<1	30%	Pass
Copper	S19-Au36039	CP	mg/kg	27	27	<1	30%	Pass
Lead	S19-Au36039	CP	mg/kg	25	25	<1	30%	Pass
Mercury	S19-Au36039	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S19-Au36039	CP	mg/kg	16	16	1.0	30%	Pass
Zinc	S19-Au36039	CP	mg/kg	62	62	<1	30%	Pass
<b>Duplicate</b>								
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanoic acid (PFNA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
<b>Duplicate</b>								
<b>Perfluoroalkyl sulfonamido substances</b>				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S19-Au36040	CP	ug/kg	< 10	< 10	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S19-Au36040	CP	ug/kg	< 10	< 10	<1	30%	Pass
<b>Duplicate</b>								
<b>Perfluoroalkyl sulfonic acids (PFSAs)</b>				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass

<b>Duplicate</b>								
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>				Result 1	Result 2	RPD		
Perfluoroheptanesulfonic acid (PFHpS)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
<b>Duplicate</b>								
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S19-Au36040	CP	ug/kg	< 10	< 10	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S19-Au36040	CP	ug/kg	< 5	< 5	<1	30%	Pass
<b>Duplicate</b>								
				Result 1	Result 2	RPD		
% Moisture	S19-Au36141	CP	%	17	17	<1	30%	Pass
<b>Duplicate</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD		
TRH C10-C14	S19-Au36147	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S19-Au36147	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S19-Au36147	CP	mg/kg	< 50	< 50	<1	30%	Pass
<b>Duplicate</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD		
TRH >C10-C16	S19-Au36147	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S19-Au36147	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S19-Au36147	CP	mg/kg	< 100	< 100	<1	30%	Pass
<b>Duplicate</b>								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Arsenic	S19-Au36147	CP	mg/kg	6.6	6.2	6.0	30%	Pass
Cadmium	S19-Au36147	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Au36147	CP	mg/kg	22	20	10	30%	Pass
Copper	S19-Au36147	CP	mg/kg	20	19	8.0	30%	Pass
Lead	S19-Au36147	CP	mg/kg	28	24	12	30%	Pass
Mercury	S19-Au36147	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S19-Au36147	CP	mg/kg	5.5	< 5	18	30%	Pass
Zinc	S19-Au36147	CP	mg/kg	26	29	12	30%	Pass
<b>Duplicate</b>								
				Result 1	Result 2	RPD		
% Moisture	S19-Au36152	CP	%	10	13	24	30%	Pass
<b>Duplicate</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD		
TRH C6-C9	S19-Au36268	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C10-C14	S19-Au36268	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S19-Au36268	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S19-Au36268	CP	mg/kg	< 50	< 50	<1	30%	Pass
<b>Duplicate</b>								
<b>BTEX</b>				Result 1	Result 2	RPD		
Benzene	S19-Au36268	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S19-Au36268	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S19-Au36268	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S19-Au36268	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass

<b>Duplicate</b>								
<b>BTEX</b>				Result 1	Result 2	RPD		
o-Xylene	S19-Au36268	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S19-Au36268	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
<b>Duplicate</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD		
Naphthalene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S19-Au36268	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	S19-Au36268	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S19-Au36268	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S19-Au36268	CP	mg/kg	< 100	< 100	<1	30%	Pass
<b>Duplicate</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD		
Acenaphthene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)anthracene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
<b>Duplicate</b>								
<b>Phenols (Halogenated)</b>				Result 1	Result 2	RPD		
2-Chlorophenol	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	S19-Au36268	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	S19-Au36268	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	S19-Au36268	CP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	S19-Au36268	CP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	S19-Au36268	CP	mg/kg	< 10	< 10	<1	30%	Pass
<b>Duplicate</b>								
<b>Phenols (non-Halogenated)</b>				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	S19-Au36268	CP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	S19-Au36268	CP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	S19-Au36268	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	S19-Au36268	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	S19-Au36268	CP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	S19-Au36268	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	S19-Au36268	CP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	S19-Au36268	CP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	S19-Au36268	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanoic acid (PFNA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S19-Au36272	CP	ug/kg	< 10	< 10	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S19-Au36272	CP	ug/kg	< 10	< 10	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonic acids (PFSA)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S19-Au36272	CP	ug/kg	< 10	< 10	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S19-Au36272	CP	ug/kg	< 5	< 5	<1	30%	Pass

<b>Duplicate</b>								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Arsenic	S19-Au36303	CP	mg/kg	33	32	1.0	30%	Pass
Cadmium	S19-Au36303	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Au36303	CP	mg/kg	110	110	1.0	30%	Pass
Copper	S19-Au36303	CP	mg/kg	15	14	2.0	30%	Pass
Lead	S19-Au36303	CP	mg/kg	40	39	3.0	30%	Pass
Mercury	S19-Au36303	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S19-Au36303	CP	mg/kg	15	15	2.0	30%	Pass
Zinc	S19-Au36303	CP	mg/kg	43	43	<1	30%	Pass
<b>Duplicate</b>								
				Result 1	Result 2	RPD		
% Moisture	S19-Au36306	CP	%	13	13	5.0	30%	Pass
<b>Duplicate</b>								
				Result 1	Result 2	RPD		
% Moisture	S19-Au36730	CP	%	19	18	8.0	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
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
Q15	The RPD reported passes Eurofins   mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

**Authorised By**

Alena Bounkeua	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Bryan Wilson	Senior Analyst-PFAS (QLD)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Gabriele Cordero	Senior Analyst-Metal (NSW)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)


**Glenn Jackson  
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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GHD Pty Ltd NSW  
 Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000



NATA Accredited  
 Accreditation Number 1261  
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

Attention: **Henry Luo**

Report **673140-W**  
 Project name **TOWNSON AND BURDEKIN RD**  
 Project ID **12511195**  
 Received Date **Aug 23, 2019**

Client Sample ID			RB_200819	RB_210819	RB0/230819	TB
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S19-Au36136	S19-Au36146	S19-Au36310	S19-Au36311
Date Sampled			Aug 20, 2019	Aug 21, 2019	Aug 23, 2019	Aug 23, 2019
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Chromium	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Copper	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Zinc	0.005	mg/L	< 0.005	0.006	< 0.005	-
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	0.05	ug/L	-	-	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorononanoic acid (PFNA) <sup>N11</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA) <sup>N15</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	-	-	134	134
13C5-PFPeA (surr.)	1	%	-	-	116	133
13C5-PFHxA (surr.)	1	%	-	-	159	148
13C4-PFHpA (surr.)	1	%	-	-	116	114
13C8-PFOA (surr.)	1	%	-	-	158	155
13C5-PFNA (surr.)	1	%	-	-	112	114
13C6-PFDA (surr.)	1	%	-	-	153	143
13C2-PFUnDA (surr.)	1	%	-	-	150	159
13C2-PFDoDA (surr.)	1	%	-	-	110	120
13C2-PFTeDA (surr.)	1	%	-	-	61	82

Client Sample ID			RB_200819	RB_210819	RB0/230819	TB
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S19-Au36136	S19-Au36146	S19-Au36310	S19-Au36311
Date Sampled			Aug 20, 2019	Aug 21, 2019	Aug 23, 2019	Aug 23, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	0.05	ug/L	-	-	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	0.05	ug/L	-	-	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	0.05	ug/L	-	-	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	0.05	ug/L	-	-	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	0.05	ug/L	-	-	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	0.05	ug/L	-	-	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	0.05	ug/L	-	-	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	-	-	108	116
D3-N-MeFOSA (surr.)	1	%	-	-	51	71
D5-N-EtFOSA (surr.)	1	%	-	-	46	64
D7-N-MeFOSE (surr.)	1	%	-	-	82	89
D9-N-EtFOSE (surr.)	1	%	-	-	81	91
D5-N-EtFOSAA (surr.)	1	%	-	-	90	92
D3-N-MeFOSAA (surr.)	1	%	-	-	96	102
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	-	-	139	127
18O2-PFHxS (surr.)	1	%	-	-	145	147
13C8-PFOS (surr.)	1	%	-	-	114	112
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	0.05	ug/L	-	-	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	0.01	ug/L	-	-	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	-	-	136	139
13C2-6:2 FTSA (surr.)	1	%	-	-	109	115
13C2-8:2 FTSA (surr.)	1	%	-	-	130	108
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	0.01	ug/L	-	-	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	-	-	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	-	-	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	-	-	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	-	-	< 0.1	< 0.1



**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

Description	Testing Site	Extracted	Holding Time
Eurofins   mgt Suite B7A			
Metals M8	Melbourne	Aug 27, 2019	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Aug 27, 2019	14 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Aug 27, 2019	14 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Aug 27, 2019	14 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Aug 27, 2019	14 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 23, 2019 6:07 PM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 673140	<b>Due:</b> Aug 30, 2019
<b>Project Name:</b> TOWNSON AND BURDEKIN RD	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
<b>Project ID:</b> 12511195	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X		X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
<b>External Laboratory</b>																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	TP17_0.0-0.1	Aug 19, 2019		Soil	S19-Au36023	X								X	X							X
2	QC09	Aug 15, 2019		Soil	S19-Au36024										X				X			
3	TP17_0.5-0.6	Aug 15, 2019		Soil	S19-Au36025										X				X			
4	BH07_0.0-0.1	Aug 15, 2019		Soil	S19-Au36026	X								X	X							X
5	BH07_0.5-0.6	Aug 15, 2019		Soil	S19-Au36027	X									X							X
6	BH07_1.0-1.1	Aug 15, 2019		Soil	S19-Au36028										X							X
7	BH07_2.9-3.0	Aug 15, 2019		Soil	S19-Au36029										X				X			X
8	BH10_0.07-0.2	Aug 20, 2019		Soil	S19-Au36030	X								X	X							X
9	BH10_0.2-0.45	Aug 20, 2019		Soil	S19-Au36031	X									X							X

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 23, 2019 6:07 PM
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**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
10	BH10_0.9-1.0	Aug 20, 2019		Soil	S19-Au36032											X			X			X
11	TP25_0-0.2	Aug 20, 2019		Soil	S19-Au36033	X				X					X	X						
12	TP25_0.3-0.4	Aug 20, 2019		Soil	S19-Au36034											X					X	X
13	TP25_1.5-1.6	Aug 20, 2019		Soil	S19-Au36035											X			X			X
14	TP24_0-0.1	Aug 20, 2019		Soil	S19-Au36036	X									X	X					X	X
15	TP24_1.5-1.6	Aug 20, 2019		Soil	S19-Au36037											X			X			X
16	TP23_0-0.8	Aug 20, 2019		Soil	S19-Au36038		X															
17	TP23_1.45-1.5	Aug 20, 2019		Soil	S19-Au36039	X										X			X			X
18	FD02_200819	Aug 20, 2019		Soil	S19-Au36040											X			X			X
19	RB_200819	Aug 20, 2019		Water	S19-Au36136							X										
20	TP21_0-0.1	Aug 20, 2019		Soil	S19-Au36137	X									X	X					X	X
21	FD03_200819	Aug 20, 2019		Soil	S19-Au36138											X			X			X

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 23, 2019 6:07 PM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	673140	<b>Due:</b>	Aug 30, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
22	TP21_0.4-0.5	Aug 20, 2019		Soil	S19-Au36139	X																
23	TP21_0.9-1.0	Aug 20, 2019		Soil	S19-Au36140											X						X
24	TP21_1.4-1.5	Aug 20, 2019		Soil	S19-Au36141	X										X			X			
25	TP20_0-0.1	Aug 20, 2019		Soil	S19-Au36142	X									X	X					X	X
26	TP20_0.4-0.5	Aug 20, 2019		Soil	S19-Au36143											X			X			
27	TP19_0-0.2	Aug 15, 2019		Soil	S19-Au36144	X									X	X					X	
28	TP19_0.5-0.6	Aug 15, 2019		Soil	S19-Au36145											X			X			
29	RB_210819	Aug 21, 2019		Water	S19-Au36146							X										
30	TP18_0-0.1	Aug 15, 2019		Soil	S19-Au36147	X									X	X					X	
31	TP18_0.4-0.5	Aug 15, 2019		Soil	S19-Au36148											X			X			
32	BH09_0-0.2	Aug 15, 2019		Soil	S19-Au36149	X									X	X					X	X
33	BH09_1.5-1.7	Aug 15, 2019		Soil	S19-Au36150											X			X			X

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<b>Project Name:</b> TOWNSON AND BURDEKIN RD	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
<b>Project ID:</b> 12511195	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
34	TP22_0-0.1	Aug 21, 2019		Soil	S19-Au36151	X									X	X					X	X
35	TP22_0.4-0.5	Aug 21, 2019		Soil	S19-Au36152											X						X
36	TP22_1.5-1.6	Aug 21, 2019		Soil	S19-Au36262											X			X			
37	TP12_0-0.2	Aug 22, 2019		Soil	S19-Au36263	X									X	X					X	
38	TP12_0.4-0.5	Aug 22, 2019		Soil	S19-Au36264											X			X			
39	TP13_0-0.2	Aug 21, 2019		Soil	S19-Au36265	X									X	X					X	
40	TP13_0.8-0.9	Aug 22, 2019		Soil	S19-Au36266											X			X			
41	TP14_0-0.2	Aug 21, 2019		Soil	S19-Au36267	X									X	X					X	
42	TP14_1.4-1.5	Aug 22, 2019		Soil	S19-Au36268											X			X			
43	TP16_0-0.2	Aug 22, 2019		Soil	S19-Au36269	X							X					X				
44	TP16_0.9-1.0	Aug 22, 2019		Soil	S19-Au36270		X															
45	BH08_0-0.2	Aug 21, 2019		Soil	S19-Au36271	X							X					X				X

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<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X		X	X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
46	BH08_0.8-1.0	Aug 21, 2019		Soil	S19-Au36272													X		X		X
47	TP15_0.0-0.2	Aug 23, 2019		Soil	S19-Au36303	X				X					X	X					X	
48	TP15_0.5-0.6	Aug 23, 2019		Soil	S19-Au36304										X				X			
49	TP15_0.2-0.4	Aug 23, 2019		Soil	S19-Au36305	X									X	X					X	
50	TP15_0.7-0.9	Aug 23, 2019		Soil	S19-Au36306										X				X			
51	BH06_0.0-0.2	Aug 23, 2019		Soil	S19-Au36307	X									X	X					X	X
52	QC11	Aug 23, 2019		Soil	S19-Au36308										X				X			
53	BH06_0.8-1.0	Aug 23, 2019		Soil	S19-Au36309										X				X			X
54	RB0/230819	Aug 23, 2019		Water	S19-Au36310							X										X
55	TB	Aug 23, 2019		Water	S19-Au36311																	X
56	TP14_0.9-1.2	Aug 23, 2019		Soil	S19-Au36312	X									X				X			
57	BH07_0.0-0.1	Aug 15, 2019		US Leachate	S19-Au36349						X											X

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<b>Project ID:</b> 12511195	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail				Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X			X			X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>				X	X			X		X	X		X	X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>							X	X					X	X	X					X
<b>Perth Laboratory - NATA Site # 23736</b>																				
58	BH07_1.0-1.1	Aug 15, 2019	US Leachate	S19-Au36350				X												X
59	BH07_2.9-3.0	Aug 15, 2019	US Leachate	S19-Au36351				X												X
60	BH10_0.2-0.45	Aug 20, 2019	US Leachate	S19-Au36352				X												X
61	BH10_0.9-1.0	Aug 20, 2019	US Leachate	S19-Au36353				X												X
62	TP25_0.3-0.4	Aug 20, 2019	US Leachate	S19-Au36354				X												X
63	TP25_1.5-1.6	Aug 20, 2019	US Leachate	S19-Au36355				X												X
64	TP24_0-0.1	Aug 20, 2019	US Leachate	S19-Au36356				X												X
65	TP24_1.5-1.6	Aug 20, 2019	US Leachate	S19-Au36357				X												X
66	TP23_0-0.8	Aug 20, 2019	US Leachate	S19-Au36358		X														
67	TP23_1.45-1.5	Aug 20, 2019	US Leachate	S19-Au36359				X												X
68	TP21_0-0.1	Aug 20, 2019	US Leachate	S19-Au36360				X												X
69	TP21_0.9-1.0	Aug 20, 2019	US Leachate	S19-Au36361				X												X

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<b>Project ID:</b> 12511195	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail				Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoralkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X				X		X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>				X	X			X			X	X	X	X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>							X		X				X	X	X					X
<b>Perth Laboratory - NATA Site # 23736</b>																				
70	TP20_0-0.1	Aug 20, 2019	US Leachate	S19-Au36362					X											X
71	BH09_0-0.2	Aug 20, 2019	US Leachate	S19-Au36363				X												X
72	BH09_1.5-1.7	Aug 20, 2019	US Leachate	S19-Au36364				X												X
73	TP22_0-0.1	Aug 21, 2019	US Leachate	S19-Au36365				X												X
74	TP22_0.4-0.5	Aug 21, 2019	US Leachate	S19-Au36366				X												X
75	BH08_0-0.2	Aug 21, 2019	US Leachate	S19-Au36367				X												X
76	BH08_0.8-1.0	Aug 21, 2019	US Leachate	S19-Au36368				X												X
77	BH06_0.0-0.2	Aug 21, 2019	US Leachate	S19-Au36369				X												X
78	BH06_0.8-1.0	Aug 21, 2019	US Leachate	S19-Au36370				X												X
79	TP17_1.0-1.1	Aug 15, 2019	Soil	S19-Au36449			X													
80	TP17_1.4-1.5	Aug 15, 2019	Soil	S19-Au36450			X													
81	BH07_1.9-2.0	Aug 15, 2019	Soil	S19-Au36451			X													



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<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
82	RB06	Aug 19, 2019		Water	S19-Au36452			X														
83	BH10_0.5-0.7	Aug 20, 2019		Soil	S19-Au36453			X														
84	TP25_0.9-1.0	Aug 20, 2019		Soil	S19-Au36454			X														
85	TP24_0.4-0.5	Aug 20, 2019		Soil	S19-Au36455			X														
86	TP24_0.6-0.7	Aug 20, 2019		Soil	S19-Au36456			X														
87	TP24_1.7-1.8	Aug 20, 2019		Soil	S19-Au36457			X														
88	TP23_0.8-0.9	Aug 20, 2019		Soil	S19-Au36458	X								X	X				X			X
89	FD01_200819	Aug 20, 2019		Soil	S19-Au36459			X														
90	FD04_00819	Aug 20, 2019		Soil	S19-Au36460			X														
91	TP20_1.2-1.3	Aug 20, 2019		Soil	S19-Au36461			X														
92	TP18_0.9-1.0	Aug 21, 2019		Soil	S19-Au36462			X														
93	BH09_0.3-0.5	Aug 21, 2019		Soil	S19-Au36463			X														

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**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoralkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X		X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
94	BH09_0.8-1.0	Aug 21, 2019		Soil	S19-Au36464			X														
95	BH09_2.1-2.3	Aug 21, 2019		Soil	S19-Au36465			X														
96	TP22_0.9-1.0	Aug 21, 2019		Soil	S19-Au36466			X														
97	TP12_0.9-1.0	Aug 22, 2019		Soil	S19-Au36467			X														
98	TP12_1.2-1.3	Aug 22, 2019		Soil	S19-Au36468			X														
99	TP12_1.5-1.6	Aug 22, 2019		Soil	S19-Au36469			X														
100	TP13_1.4-1.6	Aug 21, 2019		Soil	S19-Au36470			X														
101	TP14_0.4-0.5	Aug 21, 2019		Soil	S19-Au36471			X														
102	TP16_0.4-0.5	Aug 22, 2019		Soil	S19-Au36472					X												
103	TP16_1.4-1.5	Aug 22, 2019		Soil	S19-Au36473	X						X						X				
104	BH08_0.3-0.5	Aug 21, 2019		Soil	S19-Au36474	X						X						X				
105	BH08_1.8-2.0	Aug 21, 2019		Soil	S19-Au36475				X													

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Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>								X				X			X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X			X			X	X		X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>									X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																						
106	BH08_2.8-3.0	Aug 21, 2019		Soil	S19-Au36476				X													
107	BH08_3.8-4.0	Aug 22, 2019		Soil	S19-Au36477				X													
108	BH06_0.3-0.5	Aug 23, 2019		Soil	S19-Au36478			X														
109	BH06_1.8-2.0	Aug 23, 2019		Soil	S19-Au36479			X														
110	BH06_2.8-3.0	Aug 23, 2019		Soil	S19-Au36480			X														
111	BH06_3.8-4.0	Aug 23, 2019		Soil	S19-Au36481			X														
112	BH06_4.8-5.0	Aug 23, 2019		Soil	S19-Au36482			X														
113	BH07_3.9-4.0	Aug 15, 2019		Soil	S19-Au36730												X					X
114	FD03_210819	Aug 21, 2019		Soil	S19-Au36731												X					X
115	FD01_10819	Aug 21, 2019		Soil	S19-Au36732			X														
116	FD02_210819	Aug 21, 2019		Soil	S19-Au36733			X														
117	TRIP SPIKE	Not Provided		Soil	S19-Au36734									X								

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<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail				Asbestos - AS4964	CANCELLED	HOLD	HOLD	HOLD	USA Leaching Procedure	Metals M8	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Moisture Set	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X				X		X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>				X	X			X			X		X	X	X	X	X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>							X		X					X	X	X				X
<b>Perth Laboratory - NATA Site # 23736</b>																				
118	TRIP BLANK	Not Provided		Soil	S19-Au36735							X								
<b>Test Counts</b>				28	3	33	33	33	21	7	7	2	18	54	54	54	25	25	17	49

## Internal Quality Control Review and Glossary

### General

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Heavy Metals</b>							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
<b>Method Blank</b>							
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTTeDA)	ug/L	< 0.01			0.01	Pass	
<b>Method Blank</b>							
<b>Perfluoroalkyl sulfonamido substances</b>							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
<b>Method Blank</b>							
<b>Perfluoroalkyl sulfonic acids (PFsAs)</b>							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
<b>Method Blank</b>							
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTsAs)</b>							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
<b>LCS - % Recovery</b>							
<b>Heavy Metals</b>							
Arsenic	%	113			80-120	Pass	

Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code		
Cadmium	%	109	80-120	Pass			
Chromium	%	115	80-120	Pass			
Copper	%	115	80-120	Pass			
Lead	%	113	80-120	Pass			
Mercury	%	110	75-125	Pass			
Nickel	%	113	80-120	Pass			
Zinc	%	112	80-120	Pass			
<b>LCS - % Recovery</b>							
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>							
Perfluorobutanoic acid (PFBA)	%	111	50-150	Pass			
Perfluoropentanoic acid (PFPeA)	%	134	50-150	Pass			
Perfluorohexanoic acid (PFHxA)	%	114	50-150	Pass			
Perfluoroheptanoic acid (PFHpA)	%	121	50-150	Pass			
Perfluorooctanoic acid (PFOA)	%	115	50-150	Pass			
Perfluorononanoic acid (PFNA)	%	117	50-150	Pass			
Perfluorodecanoic acid (PFDA)	%	141	50-150	Pass			
Perfluoroundecanoic acid (PFUnDA)	%	134	50-150	Pass			
Perfluorododecanoic acid (PFDoDA)	%	139	50-150	Pass			
Perfluorotridecanoic acid (PFTrDA)	%	120	50-150	Pass			
Perfluorotetradecanoic acid (PFTeDA)	%	141	50-150	Pass			
<b>LCS - % Recovery</b>							
<b>Perfluoroalkyl sulfonamido substances</b>							
Perfluorooctane sulfonamide (FOSA)	%	118	50-150	Pass			
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	145	50-150	Pass			
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	111	50-150	Pass			
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	129	50-150	Pass			
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	103	50-150	Pass			
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	143	50-150	Pass			
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	136	50-150	Pass			
<b>LCS - % Recovery</b>							
<b>Perfluoroalkyl sulfonic acids (PFSA's)</b>							
Perfluorobutanesulfonic acid (PFBS)	%	109	50-150	Pass			
Perfluorononanesulfonic acid (PFNS)	%	113	50-150	Pass			
Perfluoropropanesulfonic acid (PFPrS)	%	146	50-150	Pass			
Perfluoropentanesulfonic acid (PFPeS)	%	146	50-150	Pass			
Perfluorohexanesulfonic acid (PFHxS)	%	103	50-150	Pass			
Perfluoroheptanesulfonic acid (PFHpS)	%	123	50-150	Pass			
Perfluorooctanesulfonic acid (PFOS)	%	112	50-150	Pass			
Perfluorodecanesulfonic acid (PFDS)	%	101	50-150	Pass			
<b>LCS - % Recovery</b>							
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)</b>							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	137	50-150	Pass			
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	107	50-150	Pass			
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	138	50-150	Pass			
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	59	50-150	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>							
<b>Heavy Metals</b>							
Arsenic	M19-Au34545	NCP	%	103	75-125	Pass	
Cadmium	M19-Au34545	NCP	%	109	75-125	Pass	
Chromium	M19-Au34545	NCP	%	107	75-125	Pass	
Copper	M19-Au34545	NCP	%	109	75-125	Pass	
Lead	M19-Au34545	NCP	%	103	75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Mercury	M19-Au34545	NCP	%	107		70-130	Pass	
Nickel	M19-Au34545	NCP	%	107		75-125	Pass	
Zinc	M19-Au34545	NCP	%	111		75-125	Pass	
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1				
Perfluorobutanoic acid (PFBA)	M19-Au35852	NCP	%	88		50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M19-Au35852	NCP	%	114		50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M19-Au35852	NCP	%	95		50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M19-Au35852	NCP	%	96		50-150	Pass	
Perfluorooctanoic acid (PFOA)	M19-Au35852	NCP	%	88		50-150	Pass	
Perfluorononanoic acid (PFNA)	M19-Au35852	NCP	%	91		50-150	Pass	
Perfluorodecanoic acid (PFDA)	M19-Au35852	NCP	%	111		50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M19-Au35852	NCP	%	114		50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M19-Au35852	NCP	%	114		50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	M19-Au35852	NCP	%	112		50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M19-Au35852	NCP	%	121		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl sulfonamido substances</b>				Result 1				
Perfluorooctane sulfonamide (FOSA)	M19-Au35852	NCP	%	94		50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M19-Au35852	NCP	%	117		50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M19-Au35852	NCP	%	100		50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M19-Au35852	NCP	%	139		50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M19-Au35852	NCP	%	97		50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M19-Au35852	NCP	%	107		50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M19-Au35852	NCP	%	109		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl sulfonic acids (PFSA)</b>				Result 1				
Perfluorobutanesulfonic acid (PFBS)	M19-Au35852	NCP	%	89		50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M19-Au35852	NCP	%	91		50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M19-Au35852	NCP	%	133		50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M19-Au35852	NCP	%	121		50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M19-Au35852	NCP	%	81		50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M19-Au35852	NCP	%	102		50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M19-Au35852	NCP	%	89		50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M19-Au35852	NCP	%	79		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>				Result 1				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M19-Au35852	NCP	%	109		50-150	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M19-Au35852	NCP	%	90			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M19-Au35852	NCP	%	119			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M19-Au35852	NCP	%	50			50-150	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Heavy Metals</b>				Result 1	Result 2	RPD			
Arsenic	M19-Au34545	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	M19-Au34545	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M19-Au34545	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	M19-Au34545	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	M19-Au34545	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	M19-Au34545	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M19-Au34545	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	M19-Au34545	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
<b>Duplicate</b>									
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M19-Au35519	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
<b>Duplicate</b>									
<b>Perfluoroalkyl sulfonamido substances</b>				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M19-Au35519	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M19-Au35519	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M19-Au35519	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M19-Au35519	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M19-Au35519	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M19-Au35519	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M19-Au35519	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate								
Perfluoroalkyl sulfonic acids (PFSA)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M19-Au35519	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M19-Au35519	NCP	ug/L	< 0.01	< 0.01	<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
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

**Authorised By**

Alena Bounkeua	Analytical Services Manager
Bryan Wilson	Senior Analyst-PFAS (QLD)
Emily Rosenberg	Senior Analyst-Metal (VIC)


**Glenn Jackson**
**General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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## Enviro Sample Vic

---

**From:** Alena Bounkeua  
**Sent:** Tuesday, 27 August 2019 4:47 PM  
**To:** Enviro Sample Vic  
**Subject:** FW: Eurofins Test Results - Report 671060 : Site TOWNSON AND BURDEKIN RD (12511195)  
**Attachments:** 671060\_COC.pdf

Additional analysis please – standard TAT.

Thanks,

Kind Regards,

Alena Bounkeua  
**Eurofins | Environment Testing**  
Phone: +61 2 9900 8414  
Mobile: +61 429 365 410  
Email: [AlenaBounkeua@eurofins.com](mailto:AlenaBounkeua@eurofins.com)

---

**From:** Henry Luo [<mailto:Henry.Luo@ghd.com>]  
**Sent:** Tuesday, 27 August 2019 4:42 PM  
**To:** Alena Bounkeua  
**Cc:** Terry Nham  
**Subject:** FW: Eurofins Test Results - Report 671060 : Site TOWNSON AND BURDEKIN RD (12511195)

EXTERNAL EMAIL\*

Hi Alena

There are three samples of this batch require TCLP analysis. Standard lab turnaround.

D.S 05/08

- 1) QC01: TCLP nickel
- 2) TPO3\_0-0.1, TCLP nickel
- 3) TPO2\_0-0.1, TCLP nickel

Au18724 }  
Au18723 } 989798  
Au18717 }

Please submit the results to Terry and me.

Kind regards

Henry

**From:** [AlenaBounkeua@eurofins.com](mailto:AlenaBounkeua@eurofins.com) <[AlenaBounkeua@eurofins.com](mailto:AlenaBounkeua@eurofins.com)>  
**Sent:** Tuesday, 20 August 2019 6:48 PM  
**To:** Henry Luo <[Henry.Luo@ghd.com](mailto:Henry.Luo@ghd.com)>  
**Cc:** Jake Vickers <[Jake.Vickers@ghd.com](mailto:Jake.Vickers@ghd.com)>; Tom Frederick <[Thomas.Frederick@ghd.com](mailto:Thomas.Frederick@ghd.com)>  
**Subject:** Eurofins Test Results - Report 671060 : Site TOWNSON AND BURDEKIN RD (12511195)

673778  
27/8/19  
4.47pm  
Joanne

Please find attached results for your project in the subject header.

GHD Pty Ltd NSW  
 Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 1254**

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

**Attention:** Henry Luo

**Report** 673778-L  
 Project name TOWNSON AND BURDEKIN RD  
 Project ID 12511195  
 Received Date Aug 27, 2019

Client Sample ID			QC01	TP03_0-0.1	TP02_0-0.1
Sample Matrix			US Leachate	US Leachate	US Leachate
Eurofins Sample No.			M19-Au41253	M19-Au41254	M19-Au41255
Date Sampled			Aug 05, 2019	Aug 05, 2019	Aug 05, 2019
Test/Reference	LOR	Unit			
<b>Heavy Metals</b>					
Nickel	0.01	mg/L	0.08	0.09	0.04
<b>USA Leaching Procedure</b>					
Leachate Fluid <sup>C01</sup>		comment	1.0	1.0	1.0
pH (initial)	0.1	pH Units	6.6	6.7	6.4
pH (Leachate fluid)	0.1	pH Units	5.0	5.0	5.0
pH (off)	0.1	pH Units	5.0	5.0	5.0
pH (USA HCl addition)	0.1	pH Units	1.6	1.7	1.6

**Sample History**

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

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

**Description**

Heavy Metals

**Testing Site**

Melbourne

**Extracted**

Aug 28, 2019

**Holding Time**

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b>	<b>Received:</b> Aug 27, 2019 4:47 PM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 673778	<b>Due:</b> Sep 3, 2019
<b>Project Name:</b> TOWNSON AND BURDEKIN RD	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
<b>Project ID:</b> 12511195	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Nickel	USA Leaching Procedure
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	QC01	Aug 05, 2019		US Leachate	M19-Au41253	X	X
2	TP03_0-0.1	Aug 05, 2019		US Leachate	M19-Au41254	X	X
3	TP02_0-0.1	Aug 05, 2019		US Leachate	M19-Au41255	X	X
<b>Test Counts</b>						3	3

**Internal Quality Control Review and Glossary**
**General**

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Heavy Metals</b>									
Nickel				mg/L	< 0.01		0.01	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>									
<b>Heavy Metals</b>									
Nickel					Result 1				
	M19-Au41255	CP	%	100			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Heavy Metals</b>									
Nickel					Result 1	Result 2	RPD		
	M19-Au41255	CP	mg/L	0.04	0.04	5.0	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
C01	Leachate Fluid Key: 1 - pH 5.0; 2 - pH 2.9; 3 - pH 9.2; 4 - Reagent (DI) water; 5 - Client sample, 6 - other

**Authorised By**

Alena Bounkeua	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)


**Glenn Jackson  
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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Sydney Laboratory  
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Brisbane Laboratory  
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 07 3802 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory  
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 08 9291 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory  
 2 Kingsford Town Close, Oakleigh, VIC 3166  
 03 8664 5000 EnviroSampleVIC@eurofins.com

**Company:** GHD **Project No:** 12511195 **Project Name:** Townson and Burdakin rd

**Address:** Level 15, 133 Castlereagh St Sydney, 2000 **Project Manager:** EDD Format (ESdat, EQUIS, Custom)

**Contact Name:** Henry Luo **Project Manager:** Michelle Rodrigo **Esdat:**

**Phone No:** 0414090002 **Signature:** [Signature]

**Special Directions:** Place all samples on Hold **Signature:** [Signature]

**Purchase Order:** 12511195 **Signature:** [Signature]

**Quote ID No:** - **Signature:** [Signature]

**Analyses:** (Note: Where metals are requested, please specify "Total" or "Filtered" SUITE code must be used to attract SUITE pricing.)  
 asbestos (presence / absence)  
 suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)  
 suite B14 (OCP, OPP)  
 suite B7 (TRH, BTEXN, PAH, 8 metals)  
 8 metals  
 BTEX / TRH C6-C10  
 PFAS (standard LOR, 28 compounds)  
 TCLP PFAS

**Containers:**  
 1L Plastic  
 250mL Plastic  
 125mL Plastic  
 200mL Amber Glass  
 40mL VOA vial  
 500mL PFAS Bottle  
 Jar (Glass or HDPE)  
 Other (Asbestos AS4964, WA Guidelines)

**Turnaround Time (TAT):**  
 Overnight (9am)\*  
 1 Day\*  
 2 Day\*  
 3 Day\*  
 5 Day\*  
 Other ( Hold )  
 \*Surcharges apply

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	asbestos (presence / absence)	suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)	suite B14 (OCP, OPP)	suite B7 (TRH, BTEXN, PAH, 8 metals)	8 metals	BTEX / TRH C6-C10	PFAS (standard LOR, 28 compounds)	TCLP PFAS	Handed over by	Sampler(s)
1	BH13_0-0-2	26/8/19	Soil	x								Terry Nham	Terry Nham
2	BH13_0-3-0.5	26/8/19	Soil		x							Terry Nham	Terry Nham
3	BH13_0-8-1.0	26/8/19	Soil				x					Terry Nham	Terry Nham
4	BH13_1-8-2.0	26/8/19	Soil									Terry Nham	Terry Nham
5	BH13_2-8-3.0	26/8/19	Soil									Terry Nham	Terry Nham
6	BH13_3-8-4.0	26/8/19	Soil									Terry Nham	Terry Nham
7	BH13_4-8-5.0	26/8/19	Soil									Terry Nham	Terry Nham
8	BH13_5-8-6.0	26/8/19	Soil									Terry Nham	Terry Nham
9	BH11_0-0-0.2	27/8/19	Soil	x	x	x				x	x	Terry Nham	Terry Nham
10	FD01_190827	27/8/19	Soil				x			#	#	Terry Nham	Terry Nham
		Total Counts											

**Method of Shipment:**  Courier (#)  Hand Delivered  Postal

**Received By:** [Signature] **Signature:** [Signature] **Date:** 13/08/2019 **Time:** 06:56:25 **Temperature:** 20.5°C

**Received By:** [Signature] **Signature:** [Signature] **Date:** 28/8/19 **Time:** 12:34:19 **Temperature:** 21.5°C



# CHAIN OF CUSTODY RECORD

ASN 50 065 066 521

Sydney Laboratory  
Unit 13 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066  
02 9900 8400 EnviroSampleSW@eurofins.com

Brisbane Laboratory  
Unit 1, 21 Smallwood Pl., Murrumbidgee, QLD 4172  
07 3922 4800 EnviroSampleQLD@eurofins.com

Perth Laboratory  
Unit 2, 51 Leah Highway, Kewdale WA 6105  
08 9251 9900 EnviroSampleWA@eurofins.com

Melbourne Laboratory  
2 Kingston Town Close, Oakleigh, VIC 3186  
03 9594 3000 EnviroSampleVic@eurofins.com

Company: **GHD** Project No: **12511195** Project Manager: **Michelle Rodrigo** Sampler(s): **Terry Nham, Henry Luo**

Address: **Level 15, 133 Castlereagh St Sydney, 2000** Project Name: **Tomnson and Burdekin rd** EDD Format (Est/EQ/US, Custom): **Est/EQ** Handed over by: **Terry Nham**

Contact Name: **Henry Luo** Email for Invoice: **Henry.Luo@ghd.com** Email for Results: **Henry.Luo@ghd.com**

Phone No: **0414090002** Turnaround Time (TAT): **Overnight (9am)\***

Special Directions: **Place all samples on Hold** Container:  1 Day\*  2 Day\*  3 Day\*  5 Day\*  Other ( Hold ) \*Surcharges apply

Purchase Order: **12511195** Analyse: **asbestos (presence / absence)** **suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)** **suite B14 (OCP, OPP)** **suite B7 (TRH, BTEXN, PAH, 8 metals)** **8 metals** **BTEX / TRH C6-C10**

Client Sample ID: **BH11\_0.3-0.5** Sampled Date/Time (dd/mm/yy hh:mm): **27/8/19** Matrix (Soil (S) Water (W)): **Soil**

**1** **BH11\_0.3-0.5** **27/8/19** **Soil** **2** **1**

**2** **BH11\_0.8-1.0** **27/8/19** **Soil** **2** **1**

**3** **BH11\_1.8-2.0** **27/8/19** **Soil** **1** **1**

**4** **RB\_190826** **26/8/19** **Water** **1** **2** **1**

**5** **RB\_190827** **27/8/19** **Water** **1** **2** **1**

**6** **Trip Blank** **27/8/19** **Soil** **1** **1**

**7** **Trip Spike** **27/8/19** **Soil** **1** **1**

**8** **PC01\_0.5-0.8** **26/8/19** **Soil** **X** **X** **1** **1**

**9** **PC01\_1.1** **26/8/19** **Soil** **X** **X** **1** **1**

**10** **PC01\_1.5** **26/8/19** **Soil** **X** **X** **1** **1**

Method of Shipment:  Courier (#)  Hand Delivered  Postal Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: **27/8/19** Time: **13:31** Report No: **613957**

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgmt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgmt Standard Terms and Conditions is available on request. Eurofins Environment, Testing Australia Pty Ltd trading as Eurofins | mgmt

Sydney Laboratory  
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Brisbane Laboratory  
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 07 3902 4800 EnviroSampleQD@eurofins.com

Perth Laboratory  
 Unit 2, 91 Leach Highway, Kewdale, WA, 6105  
 08 9251 9900 EnviroSampleWA@eurofins.com

Melbourne Laboratory  
 2 Kingspan Town Close, Oakleigh, VIC, 3136  
 03 9584 5000 EnviroSampleVIC@eurofins.com

**Company:** GHD  
**Project No:** 12511195  
**Project Name:** Townson and Burdekin rd

**Address:** Level 15, 133 Castlereagh St, Sydney, 2000  
**Project Manager:** EDD Format (Estah, EQUIS, Custom)  
**Esdat:** Michelle Rodrigo

**Contact Name:** Henry Luo  
**Sampler(s):** Terry Nham, Henry Luo  
**Handed over by:** Terry Nham

**Phone No:** 0414090002  
**Email for Invoice:** Henry.Luo@ghd.com  
**Email for Results:** Henry.Luo@ghd.com

**Special Directions:** Place all samples on Hold  
**Turnaround Time (TAT):**  Overnight (9am)\*  1 Day\*  2 Day\*  3 Day\*  5 Day\*  6 Day\*  
 \*Surcharges apply

**Purchase Order:** 12511195  
**Quote ID No:** [Blank]  
**Containers:** 1L Plastic, 250mL Plastic, 125mL Plastic, 200mL Amber Glass, 40mL VOA vial, 500mL PFAS Bottle, Jar (Glass or HDPE), Other (Asbestos AS4964, WA Guidelines)  
**Requirements (Client will be responsible if not met):**  Other ( Hold )

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Soil (S) Water (W))	Analyses	Project Name	Project Manager	Sampler(s)	Handed over by
1	TP01_0.1-0.2	27/8/19	Soil	asbestos (presence / absence)	Townson and Burdekin rd	Michelle Rodrigo	Terry Nham, Henry Luo	Terry Nham
2	DUP_011	27/8/19	Soil	suite B7a (TRH, BTEXN, PAH, phenols, 8 metals)				
3	TP01_0.4-0.5	27/8/19	Soil	suite B14 (OCP, OPP)				
4	TP01_0.9-1.0	26/8/19	Soil	suite B7 (TRH, BTEXN, PAH, 8 metals)				
5	TP04_0.1-0.2	27/8/19	Soil	8 metals				
6	TP04_0.4-0.5	27/8/19	Soil	BTEX / TRH C6-C10				
7	TP04_0.9-1.0	27/8/19	Soil					
8	PC06_0.3-0.5	28/8/19	Soil					
9	PC06_0.8-0.9	28/8/19	Soil					
10	TP07_0.1-0.2	28/8/19	Soil					
Total Counts								

**Method of Shipment:**  Courier (#)  Hand Delivered  Postal  
**Name:** [Blank]  
**Signature:** [Blank]  
**Date:** 27/8/19  
**Time:** 11:11  
**Report No:** 6153457



# CHAIN OF CUSTODY RECORD

ABN 51 005 065 521

Sydney Laboratory  
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2086  
02 9500 8400 EnviroSampleSW@eurofins.com

Brisbane Laboratory  
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Perth Laboratory  
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08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory  
2 Kogarah Town Close, Oakleigh, VIC 3166  
03 8594 5000 EnviroSample@eurofins.com

Company	GHD	Project No	12511195	Project Manager	Michelle Rodrigo	Sampler(s)	Terry Nham, Henry Luo
Address	Level 15, 133 Castlereagh St Sydney, 2000	Project Name	Townson and Burdekin rd	EDD Format (Est'dt, EQUIS, Custom)	Esdat	Handed over by	Terry Nham
Contact Name	Henry Luo	Analyses (Note: Where metals are requested, please specify "Total" or "Filterless") SUITE code must be used to extract SUITE pricing.					
Phone No	0414090002	asbestos (presence / absence) suite B7a (TRH, BTEXN, PAH, phenols, 8 metals) suite B14 (OCP, OPP) suite B7 (TRH, BTEXN, PAH, 8 metals) 8 metals BTEX / TRH C6-C10					
Special Directions	Place all samples on Hold	Turnaround Time (TAT) Requirements (client will be advised if not ticked) <input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 6 Day* <input type="checkbox"/> Other ( Hold ) *Surcharge apply					
Purchase Order	12511195	Containers <input type="checkbox"/> 1L Plastic <input type="checkbox"/> 250mL Plastic <input type="checkbox"/> 125mL Plastic <input type="checkbox"/> 200mL Amber Glass <input type="checkbox"/> 40mL VOA vial <input type="checkbox"/> 500mL PFAS Bottle <input type="checkbox"/> Jar (Glass or HDPE) <input type="checkbox"/> Other (Asbestos AS4964, WA Guidelines)					
Quote ID No		Sample Comments / Dangerous Goods Hazard Warning					

No	Client Sample ID	Sampled Date/Time (dd/mm/yyyy hh:mm)	Matrix (Solid (S) Water (W))							
1	DUP_012	27/8/19	Soil							1
2	TP07_0.2-0.3	27/8/19	Soil	X						1
3	TP07_0.5-0.7	27/8/19	Soil		X					1
4										
5										
6										
7										
8										
9										
10										
Total Counts										2

Method of Shipment	<input checked="" type="checkbox"/> Courier (# )	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name	Signature	Date	Time
Eurofins   mgt	Received By	Signature	Signature	Signature	Date	Time	Report No
Laboratory Use Only	Received By	Signature	Signature	Signature	Date	Time	Report No

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless stated otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins, Environmental Testing Australia Pty Ltd trading as Eurofins | mgt

**GHD Pty Ltd NSW**  
**Level 15, 133 Castlereagh Street**  
**Sydney**  
**NSW 2000**



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 18217**

Accredited for compliance with ISO/IEC 17025–Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

**Attention:** Henry Luo  
**Report** 673957-AID  
**Project Name** TOWNSON AND BURDEKIN RD  
**Project ID** 12511195  
**Received Date** Aug 29, 2019  
**Date Reported** Sep 06, 2019

**Methodology:**

Asbestos Fibre  
 Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

*NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*

Unknown Mineral  
 Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

*NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*

Subsampling Soil  
 Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

*NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*

Bonded asbestos-  
 containing material  
 (ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

*NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*

Limit of Reporting

The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).

The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).

*NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

**Project Name** TOWNSON AND BURDEKIN RD  
**Project ID** 12511195  
**Date Sampled** Aug 26, 2019 to Aug 28, 2019  
**Report** 673957-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH13_0.0-0.2	19-Au42775	Aug 26, 2019	Approximate Sample 150g Sample consisted of: Dark-brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH11_0.0-0.2	19-Au42778	Aug 27, 2019	Approximate Sample 98g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
PC01_0.5-0.8	19-Au42785	Aug 26, 2019	Approximate Sample 161g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP01_0.1-0.2	19-Au42788	Aug 27, 2019	Approximate Sample 177g Sample consisted of: Dark-brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP04_0.1-0.2	19-Au42792	Aug 27, 2019	Approximate Sample 194g Sample consisted of: Dark-brown coarse-grained soil, fragments of asphalt and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
PC06_0.3-0.5	19-Au42794	Aug 28, 2019	Approximate Sample 51g Sample consisted of: Grey coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP07_0.1-0.2	19-Au42796	Aug 28, 2019	Approximate Sample 129g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP07_0.2-0.3	19-Au42797	Aug 27, 2019	Approximate Sample 159g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.



**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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>
Asbestos - LTM-ASB-8020	Sydney	Aug 29, 2019	Indefinite

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 29, 2019 10:33 AM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 673957	<b>Due:</b> Sep 5, 2019
	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X						X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>								X							X
<b>Perth Laboratory - NATA Site # 23736</b>															
<b>External Laboratory</b>															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	BH13_0.0-0.2	Aug 26, 2019		Soil	S19-Au42775	X			X	X					
2	BH13_0.3-0.5	Aug 26, 2019		Soil	S19-Au42776					X			X		
3	BH13_0.8-1.0	Aug 26, 2019		Soil	S19-Au42777					X	X				
4	BH11_0.0-0.2	Aug 27, 2019		Soil	S19-Au42778	X			X	X			X		X
5	FD01_190827	Aug 27, 2019		Soil	S19-Au42779					X	X				
6	BH11_0.8-1.0	Aug 27, 2019		Soil	S19-Au42780					X	X				
7	RB_190826	Aug 26, 2019		Water	S19-Au42781				X						
8	TRIP SPIKE	Aug 27, 2019		Soil	S19-Au42784									X	
9	PC01_0.5-0.8	Aug 26, 2019		Soil	S19-Au42785	X				X			X		

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 29, 2019 10:33 AM
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	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail			Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>				X		X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>			X						X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>					X							X
<b>Perth Laboratory - NATA Site # 23736</b>												
10	PC01_1.1	Aug 26, 2019						X	X			
11	PC01_1.5	Aug 26, 2019						X	X			
12	TP01_0.1-0.2	Aug 27, 2019	X				X	X		X		
13	DUP_011	Aug 27, 2019						X	X			
14	TP01_0.4-0.5	Aug 27, 2019						X	X			
15	TP01_0.9-1.0	Aug 27, 2019						X	X			
16	TP04_0.1-0.2	Aug 27, 2019	X				X	X		X		
17	TP04_0.9-1.0	Aug 27, 2019						X	X			
18	PC06_0.3-0.5	Aug 28, 2019	X					X		X		
19	PC06_0.8-0.9	Aug 28, 2019						X	X			
20	TP07_0.1-0.2	Aug 28, 2019	X				X	X		X		
21	TP07_0.2-0.3	Aug 27, 2019	X									

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	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail			Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>				X		X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>			X						X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>					X							X
<b>Perth Laboratory - NATA Site # 23736</b>												
22	TP07_0.5-0.7	Aug 27, 2019						X	X			
23	BH11_0.0-0.2	Aug 27, 2019			X							X
24	BH13_1.8-2.0	Aug 26, 2019		X								
25	BH13_2.8-3.0	Aug 26, 2019		X								
26	BH13_3.8-4.0	Aug 26, 2019		X								
27	BH13_4.8-5.0	Aug 26, 2019		X								
28	BH13_5.8-6.0	Aug 26, 2019		X								
29	BH11_0.3-0.5	Aug 27, 2019		X								
30	BH11_1.8-2.0	Aug 27, 2019		X								
31	RB_190827	Aug 27, 2019		X								
32	TP04_0.4-0.5	Aug 27, 2019		X								
33	DUP_012	Aug 27, 2019		X								

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 29, 2019 10:33 AM
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<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail	Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271		X		X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217	X						X	X	X	
Brisbane Laboratory - NATA Site # 20794			X							X
Perth Laboratory - NATA Site # 23736										
<b>Test Counts</b>	8	10	1	1	5	19	11	7	1	2

**Internal Quality Control Review and Glossary**
**General**

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

**Holding Times**

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

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

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

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

**Units**

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

**Terms**

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

**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
N/A	Not applicable

**Asbestos Counter/Identifier:**

Chamath JHM Annakkage      Senior Analyst-Asbestos (NSW)

**Authorised by:**

Sayed Abu      Senior Analyst-Asbestos (NSW)



**Glenn Jackson**  
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

GHD Pty Ltd NSW  
 Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000



NATA Accredited  
 Accreditation Number 1261  
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

Attention: **Henry Luo**

Report **673957-L**  
 Project name **TOWNSON AND BURDEKIN RD**  
 Project ID **12511195**  
 Received Date **Aug 29, 2019**

<b>Client Sample ID</b>			<b>BH11_0.0-0.2</b>
<b>Sample Matrix</b>			<b>US Leachate</b>
<b>Eurofins Sample No.</b>			<b>S19-Au42802</b>
<b>Date Sampled</b>			<b>Aug 27, 2019</b>
Test/Reference	LOR	Unit	
<b>USA Leaching Procedure</b>			
Leachate Fluid <sup>C01</sup>		comment	1.0
pH (initial)	0.1	pH Units	5.0
pH (Leachate fluid)	0.1	pH Units	5.0
pH (off)	0.1	pH Units	5.3
pH (USA HCl addition)	0.1	pH Units	1.1
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>			
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTTrDA) <sup>N15</sup>	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTTeDA) <sup>N11</sup>	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	61
13C5-PFPeA (surr.)	1	%	67
13C5-PFHxA (surr.)	1	%	69
13C4-PFHpA (surr.)	1	%	79
13C8-PFOA (surr.)	1	%	83
13C5-PFNA (surr.)	1	%	74
13C6-PFDA (surr.)	1	%	101
13C2-PFUnDA (surr.)	1	%	84
13C2-PFDoDA (surr.)	1	%	70
13C2-PFTTeDA (surr.)	1	%	75
<b>Perfluoroalkyl sulfonamido substances</b>			
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05



<b>Client Sample ID</b>			<b>BH11_0.0-0.2</b>
<b>Sample Matrix</b>			<b>US Leachate</b>
<b>Eurofins Sample No.</b>			<b>S19-Au42802</b>
<b>Date Sampled</b>			<b>Aug 27, 2019</b>
Test/Reference	LOR	Unit	
<b>Perfluoroalkyl sulfonamido substances</b>			
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	70
D3-N-MeFOSA (surr.)	1	%	59
D5-N-EtFOSA (surr.)	1	%	82
D7-N-MeFOSE (surr.)	1	%	49
D9-N-EtFOSE (surr.)	1	%	55
D5-N-EtFOSAA (surr.)	1	%	55
D3-N-MeFOSAA (surr.)	1	%	51
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>			
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	77
18O2-PFHxS (surr.)	1	%	79
13C8-PFOS (surr.)	1	%	76
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	54
13C2-6:2 FTSA (surr.)	1	%	69
13C2-8:2 FTSA (surr.)	1	%	59
<b>PFASs Summations</b>			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1

**Sample History**

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

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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>
USA Leaching Procedure - Method: LTM-GEN-7010 Leaching Procedure for Soils & Solid Wastes	Brisbane	Aug 30, 2019	14 Days
<b>Per- and Polyfluoroalkyl Substances (PFASs)</b>			
Perfluoroalkyl carboxylic acids (PFCAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 30, 2019	14 Days
Perfluoroalkyl sulfonamido substances - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 30, 2019	14 Days
Perfluoroalkyl sulfonic acids (PFASs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 30, 2019	14 Days
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 30, 2019	14 Days

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 29, 2019 10:33 AM
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	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X						X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>								X							X
<b>Perth Laboratory - NATA Site # 23736</b>															
<b>External Laboratory</b>															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	BH13_0.0-0.2	Aug 26, 2019		Soil	S19-Au42775	X			X	X					
2	BH13_0.3-0.5	Aug 26, 2019		Soil	S19-Au42776					X		X			
3	BH13_0.8-1.0	Aug 26, 2019		Soil	S19-Au42777					X	X				
4	BH11_0.0-0.2	Aug 27, 2019		Soil	S19-Au42778	X			X	X		X		X	
5	FD01_190827	Aug 27, 2019		Soil	S19-Au42779					X	X				
6	BH11_0.8-1.0	Aug 27, 2019		Soil	S19-Au42780					X	X				
7	RB_190826	Aug 26, 2019		Water	S19-Au42781				X						
8	TRIP BLANK	Aug 27, 2019		Soil	S19-Au42782									X	
9	SPIKE LAB	Aug 27, 2019		Soil	S19-Au42783									X	

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 29, 2019 10:33 AM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	673957	<b>Due:</b>	Sep 5, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail			Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>				X		X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>			X						X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>					X							X
<b>Perth Laboratory - NATA Site # 23736</b>												
10	TRIP SPIKE	Aug 27, 2019										X
11	PC01_0.5-0.8	Aug 26, 2019						X		X		
12	PC01_1.1	Aug 26, 2019						X	X			
13	PC01_1.5	Aug 26, 2019						X	X			
14	TP01_0.1-0.2	Aug 27, 2019					X	X		X		
15	DUP_011	Aug 27, 2019						X	X			
16	TP01_0.4-0.5	Aug 27, 2019						X	X			
17	TP01_0.9-1.0	Aug 27, 2019						X	X			
18	TP04_0.1-0.2	Aug 27, 2019					X	X		X		
19	TP04_0.9-1.0	Aug 27, 2019						X	X			
20	PC06_0.3-0.5	Aug 28, 2019						X		X		
21	PC06_0.8-0.9	Aug 28, 2019						X	X			

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 29, 2019 10:33 AM
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<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X						X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>								X							X
<b>Perth Laboratory - NATA Site # 23736</b>															
22	TP07_0.1-0.2	Aug 28, 2019		Soil	S19-Au42796	X			X	X			X		
23	TP07_0.2-0.3	Aug 27, 2019		Soil	S19-Au42797	X									
24	TP07_0.5-0.7	Aug 27, 2019		Soil	S19-Au42798					X	X				
25	BH11_0.0-0.2	Aug 27, 2019		US Leachate	S19-Au42802			X							X
26	BH13_1.8-2.0	Aug 26, 2019		Soil	S19-Au42806		X								
27	BH13_2.8-3.0	Aug 26, 2019		Soil	S19-Au42807		X								
28	BH13_3.8-4.0	Aug 26, 2019		Soil	S19-Au42808		X								
29	BH13_4.8-5.0	Aug 26, 2019		Soil	S19-Au42809		X								
30	BH13_5.8-6.0	Aug 26, 2019		Soil	S19-Au42810		X								
31	BH11_0.3-0.5	Aug 27, 2019		Soil	S19-Au42811		X								
32	BH11_1.8-2.0	Aug 27, 2019		Soil	S19-Au42812		X								
33	RB_190827	Aug 27, 2019		Water	S19-Au42813		X								

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 29, 2019 10:33 AM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 673957	<b>Due:</b> Sep 5, 2019
	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X						X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>								X							X
<b>Perth Laboratory - NATA Site # 23736</b>															
34	TP04_0.4-0.5	Aug 27, 2019		Soil	S19-Au42814		X								
35	DUP_012	Aug 27, 2019		Soil	S19-Au42815		X								
<b>Test Counts</b>						8	10	1	1	5	19	11	7	3	2

**Internal Quality Control Review and Glossary**
**General**

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Perfluoroalkyl carboxylic acids (PFCAs)</b>									
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass			
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass			
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass			
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass			
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass			
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass			
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass			
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass			
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass			
Perfluorotridecanoic acid (PFTTrDA)	ug/L	< 0.01			0.01	Pass			
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass			
<b>Method Blank</b>									
<b>Perfluoroalkyl sulfonamido substances</b>									
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass			
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass			
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass			
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05			0.05	Pass			
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05			0.05	Pass			
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass			
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass			
<b>Method Blank</b>									
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>									
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass			
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass			
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass			
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass			
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass			
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass			
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass			
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass			
<b>Method Blank</b>									
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>									
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass			
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass			
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass			
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B19-Au42969	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B19-Au42969	NCP	ug/L	0.01	0.01	5.0	30%	Pass	
Perfluorononanoic acid (PFNA)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1	Result 2	RPD			
Perfluorododecanoic acid (PFDoDA)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
<b>Duplicate</b>									
<b>Perfluoroalkyl sulfonamido substances</b>				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B19-Au42969	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B19-Au42969	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B19-Au42969	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B19-Au42969	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B19-Au42969	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B19-Au42969	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B19-Au42969	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
<b>Duplicate</b>									
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B19-Au42969	NCP	ug/L	0.03	0.03	5.0	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
<b>Duplicate</b>									
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B19-Au42969	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B19-Au42969	NCP	ug/L	< 0.01	< 0.01	<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
C01	Leachate Fluid Key: 1 - pH 5.0; 2 - pH 2.9; 3 - pH 9.2; 4 - Reagent (DI) water; 5 - Client sample, 6 - other
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

**Authorised By**

Alena Bounkeua	Analytical Services Manager
Bryan Wilson	Senior Analyst-PFAS (QLD)


**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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GHD Pty Ltd NSW  
 Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000



NATA Accredited  
 Accreditation Number 1261  
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

Attention: **Henry Luo**

Report **673957-S**  
 Project name **TOWNSON AND BURDEKIN RD**  
 Project ID **12511195**  
 Received Date **Aug 29, 2019**

Client Sample ID			BH13_0.0-0.2	BH13_0.3-0.5	BH13_0.8-1.0	BH11_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42775	S19-Au42776	S19-Au42777	S19-Au42778
Date Sampled			Aug 26, 2019	Aug 26, 2019	Aug 26, 2019	Aug 27, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	-	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	-	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	-	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	-	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	-	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	< 100	< 100
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	-	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	-	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	-	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	-	< 50	< 50	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	110	101	136
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5

Client Sample ID			BH13_0.0-0.2	BH13_0.3-0.5	BH13_0.8-1.0	BH11_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42775	S19-Au42776	S19-Au42777	S19-Au42778
Date Sampled			Aug 26, 2019	Aug 26, 2019	Aug 26, 2019	Aug 27, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Dibenz(a,h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	68	72	106
p-Terphenyl-d14 (surr.)	1	%	-	68	72	68
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Dieldrin	0.05	mg/kg	0.16	-	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Toxaphene	1	mg/kg	< 1	-	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	0.16	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	0.16	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	< 0.1
Dibutylchloroendate (surr.)	1	%	94	-	-	94
Tetrachloro-m-xylene (surr.)	1	%	115	-	-	117
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Bolstar	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Coumaphos	2	mg/kg	< 2	-	-	< 2
Demeton-S	0.2	mg/kg	< 0.2	-	-	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	-	-	< 0.2
Diazinon	0.2	mg/kg	< 0.2	-	-	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	-	-	< 0.2

Client Sample ID			BH13_0.0-0.2	BH13_0.3-0.5	BH13_0.8-1.0	BH11_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42775	S19-Au42776	S19-Au42777	S19-Au42778
Date Sampled			Aug 26, 2019	Aug 26, 2019	Aug 26, 2019	Aug 27, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Dimethoate	0.2	mg/kg	< 0.2	-	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	-	-	< 0.2
EPN	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethion	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Malathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Merphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Monocrotophos	2	mg/kg	< 2	-	-	< 2
Naled	0.2	mg/kg	< 0.2	-	-	< 0.2
Omethoate	2	mg/kg	< 2	-	-	< 2
Phorate	0.2	mg/kg	< 0.2	-	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	-	-	< 0.2
Ronnel	0.2	mg/kg	< 0.2	-	-	< 0.2
Terbufos	0.2	mg/kg	< 0.2	-	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	-	-	< 0.2
Triphenylphosphate (surr.)	1	%	108	-	-	104
<b>Phenols (Halogenated)</b>						
2-Chlorophenol	0.5	mg/kg	-	< 0.5	-	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	-	< 1	-	< 1
2,4,6-Trichlorophenol	1	mg/kg	-	< 1	-	< 1
2,6-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	-	< 1	-	< 1
Pentachlorophenol	1	mg/kg	-	< 1	-	< 1
Tetrachlorophenols - Total	10	mg/kg	-	< 10	-	< 10
Total Halogenated Phenol*	1	mg/kg	-	< 1	-	< 1
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	-	< 20	-	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	-	< 5	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	< 0.2
2-Nitrophenol	1.0	mg/kg	-	< 1	-	< 1
2,4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	< 0.5
2,4-Dinitrophenol	5	mg/kg	-	< 5	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	< 0.4
4-Nitrophenol	5	mg/kg	-	< 5	-	< 5
Dinoseb	20	mg/kg	-	< 20	-	< 20
Phenol	0.5	mg/kg	-	< 0.5	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	< 20
Phenol-d6 (surr.)	1	%	-	77	-	71

Client Sample ID			BH13_0.0-0.2	BH13_0.3-0.5	BH13_0.8-1.0	BH11_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42775	S19-Au42776	S19-Au42777	S19-Au42778
Date Sampled			Aug 26, 2019	Aug 26, 2019	Aug 26, 2019	Aug 27, 2019
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	-	13	13	10
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	-	25	17	23
Copper	5	mg/kg	-	25	25	35
Lead	5	mg/kg	-	20	16	26
Mercury	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	-	7.8	7.0	30
Zinc	5	mg/kg	-	51	42	84
% Moisture	1	%	20	17	9.8	6.5
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorononanoic acid (PFNA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorotridecanoic acid (PFTrDA) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
13C4-PFBA (surr.)	1	%	-	-	-	110
13C5-PFPeA (surr.)	1	%	-	-	-	104
13C5-PFHxA (surr.)	1	%	-	-	-	111
13C4-PFHpA (surr.)	1	%	-	-	-	107
13C8-PFOA (surr.)	1	%	-	-	-	135
13C5-PFNA (surr.)	1	%	-	-	-	145
13C6-PFDA (surr.)	1	%	-	-	-	173
13C2-PFUnDA (surr.)	1	%	-	-	-	170
13C2-PFDoDA (surr.)	1	%	-	-	-	151
13C2-PFTeDA (surr.)	1	%	-	-	-	141
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	10	ug/kg	-	-	-	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	10	ug/kg	-	-	-	< 10
13C8-FOSA (surr.)	1	%	-	-	-	126
D3-N-MeFOSA (surr.)	1	%	-	-	-	90
D5-N-EtFOSA (surr.)	1	%	-	-	-	86
D7-N-MeFOSE (surr.)	1	%	-	-	-	109
D9-N-EtFOSE (surr.)	1	%	-	-	-	114
D5-N-EtFOSAA (surr.)	1	%	-	-	-	155
D3-N-MeFOSAA (surr.)	1	%	-	-	-	157

Client Sample ID			BH13_0.0-0.2	BH13_0.3-0.5	BH13_0.8-1.0	BH11_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42775	S19-Au42776	S19-Au42777	S19-Au42778
Date Sampled			Aug 26, 2019	Aug 26, 2019	Aug 26, 2019	Aug 27, 2019
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
13C3-PFBS (surr.)	1	%	-	-	-	130
18O2-PFHxS (surr.)	1	%	-	-	-	126
13C8-PFOS (surr.)	1	%	-	-	-	151
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	10	ug/kg	-	-	-	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	5	ug/kg	-	-	-	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	5	ug/kg	-	-	-	< 5
13C2-4:2 FTSA (surr.)	1	%	-	-	-	79
13C2-6:2 FTSA (surr.)	1	%	-	-	-	85
13C2-8:2 FTSA (surr.)	1	%	-	-	-	111
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	5	ug/kg	-	-	-	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	-	-	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	-	-	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	-	-	< 10
Sum of PFASs (n=30)*	50	ug/kg	-	-	-	< 50

Client Sample ID			FD01_190827	BH11_0.8-1.0	R20 <sup>TRIP SPIKE</sup>	PC01_0.5-0.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42779	S19-Au42780	S19-Au42784	S19-Au42785
Date Sampled			Aug 27, 2019	Aug 27, 2019	Aug 27, 2019	Aug 26, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	120	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	110	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	-	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	-	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	-	< 100
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	100	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	-	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	-	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	-	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	-	< 50

Client Sample ID			FD01_190827	BH11_0.8-1.0	R20TRIP SPIKE	PC01_0.5-0.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42779	S19-Au42780	S19-Au42784	S19-Au42785
Date Sampled			Aug 27, 2019	Aug 27, 2019	Aug 27, 2019	Aug 26, 2019
Test/Reference	LOR	Unit				
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	110	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	110	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	130	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	130	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	130	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	130	< 0.3
4-Bromofluorobenzene (surr.)	1	%	122	120	66	126
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	71	70	-	68
p-Terphenyl-d14 (surr.)	1	%	80	79	-	74
<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-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	-	< 0.2
2-Nitrophenol	1.0	mg/kg	-	-	-	< 1
2,4-Dimethylphenol	0.5	mg/kg	-	-	-	< 0.5
2,4-Dinitrophenol	5	mg/kg	-	-	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	-	< 0.4
4-Nitrophenol	5	mg/kg	-	-	-	< 5



Client Sample ID			FD01_190827	BH11_0.8-1.0	R20TRIP SPIKE	PC01_0.5-0.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42779	S19-Au42780	S19-Au42784	S19-Au42785
Date Sampled			Aug 27, 2019	Aug 27, 2019	Aug 27, 2019	Aug 26, 2019
Test/Reference	LOR	Unit				
<b>Phenols (non-Halogenated)</b>						
Dinoseb	20	mg/kg	-	-	-	< 20
Phenol	0.5	mg/kg	-	-	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	-	-	-	< 20
Phenol-d6 (surr.)	1	%	-	-	-	77
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	11	6.4	-	2.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
Chromium	5	mg/kg	20	13	-	7.6
Copper	5	mg/kg	35	29	-	6.2
Lead	5	mg/kg	26	14	-	5.9
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Nickel	5	mg/kg	27	7.9	-	< 5
Zinc	5	mg/kg	84	37	-	11
% Moisture	1	%	6.6	15	-	11

Client Sample ID			PC01_1.1	PC01_1.5	TP01_0.1-0.2	DUP_011
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42786	S19-Au42787	S19-Au42788	S19-Au42789
Date Sampled			Aug 26, 2019	Aug 26, 2019	Aug 27, 2019	Aug 27, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	110	< 100	660	730
TRH >C34-C40	100	mg/kg	120	< 100	350	410
TRH >C10-C40 (total)*	100	mg/kg	230	< 100	1010	1140
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	340	380
TRH C29-C36	50	mg/kg	110	< 50	450	520
TRH C10-C36 (Total)	50	mg/kg	110	< 50	790	900
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	140	110	119	112

Client Sample ID			PC01_1.1	PC01_1.5	TP01_0.1-0.2	DUP_011
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42786	S19-Au42787	S19-Au42788	S19-Au42789
Date Sampled			Aug 26, 2019	Aug 26, 2019	Aug 27, 2019	Aug 27, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	0.5	0.6
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	1	0.6
2-Fluorobiphenyl (surr.)	1	%	72	67	77	76
p-Terphenyl-d14 (surr.)	1	%	76	66	63	70
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4,4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.05	mg/kg	-	-	< 0.05	-
Toxaphene	1	mg/kg	-	-	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchloroendate (surr.)	1	%	-	-	64	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	80	-

Client Sample ID			PC01_1.1	PC01_1.5	TP01_0.1-0.2	DUP_011
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42786	S19-Au42787	S19-Au42788	S19-Au42789
Date Sampled			Aug 26, 2019	Aug 26, 2019	Aug 27, 2019	Aug 27, 2019
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	%	-	-	63	-
<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	-

Client Sample ID			PC01_1.1	PC01_1.5	TP01_0.1-0.2	DUP_011
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42786	S19-Au42787	S19-Au42788	S19-Au42789
Date Sampled			Aug 26, 2019	Aug 26, 2019	Aug 27, 2019	Aug 27, 2019
Test/Reference	LOR	Unit				
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	-	< 20	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	-	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	< 0.2	-
2-Nitrophenol	1.0	mg/kg	-	-	< 1	-
2.4-Dimethylphenol	0.5	mg/kg	-	-	< 0.5	-
2.4-Dinitrophenol	5	mg/kg	-	-	< 5	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	< 0.4	-
4-Nitrophenol	5	mg/kg	-	-	< 5	-
Dinoseb	20	mg/kg	-	-	< 20	-
Phenol	0.5	mg/kg	-	-	< 0.5	-
Total Non-Halogenated Phenol*	20	mg/kg	-	-	< 20	-
Phenol-d6 (surr.)	1	%	-	-	58	-
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	2.7	7.7	6.7	7.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	9.4	6.3	43	41
Copper	5	mg/kg	24	14	67	57
Lead	5	mg/kg	11	8.2	16	16
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	11	5.0	35	43
Zinc	5	mg/kg	24	18	100	77
% Moisture	1	%	14	14	4.3	4.5

Client Sample ID			TP01_0.4-0.5	TP01_0.9-1.0	TP04_0.1-0.2	TP04_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42790	S19-Au42791	S19-Au42792	S19-Au42793
Date Sampled			Aug 27, 2019	Aug 27, 2019	Aug 27, 2019	Aug 27, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	250	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	140	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	390	< 100
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	120	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	200	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	320	< 50

Client Sample ID			TP01_0.4-0.5	TP01_0.9-1.0	TP04_0.1-0.2	TP04_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42790	S19-Au42791	S19-Au42792	S19-Au42793
Date Sampled			Aug 27, 2019	Aug 27, 2019	Aug 27, 2019	Aug 27, 2019
Test/Reference	LOR	Unit				
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	93	111	99	106
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	79	70	72	63
p-Terphenyl-d14 (surr.)	1	%	76	69	53	60
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-

Client Sample ID			TP01_0.4-0.5	TP01_0.9-1.0	TP04_0.1-0.2	TP04_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42790	S19-Au42791	S19-Au42792	S19-Au42793
Date Sampled			Aug 27, 2019	Aug 27, 2019	Aug 27, 2019	Aug 27, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.05	mg/kg	-	-	< 0.05	-
Toxaphene	1	mg/kg	-	-	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchloroendate (surr.)	1	%	-	-	76	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	91	-
<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	%	-	-	65	-

Client Sample ID			TP01_0.4-0.5	TP01_0.9-1.0	TP04_0.1-0.2	TP04_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42790	S19-Au42791	S19-Au42792	S19-Au42793
Date Sampled			Aug 27, 2019	Aug 27, 2019	Aug 27, 2019	Aug 27, 2019
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-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	< 0.2	-
2-Nitrophenol	1.0	mg/kg	-	-	< 1	-
2,4-Dimethylphenol	0.5	mg/kg	-	-	< 0.5	-
2,4-Dinitrophenol	5	mg/kg	-	-	< 5	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	< 0.4	-
4-Nitrophenol	5	mg/kg	-	-	< 5	-
Dinoseb	20	mg/kg	-	-	< 20	-
Phenol	0.5	mg/kg	-	-	< 0.5	-
Total Non-Halogenated Phenol*	20	mg/kg	-	-	< 20	-
Phenol-d6 (surr.)	1	%	-	-	33	-
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	13	3.6	4.5	13
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	35	19	25	34
Copper	5	mg/kg	20	12	52	24
Lead	5	mg/kg	21	23	13	18
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	18	6.7	32	6.9
Zinc	5	mg/kg	38	16	70	28
% Moisture	1	%	8.2	15	3.8	17

Client Sample ID			PC06_0.3-0.5	PC06_0.8-0.9	TP07_0.1-0.2	TP07_0.5-0.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42794	S19-Au42795	S19-Au42796	S19-Au42798
Date Sampled			Aug 28, 2019	Aug 28, 2019	Aug 28, 2019	Aug 27, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			PC06_0.3-0.5	PC06_0.8-0.9	TP07_0.1-0.2	TP07_0.5-0.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42794	S19-Au42795	S19-Au42796	S19-Au42798
Date Sampled			Aug 28, 2019	Aug 28, 2019	Aug 28, 2019	Aug 27, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	64	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	64	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	110	93	103	106
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	80	65	75	76
p-Terphenyl-d14 (surr.)	1	%	67	53	95	73
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4,4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-



Client Sample ID			PC06_0.3-0.5	PC06_0.8-0.9	TP07_0.1-0.2	TP07_0.5-0.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42794	S19-Au42795	S19-Au42796	S19-Au42798
Date Sampled			Aug 28, 2019	Aug 28, 2019	Aug 28, 2019	Aug 27, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.05	mg/kg	-	-	< 0.05	-
Toxaphene	1	mg/kg	-	-	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchloroendate (surr.)	1	%	-	-	54	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	71	-
<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	-

Client Sample ID			PC06_0.3-0.5	PC06_0.8-0.9	TP07_0.1-0.2	TP07_0.5-0.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au42794	S19-Au42795	S19-Au42796	S19-Au42798
Date Sampled			Aug 28, 2019	Aug 28, 2019	Aug 28, 2019	Aug 27, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Trichloronate	0.2	mg/kg	-	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	-	-	82	-
<b>Phenols (Halogenated)</b>						
2-Chlorophenol	0.5	mg/kg	< 0.5	-	< 0.5	-
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	-	< 0.5	-
2,4,5-Trichlorophenol	1	mg/kg	< 1	-	< 1	-
2,4,6-Trichlorophenol	1	mg/kg	< 1	-	< 1	-
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	-	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	-	< 1	-
Pentachlorophenol	1	mg/kg	< 1	-	< 1	-
Tetrachlorophenols - Total	10	mg/kg	< 10	-	< 10	-
Total Halogenated Phenol*	1	mg/kg	< 1	-	< 1	-
<b>Phenols (non-Halogenated)</b>						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	-	< 20	-
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	-	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	< 0.2	-
2-Nitrophenol	1.0	mg/kg	< 1	-	< 1	-
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	-	< 0.5	-
2,4-Dinitrophenol	5	mg/kg	< 5	-	< 5	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 1	-	< 0.4	-
4-Nitrophenol	5	mg/kg	< 5	-	< 5	-
Dinoseb	20	mg/kg	< 20	-	< 20	-
Phenol	0.5	mg/kg	< 0.5	-	< 0.5	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	< 20	-
Phenol-d6 (surr.)	1	%	100	-	58	-
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	7.9	17	5.1	12
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	15	28	17	29
Copper	5	mg/kg	43	29	98	38
Lead	5	mg/kg	23	24	13	23
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	25	18	12	15
Zinc	5	mg/kg	100	64	110	59
<b>% Moisture</b>						
	1	%	6.3	14	4.7	28

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Sep 04, 2019	14 Days
Total Recoverable Hydrocarbons - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Sep 04, 2019	14 Days
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Sep 04, 2019	14 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Sep 04, 2019	14 Days
<b>Eurofins   mgt Suite B7A</b>			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Sep 04, 2019	
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Sep 04, 2019	14 Days
Phenols (Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Sep 04, 2019	14 Days
Phenols (non-Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Sep 04, 2019	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Sep 04, 2019	180 Days
<b>Eurofins   mgt Suite B14</b>			
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)	Melbourne	Sep 03, 2019	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8081)	Melbourne	Sep 03, 2019	14 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Melbourne	Aug 29, 2019	14 Days
<b>Per- and Polyfluoroalkyl Substances (PFASs)</b>			
Perfluoroalkyl carboxylic acids (PFCAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 30, 2019	180 Days
Perfluoroalkyl sulfonamido substances - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 30, 2019	180 Days
Perfluoroalkyl sulfonic acids (PFSAAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 30, 2019	180 Days
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Aug 30, 2019	180 Days

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 29, 2019 10:33 AM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 673957	<b>Due:</b> Sep 5, 2019
	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X						X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>								X							X
<b>Perth Laboratory - NATA Site # 23736</b>															
<b>External Laboratory</b>															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	BH13_0.0-0.2	Aug 26, 2019		Soil	S19-Au42775	X			X	X					
2	BH13_0.3-0.5	Aug 26, 2019		Soil	S19-Au42776					X		X			
3	BH13_0.8-1.0	Aug 26, 2019		Soil	S19-Au42777					X	X				
4	BH11_0.0-0.2	Aug 27, 2019		Soil	S19-Au42778	X			X	X		X		X	
5	FD01_190827	Aug 27, 2019		Soil	S19-Au42779					X	X				
6	BH11_0.8-1.0	Aug 27, 2019		Soil	S19-Au42780					X	X				
7	RB_190826	Aug 26, 2019		Water	S19-Au42781				X						
8	TRIP BLANK	Aug 27, 2019		Soil	S19-Au42782									X	
9	SPIKE LAB	Aug 27, 2019		Soil	S19-Au42783									X	

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 29, 2019 10:33 AM
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	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail			Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>				X		X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>			X						X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>					X							X
<b>Perth Laboratory - NATA Site # 23736</b>												
10	TRIP SPIKE	Aug 27, 2019										X
11	PC01_0.5-0.8	Aug 26, 2019						X		X		
12	PC01_1.1	Aug 26, 2019						X	X			
13	PC01_1.5	Aug 26, 2019						X	X			
14	TP01_0.1-0.2	Aug 27, 2019					X	X		X		
15	DUP_011	Aug 27, 2019						X	X			
16	TP01_0.4-0.5	Aug 27, 2019						X	X			
17	TP01_0.9-1.0	Aug 27, 2019						X	X			
18	TP04_0.1-0.2	Aug 27, 2019					X	X		X		
19	TP04_0.9-1.0	Aug 27, 2019						X	X			
20	PC06_0.3-0.5	Aug 28, 2019						X		X		
21	PC06_0.8-0.9	Aug 28, 2019						X	X			

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 29, 2019 10:33 AM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 673957	<b>Due:</b> Sep 5, 2019
	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X						X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>								X							X
<b>Perth Laboratory - NATA Site # 23736</b>															
22	TP07_0.1-0.2	Aug 28, 2019		Soil	S19-Au42796	X			X	X		X			
23	TP07_0.2-0.3	Aug 27, 2019		Soil	S19-Au42797	X									
24	TP07_0.5-0.7	Aug 27, 2019		Soil	S19-Au42798					X	X				
25	BH11_0.0-0.2	Aug 27, 2019		US Leachate	S19-Au42802			X							X
26	BH13_1.8-2.0	Aug 26, 2019		Soil	S19-Au42806		X								
27	BH13_2.8-3.0	Aug 26, 2019		Soil	S19-Au42807		X								
28	BH13_3.8-4.0	Aug 26, 2019		Soil	S19-Au42808		X								
29	BH13_4.8-5.0	Aug 26, 2019		Soil	S19-Au42809		X								
30	BH13_5.8-6.0	Aug 26, 2019		Soil	S19-Au42810		X								
31	BH11_0.3-0.5	Aug 27, 2019		Soil	S19-Au42811		X								
32	BH11_1.8-2.0	Aug 27, 2019		Soil	S19-Au42812		X								
33	RB_190827	Aug 27, 2019		Water	S19-Au42813		X								

<b>Company Name:</b>	GHD Pty Ltd NSW	<b>Order No.:</b>	12511195	<b>Received:</b>	Aug 29, 2019 10:33 AM
<b>Address:</b>	Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b>	673957	<b>Due:</b>	Sep 5, 2019
<b>Project Name:</b>	TOWNSON AND BURDEKIN RD	<b>Phone:</b>	02 9239 7100	<b>Priority:</b>	5 Day
<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X						X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>								X							X
<b>Perth Laboratory - NATA Site # 23736</b>															
34	TP04_0.4-0.5	Aug 27, 2019		Soil	S19-Au42814		X								
35	DUP_012	Aug 27, 2019		Soil	S19-Au42815		X								
<b>Test Counts</b>						8	10	1	1	5	19	11	7	3	2

**Internal Quality Control Review and Glossary**
**General**

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	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>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</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	
<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	
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>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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	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	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	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>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>							
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTriDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
<b>Method Blank</b>							
<b>Perfluoroalkyl sulfonamido substances</b>							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
<b>Method Blank</b>							
<b>Perfluoroalkyl sulfonic acids (PFSAs)</b>							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
<b>Method Blank</b>							
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
<b>LCS - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
Naphthalene	%	96			70-130	Pass	
TRH C6-C10	%	107			70-130	Pass	
TRH >C10-C16	%	74			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>							
TRH C6-C9	%	112			70-130	Pass	
TRH C10-C14	%	78			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>BTEX</b>							
Benzene	%	110			70-130	Pass	
Toluene	%	120			70-130	Pass	
Ethylbenzene	%	121			70-130	Pass	
m&p-Xylenes	%	119			70-130	Pass	
Xylenes - Total	%	120			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Polycyclic Aromatic Hydrocarbons</b>							
Acenaphthene	%	102			70-130	Pass	
Acenaphthylene	%	98			70-130	Pass	
Anthracene	%	99			70-130	Pass	
Benz(a)anthracene	%	90			70-130	Pass	
Benzo(a)pyrene	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	%	88			70-130	Pass	
Benzo(g,h,i)perylene	%	99			70-130	Pass	
Benzo(k)fluoranthene	%	94			70-130	Pass	
Chrysene	%	95			70-130	Pass	
Dibenz(a,h)anthracene	%	95			70-130	Pass	
Fluoranthene	%	100			70-130	Pass	
Fluorene	%	101			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	96			70-130	Pass	
Naphthalene	%	101			70-130	Pass	
Phenanthrene	%	99			70-130	Pass	
Pyrene	%	99			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Organochlorine Pesticides</b>							
Chlordanes - Total	%	94			70-130	Pass	
4,4'-DDD	%	127			70-130	Pass	
4,4'-DDE	%	110			70-130	Pass	
4,4'-DDT	%	99			70-130	Pass	
a-BHC	%	87			70-130	Pass	
Aldrin	%	81			70-130	Pass	
b-BHC	%	98			70-130	Pass	
d-BHC	%	103			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dieldrin	%	100			70-130	Pass	
Endosulfan I	%	97			70-130	Pass	
Endosulfan II	%	91			70-130	Pass	
Endosulfan sulphate	%	79			70-130	Pass	
Endrin	%	91			70-130	Pass	
Endrin aldehyde	%	96			70-130	Pass	
Endrin ketone	%	82			70-130	Pass	
g-BHC (Lindane)	%	96			70-130	Pass	
Heptachlor	%	84			70-130	Pass	
Heptachlor epoxide	%	92			70-130	Pass	
Hexachlorobenzene	%	91			70-130	Pass	
Methoxychlor	%	76			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Organophosphorus Pesticides</b>							
Diazinon	%	108			70-130	Pass	
Dimethoate	%	78			70-130	Pass	
Ethion	%	117			70-130	Pass	
Fenitrothion	%	103			70-130	Pass	
Methyl parathion	%	113			70-130	Pass	
Mevinphos	%	106			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Phenols (Halogenated)</b>							
2-Chlorophenol	%	104			30-130	Pass	
2,4-Dichlorophenol	%	98			30-130	Pass	
2,4,5-Trichlorophenol	%	101			30-130	Pass	
2,4,6-Trichlorophenol	%	94			30-130	Pass	
2,6-Dichlorophenol	%	102			30-130	Pass	
4-Chloro-3-methylphenol	%	94			30-130	Pass	
Pentachlorophenol	%	118			30-130	Pass	
Tetrachlorophenols - Total	%	123			30-130	Pass	
<b>LCS - % Recovery</b>							
<b>Phenols (non-Halogenated)</b>							
2-Cyclohexyl-4,6-dinitrophenol	%	95			30-130	Pass	
2-Methyl-4,6-dinitrophenol	%	107			30-130	Pass	
2-Methylphenol (o-Cresol)	%	104			30-130	Pass	
2-Nitrophenol	%	95			30-130	Pass	
2,4-Dimethylphenol	%	93			30-130	Pass	
2,4-Dinitrophenol	%	101			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	100			30-130	Pass	
4-Nitrophenol	%	120			30-130	Pass	
Dinoseb	%	115			30-130	Pass	
Phenol	%	102			30-130	Pass	
<b>LCS - % Recovery</b>							
<b>Heavy Metals</b>							
Arsenic	%	104			80-120	Pass	
Cadmium	%	86			80-120	Pass	
Chromium	%	103			80-120	Pass	
Copper	%	104			80-120	Pass	
Lead	%	100			80-120	Pass	
Mercury	%	96			75-125	Pass	
Nickel	%	102			80-120	Pass	
Zinc	%	103			80-120	Pass	
<b>LCS - % Recovery</b>							
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Perfluorobutanoic acid (PFBA)	%	93			50-150	Pass		
Perfluoropentanoic acid (PFPeA)	%	119			50-150	Pass		
Perfluorohexanoic acid (PFHxA)	%	87			50-150	Pass		
Perfluoroheptanoic acid (PFHpA)	%	86			50-150	Pass		
Perfluorooctanoic acid (PFOA)	%	97			50-150	Pass		
Perfluorononanoic acid (PFNA)	%	95			50-150	Pass		
Perfluorodecanoic acid (PFDA)	%	82			50-150	Pass		
Perfluoroundecanoic acid (PFUnDA)	%	92			50-150	Pass		
Perfluorododecanoic acid (PFDoDA)	%	103			50-150	Pass		
Perfluorotridecanoic acid (PFTrDA)	%	98			50-150	Pass		
Perfluorotetradecanoic acid (PFTeDA)	%	116			50-150	Pass		
<b>LCS - % Recovery</b>								
<b>Perfluoroalkyl sulfonamido substances</b>								
Perfluorooctane sulfonamide (FOSA)	%	105			50-150	Pass		
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	108			50-150	Pass		
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	108			50-150	Pass		
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	93			50-150	Pass		
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	84			50-150	Pass		
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	84			50-150	Pass		
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	92			50-150	Pass		
<b>LCS - % Recovery</b>								
<b>Perfluoroalkyl sulfonic acids (PFSAs)</b>								
Perfluorobutanesulfonic acid (PFBS)	%	74			50-150	Pass		
Perfluorononanesulfonic acid (PFNS)	%	120			50-150	Pass		
Perfluoropropanesulfonic acid (PFPrS)	%	113			50-150	Pass		
Perfluoropentanesulfonic acid (PFPeS)	%	82			50-150	Pass		
Perfluorohexanesulfonic acid (PFHxS)	%	102			50-150	Pass		
Perfluoroheptanesulfonic acid (PFHpS)	%	86			50-150	Pass		
Perfluorooctanesulfonic acid (PFOS)	%	85			50-150	Pass		
Perfluorodecanesulfonic acid (PFDS)	%	102			50-150	Pass		
<b>LCS - % Recovery</b>								
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>								
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	94			50-150	Pass		
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	101			50-150	Pass		
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	104			50-150	Pass		
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	110			50-150	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>								
<b>Organochlorine Pesticides</b>								
Chlordanes - Total	P19-Au45483	NCP	%	83		70-130	Pass	
4,4'-DDD	P19-Au45483	NCP	%	103		70-130	Pass	
4,4'-DDE	P19-Au45483	NCP	%	108		70-130	Pass	
4,4'-DDT	P19-Au45483	NCP	%	76		70-130	Pass	
a-BHC	P19-Au45483	NCP	%	105		70-130	Pass	
Aldrin	P19-Au45483	NCP	%	72		70-130	Pass	
b-BHC	P19-Au45483	NCP	%	106		70-130	Pass	
d-BHC	P19-Au45483	NCP	%	104		70-130	Pass	
Dieldrin	P19-Au45483	NCP	%	86		70-130	Pass	
Endosulfan I	P19-Au45483	NCP	%	81		70-130	Pass	
Endosulfan II	P19-Au45483	NCP	%	81		70-130	Pass	
Endosulfan sulphate	P19-Au45483	NCP	%	94		70-130	Pass	
Endrin	P19-Au45483	NCP	%	100		70-130	Pass	
Endrin aldehyde	P19-Au45483	NCP	%	77		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	P19-Au45483	NCP	%	78		70-130	Pass	
g-BHC (Lindane)	P19-Au45483	NCP	%	91		70-130	Pass	
Heptachlor	P19-Au45483	NCP	%	95		70-130	Pass	
Heptachlor epoxide	P19-Au45483	NCP	%	76		70-130	Pass	
Hexachlorobenzene	P19-Au45483	NCP	%	80		70-130	Pass	
Methoxychlor	M19-Se07492	NCP	%	88		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Organophosphorus Pesticides</b>				Result 1				
Diazinon	S19-Au45803	NCP	%	101		70-130	Pass	
Dimethoate	M19-Au39611	NCP	%	78		70-130	Pass	
Ethion	S19-Au45803	NCP	%	112		70-130	Pass	
Fenitrothion	S19-Au45803	NCP	%	100		70-130	Pass	
Methyl parathion	S19-Au45803	NCP	%	108		70-130	Pass	
Mevinphos	S19-Au45803	NCP	%	88		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1				
Naphthalene	M19-Au44069	NCP	%	104		70-130	Pass	
TRH C6-C10	M19-Au44069	NCP	%	114		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1				
TRH C6-C9	M19-Au44069	NCP	%	118		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>BTEX</b>				Result 1				
Benzene	M19-Au44069	NCP	%	120		70-130	Pass	
Toluene	M19-Au44069	NCP	%	126		70-130	Pass	
Ethylbenzene	M19-Au44069	NCP	%	126		70-130	Pass	
m&p-Xylenes	M19-Au44069	NCP	%	128		70-130	Pass	
o-Xylene	M19-Au44069	NCP	%	125		70-130	Pass	
Xylenes - Total	M19-Au44069	NCP	%	127		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1				
Perfluorobutanoic acid (PFBA)	M19-Au42664	NCP	%	95		50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M19-Au42664	NCP	%	91		50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M19-Au42664	NCP	%	85		50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M19-Au42664	NCP	%	89		50-150	Pass	
Perfluorooctanoic acid (PFOA)	M19-Au42664	NCP	%	93		50-150	Pass	
Perfluorononanoic acid (PFNA)	M19-Au42664	NCP	%	100		50-150	Pass	
Perfluorodecanoic acid (PFDA)	M19-Au42664	NCP	%	84		50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M19-Au42664	NCP	%	96		50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M19-Au42664	NCP	%	100		50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	M19-Au42664	NCP	%	94		50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M19-Au42664	NCP	%	119		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl sulfonamido substances</b>				Result 1				
Perfluorooctane sulfonamide (FOSA)	M19-Au42664	NCP	%	103		50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M19-Au42664	NCP	%	94		50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M19-Au42664	NCP	%	105		50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M19-Au42664	NCP	%	79		50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M19-Au42664	NCP	%	90		50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M19-Au42664	NCP	%	93		50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M19-Au42664	NCP	%	101		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl sulfonic acids (PFSA's)</b>				Result 1				
Perfluorobutanesulfonic acid (PFBS)	M19-Au42664	NCP	%	77		50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M19-Au42664	NCP	%	110		50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M19-Au42664	NCP	%	103		50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M19-Au42664	NCP	%	76		50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M19-Au42664	NCP	%	107		50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M19-Au42664	NCP	%	89		50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M19-Au42664	NCP	%	92		50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M19-Au42664	NCP	%	90		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)</b>				Result 1				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M19-Au42664	NCP	%	83		50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M19-Au42664	NCP	%	84		50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M19-Au42664	NCP	%	112		50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M19-Au42664	NCP	%	126		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>Heavy Metals</b>				Result 1				
Arsenic	S19-Au42785	CP	%	99		75-125	Pass	
Cadmium	S19-Au42785	CP	%	106		75-125	Pass	
Chromium	S19-Au42785	CP	%	98		75-125	Pass	
Copper	S19-Au42785	CP	%	98		75-125	Pass	
Lead	S19-Au42785	CP	%	94		75-125	Pass	
Mercury	S19-Au42785	CP	%	95		70-130	Pass	
Nickel	S19-Au42785	CP	%	94		75-125	Pass	
Zinc	S19-Au42785	CP	%	95		75-125	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1				
TRH >C10-C16	S19-Au42787	CP	%	84		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1				
TRH C10-C14	S19-Au42787	CP	%	89		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1				
Acenaphthene	S19-Au42787	CP	%	81		70-130	Pass	
Acenaphthylene	S19-Au42787	CP	%	78		70-130	Pass	
Anthracene	S19-Au42787	CP	%	76		70-130	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benz(a)anthracene	S19-Au42787	CP	%	78			70-130	Pass	
Benzo(a)pyrene	S19-Au42787	CP	%	72			70-130	Pass	
Benzo(b&j)fluoranthene	S19-Au42787	CP	%	73			70-130	Pass	
Benzo(g,h,i)perylene	S19-Au42787	CP	%	83			70-130	Pass	
Benzo(k)fluoranthene	S19-Au42787	CP	%	91			70-130	Pass	
Chrysene	S19-Au42787	CP	%	79			70-130	Pass	
Dibenz(a,h)anthracene	S19-Au42787	CP	%	82			70-130	Pass	
Fluoranthene	S19-Au42787	CP	%	81			70-130	Pass	
Fluorene	S19-Au42787	CP	%	80			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S19-Au42787	CP	%	81			70-130	Pass	
Naphthalene	S19-Au42787	CP	%	80			70-130	Pass	
Phenanthrene	S19-Au42787	CP	%	76			70-130	Pass	
Pyrene	S19-Au42787	CP	%	81			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Phenols (Halogenated)</b>				Result 1					
2-Chlorophenol	S19-Au42787	CP	%	80			30-130	Pass	
2,4-Dichlorophenol	S19-Au42787	CP	%	76			30-130	Pass	
2,4,5-Trichlorophenol	S19-Au42787	CP	%	80			30-130	Pass	
2,4,6-Trichlorophenol	S19-Au42787	CP	%	73			30-130	Pass	
2,6-Dichlorophenol	S19-Au42787	CP	%	76			30-130	Pass	
4-Chloro-3-methylphenol	S19-Au42787	CP	%	73			30-130	Pass	
Pentachlorophenol	S19-Au42787	CP	%	92			30-130	Pass	
Tetrachlorophenols - Total	S19-Au42787	CP	%	72			30-130	Pass	
<b>Spike - % Recovery</b>									
<b>Phenols (non-Halogenated)</b>				Result 1					
2-Cyclohexyl-4,6-dinitrophenol	S19-Au42787	CP	%	69			30-130	Pass	
2-Methyl-4,6-dinitrophenol	S19-Au42787	CP	%	70			30-130	Pass	
2-Methylphenol (o-Cresol)	S19-Au42787	CP	%	77			30-130	Pass	
2-Nitrophenol	S19-Au42787	CP	%	75			30-130	Pass	
2,4-Dimethylphenol	S19-Au42787	CP	%	43			30-130	Pass	
2,4-Dinitrophenol	S19-Au42787	CP	%	124			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S19-Au42787	CP	%	78			30-130	Pass	
4-Nitrophenol	S19-Au42787	CP	%	91			30-130	Pass	
Dinoseb	S19-Au42787	CP	%	82			30-130	Pass	
Phenol	S19-Au42787	CP	%	79			30-130	Pass	
<b>Spike - % Recovery</b>									
<b>Heavy Metals</b>				Result 1					
Arsenic	S19-Au42795	CP	%	90			75-125	Pass	
Cadmium	S19-Au42795	CP	%	94			75-125	Pass	
Chromium	S19-Au42795	CP	%	65			75-125	Fail	Q08
Copper	S19-Au42795	CP	%	104			75-125	Pass	
Lead	S19-Au42795	CP	%	85			75-125	Pass	
Mercury	S19-Au42795	CP	%	99			70-130	Pass	
Nickel	S19-Au42795	CP	%	98			75-125	Pass	
Zinc	S19-Au42795	CP	%	95			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
				Result 1	Result 2	RPD			
% Moisture	S19-Au41998	NCP	%	9.0	9.0	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S19-Au42778	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S19-Au42778	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S19-Au42778	CP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass

<b>Duplicate</b>								
<b>Organophosphorus Pesticides</b>				Result 1	Result 2	RPD		
Ethoprop	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfothion	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S19-Au42778	CP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S19-Au42778	CP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
<b>Duplicate</b>								
<b>Phenols (Halogenated)</b>				Result 1	Result 2	RPD		
2-Chlorophenol	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	S19-Au42778	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	S19-Au42778	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	S19-Au42778	CP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	S19-Au42778	CP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	S19-Au42778	CP	mg/kg	< 10	< 10	<1	30%	Pass
<b>Duplicate</b>								
<b>Phenols (non-Halogenated)</b>				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	S19-Au42778	CP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	S19-Au42778	CP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	S19-Au42778	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	S19-Au42778	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	S19-Au42778	CP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	S19-Au42778	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	S19-Au42778	CP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	S19-Au42778	CP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	S19-Au42778	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
<b>Duplicate</b>								
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanoic acid (PFNA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass

Duplicate								
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1	Result 2	RPD		
Perfluorotridecanoic acid (PFTrDA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
<b>Perfluoroalkyl sulfonamido substances</b>				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M19-Au42663	NCP	ug/kg	< 10	< 10	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M19-Au42663	NCP	ug/kg	< 10	< 10	<1	30%	Pass
Duplicate								
<b>Perfluoroalkyl sulfonic acids (PFSA's)</b>				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)</b>				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M19-Au42663	NCP	ug/kg	< 10	< 10	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M19-Au42663	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Arsenic	S19-Au42780	CP	mg/kg	6.4	6.9	7.0	30%	Pass
Cadmium	S19-Au42780	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Au42780	CP	mg/kg	13	13	1.0	30%	Pass
Copper	S19-Au42780	CP	mg/kg	29	30	3.0	30%	Pass
Lead	S19-Au42780	CP	mg/kg	14	15	3.0	30%	Pass
Mercury	S19-Au42780	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S19-Au42780	CP	mg/kg	7.9	7.9	<1	30%	Pass
Zinc	S19-Au42780	CP	mg/kg	37	42	14	30%	Pass
Duplicate								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Arsenic	S19-Au42785	CP	mg/kg	2.3	2.3	4.0	30%	Pass
Cadmium	S19-Au42785	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Au42785	CP	mg/kg	7.6	7.9	4.0	30%	Pass
Copper	S19-Au42785	CP	mg/kg	6.2	6.4	3.0	30%	Pass
Lead	S19-Au42785	CP	mg/kg	5.9	6.2	5.0	30%	Pass
Mercury	S19-Au42785	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Nickel	S19-Au42785	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	S19-Au42785	CP	mg/kg	11	11	3.0	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	S19-Au42786	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S19-Au42786	CP	mg/kg	110	120	2.0	30%	Pass
TRH >C34-C40	S19-Au42786	CP	mg/kg	120	130	11	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C10-C14	S19-Au42786	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S19-Au42786	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S19-Au42786	CP	mg/kg	110	110	4.0	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)anthracene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	S19-Au42786	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	S19-Au42786	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	S19-Au42786	CP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	S19-Au42786	CP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	S19-Au42786	CP	mg/kg	< 10	< 10	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	S19-Au42786	CP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	S19-Au42786	CP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	S19-Au42786	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
2-Nitrophenol	S19-Au42786	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	S19-Au42786	CP	mg/kg	< 5	< 5	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	S19-Au42786	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	S19-Au42786	CP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	S19-Au42786	CP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	S19-Au42786	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S19-Au42790	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S19-Au42790	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S19-Au42790	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S19-Au42790	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S19-Au42790	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S19-Au42790	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S19-Au42790	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S19-Au42790	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S19-Au42790	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S19-Au42794	CP	mg/kg	7.9	9.4	17	30%	Pass	
Cadmium	S19-Au42794	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S19-Au42794	CP	mg/kg	15	16	3.0	30%	Pass	
Copper	S19-Au42794	CP	mg/kg	43	44	4.0	30%	Pass	
Lead	S19-Au42794	CP	mg/kg	23	24	5.0	30%	Pass	
Mercury	S19-Au42794	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S19-Au42794	CP	mg/kg	25	25	1.0	30%	Pass	
Zinc	S19-Au42794	CP	mg/kg	100	100	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S19-Au42795	CP	mg/kg	17	19	12	30%	Pass	
Cadmium	S19-Au42795	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S19-Au42795	CP	mg/kg	28	55	65	30%	Fail	Q15
Copper	S19-Au42795	CP	mg/kg	29	26	11	30%	Pass	
Lead	S19-Au42795	CP	mg/kg	24	34	35	30%	Fail	Q15
Mercury	S19-Au42795	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S19-Au42795	CP	mg/kg	18	21	13	30%	Pass	
Zinc	S19-Au42795	CP	mg/kg	64	70	8.0	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
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
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.
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

## Authorised By

Alena Bounkeua	Analytical Services Manager
Bryan Wilson	Senior Analyst-PFAS (QLD)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)



### Glenn Jackson General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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GHD Pty Ltd NSW  
 Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 18217**

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

**Attention:** Henry Luo

**Report** 673957-W  
 Project name TOWNSON AND BURDEKIN RD  
 Project ID 12511195  
 Received Date Aug 29, 2019

<b>Client Sample ID</b>			<b>RB_190826</b>
<b>Sample Matrix</b>			<b>Water</b>
<b>Eurofins Sample No.</b>			<b>S19-Au42781</b>
<b>Date Sampled</b>			<b>Aug 26, 2019</b>
Test/Reference	LOR	Unit	
<b>Heavy Metals</b>			
Arsenic	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	< 0.005



**Sample History**

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

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

**Description**

Eurofins | mgt Suite B7A

Metals M8

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

**Testing Site**

Melbourne

**Extracted**

Aug 30, 2019

**Holding Time**

180 Days

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Aug 29, 2019 10:33 AM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 673957	<b>Due:</b> Sep 5, 2019
<b>Project Name:</b> TOWNSON AND BURDEKIN RD	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
<b>Project ID:</b> 12511195	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X						X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>								X							X
<b>Perth Laboratory - NATA Site # 23736</b>															
<b>External Laboratory</b>															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	BH13_0.0-0.2	Aug 26, 2019		Soil	S19-Au42775	X			X	X					
2	BH13_0.3-0.5	Aug 26, 2019		Soil	S19-Au42776					X		X			
3	BH13_0.8-1.0	Aug 26, 2019		Soil	S19-Au42777					X	X				
4	BH11_0.0-0.2	Aug 27, 2019		Soil	S19-Au42778	X			X	X		X		X	
5	FD01_190827	Aug 27, 2019		Soil	S19-Au42779					X	X				
6	BH11_0.8-1.0	Aug 27, 2019		Soil	S19-Au42780					X	X				
7	RB_190826	Aug 26, 2019		Water	S19-Au42781				X						
8	TRIP BLANK	Aug 27, 2019		Soil	S19-Au42782									X	
9	SPIKE LAB	Aug 27, 2019		Soil	S19-Au42783									X	

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<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X						X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>								X							X
<b>Perth Laboratory - NATA Site # 23736</b>															
10	TRIP SPIKE	Aug 27, 2019		Soil	S19-Au42784									X	
11	PC01_0.5-0.8	Aug 26, 2019		Soil	S19-Au42785	X				X		X			
12	PC01_1.1	Aug 26, 2019		Soil	S19-Au42786					X	X				
13	PC01_1.5	Aug 26, 2019		Soil	S19-Au42787					X	X				
14	TP01_0.1-0.2	Aug 27, 2019		Soil	S19-Au42788	X			X	X		X			
15	DUP_011	Aug 27, 2019		Soil	S19-Au42789					X	X				
16	TP01_0.4-0.5	Aug 27, 2019		Soil	S19-Au42790					X	X				
17	TP01_0.9-1.0	Aug 27, 2019		Soil	S19-Au42791					X	X				
18	TP04_0.1-0.2	Aug 27, 2019		Soil	S19-Au42792	X			X	X		X			
19	TP04_0.9-1.0	Aug 27, 2019		Soil	S19-Au42793					X	X				
20	PC06_0.3-0.5	Aug 28, 2019		Soil	S19-Au42794	X				X		X			
21	PC06_0.8-0.9	Aug 28, 2019		Soil	S19-Au42795					X	X				

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<b>Project ID:</b>	12511195	<b>Fax:</b>	02 9239 7199	<b>Contact Name:</b>	Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X						X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>								X							X
<b>Perth Laboratory - NATA Site # 23736</b>															
22	TP07_0.1-0.2	Aug 28, 2019		Soil	S19-Au42796	X			X	X			X		
23	TP07_0.2-0.3	Aug 27, 2019		Soil	S19-Au42797	X									
24	TP07_0.5-0.7	Aug 27, 2019		Soil	S19-Au42798					X	X				
25	BH11_0.0-0.2	Aug 27, 2019		US Leachate	S19-Au42802			X							X
26	BH13_1.8-2.0	Aug 26, 2019		Soil	S19-Au42806		X								
27	BH13_2.8-3.0	Aug 26, 2019		Soil	S19-Au42807		X								
28	BH13_3.8-4.0	Aug 26, 2019		Soil	S19-Au42808		X								
29	BH13_4.8-5.0	Aug 26, 2019		Soil	S19-Au42809		X								
30	BH13_5.8-6.0	Aug 26, 2019		Soil	S19-Au42810		X								
31	BH11_0.3-0.5	Aug 27, 2019		Soil	S19-Au42811		X								
32	BH11_1.8-2.0	Aug 27, 2019		Soil	S19-Au42812		X								
33	RB_190827	Aug 27, 2019		Water	S19-Au42813		X								

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Sample Detail						Asbestos - AS4964	HOLD	USA Leaching Procedure	Metals M8	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7A	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>							X		X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>						X						X	X	X	
<b>Brisbane Laboratory - NATA Site # 20794</b>								X							X
<b>Perth Laboratory - NATA Site # 23736</b>															
34	TP04_0.4-0.5	Aug 27, 2019		Soil	S19-Au42814		X								
35	DUP_012	Aug 27, 2019		Soil	S19-Au42815		X								
<b>Test Counts</b>						8	10	1	1	5	19	11	7	3	2

**Internal Quality Control Review and Glossary**
**General**

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Heavy Metals</b>									
Arsenic			mg/L	< 0.001			0.001	Pass	
Cadmium			mg/L	< 0.0002			0.0002	Pass	
Chromium			mg/L	< 0.001			0.001	Pass	
Copper			mg/L	< 0.001			0.001	Pass	
Lead			mg/L	< 0.001			0.001	Pass	
Mercury			mg/L	< 0.0001			0.0001	Pass	
Nickel			mg/L	< 0.001			0.001	Pass	
Zinc			mg/L	< 0.005			0.005	Pass	
<b>LCS - % Recovery</b>									
<b>Heavy Metals</b>									
Arsenic			%	91			80-120	Pass	
Cadmium			%	94			80-120	Pass	
Chromium			%	96			80-120	Pass	
Copper			%	94			80-120	Pass	
Lead			%	103			80-120	Pass	
Mercury			%	99			75-125	Pass	
Nickel			%	94			80-120	Pass	
Zinc			%	93			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>									
<b>Heavy Metals</b>				Result 1					
Arsenic	B19-Au40782	NCP	%	96			75-125	Pass	
Cadmium	B19-Au40782	NCP	%	98			75-125	Pass	
Chromium	B19-Au40782	NCP	%	99			75-125	Pass	
Copper	B19-Au40782	NCP	%	99			75-125	Pass	
Lead	B19-Au40782	NCP	%	101			75-125	Pass	
Mercury	B19-Au40782	NCP	%	100			70-130	Pass	
Nickel	B19-Au40782	NCP	%	93			75-125	Pass	
Zinc	B19-Au40782	NCP	%	71			75-125	Fail	Q08
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Heavy Metals</b>				Result 1	Result 2	RPD			
Arsenic	B19-Au40782	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	B19-Au40782	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	B19-Au40782	NCP	mg/L	0.004	0.002	65	30%	Fail	Q15
Copper	B19-Au40782	NCP	mg/L	0.010	0.010	4.0	30%	Pass	
Lead	B19-Au40782	NCP	mg/L	0.001	< 0.001	9.0	30%	Pass	
Mercury	B19-Au40782	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	B19-Au40782	NCP	mg/L	0.042	0.039	8.0	30%	Pass	
Zinc	B19-Au40782	NCP	mg/L	0.23	0.22	7.0	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
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
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**

Alena Bounkeua	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)



**Glenn Jackson**  
**General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.





# CHAIN OF CUSTODY RECORD

ABN 50 095 085 521

Sydney Laboratory  
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066  
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory  
Unit 1, 21 Smallwood Pl., Murarie, QLD 4172  
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory  
Unit 2, 91 Leach Highway, Kewdale WA 6105  
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory  
2 Kingston Town Close, Oakleigh, VIC 3166  
03 8564 5000 EnviroSampleVic@eurofins.com

Company		GHD		Project No		12511195		Project Manager		Michelle Rodrigo		Sampler(s)		Tom Frederick									
Address		Level 15, 133 Castlereagh St Sydney, 2000		Project Name		Townson and Burdekin rd		EDD Format (ESdat, EQUIS, Custom)		Esdat		Handed over by		Tom Frederick									
Contact Name		Henry Luo		<small>Analyses</small> <small>(Note: Where metals are requested, please specify "Total" or "Filtered" SUITE code must be used to attach SUITE printing)</small> asbestos (presence / absence) suite B7a (TRH, BTEXN, PAH, phenols, 8 metals) suite B14 (OCP, OPP) suite B7 (TRH, BTEXN, PAH, 8 metals) 8 metals BTEX / TRH C6-C10 PFAS (standard LOR, 28 compounds) TCLP PFAS		Email for Invoice		Michelle Rodrigo		Email for Results		Henry.Luo@ghd.com		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* * Surcharges apply <input type="checkbox"/> Other ( Hold )							
Phone No		0414090002				Containers		1L Plastic		250mL Plastic		125mL Plastic		200mL Amber Glass		40mL VOA vial		500mL PFAS Bottle		Jar (Glass or HDPE)		Other (Asbestos AS4694, WA Guidelines)	
Special Directions		Place all samples on Hold				Sample Comments / Dangerous Goods Hazard Warning																	
Purchase Order		12511195		Quote ID No																			
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																				
1	BH12_0_0.1	4/9/19	Soil	x	x																		
2	BH12_0.4_0.5	4/9/19	Soil																				
3	BH12_0.9_1.0	4/9/19	Soil																				
4	BH12_1.9_2.0	4/9/19	Soil																				
5	RB_190904	4/9/19	Water										1	1	2								
6																							
7																							
8																							
9																							
10																							
Total Counts													1	1	2		4	4					
Method of Shipment		<input type="checkbox"/> Courier (# ) <input checked="" type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Date		Time		Time		Temperature		Report No					
Eurofins   mgt Laboratory Use Only		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		13 / 08 / 2019		Time		0.65625		Temperature		3.7					
		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		5/9/19		Time		12:13		Report No		675299					

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

**GHD Pty Ltd NSW**  
**Level 15, 133 Castlereagh Street**  
**Sydney**  
**NSW 2000**



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 18217**

Accredited for compliance with ISO/IEC 17025–Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

**Attention:** Michelle Rodrigo  
**Report** 675299-AID  
**Project Name** TOWNSON AND BURDEKIN RD  
**Project ID** 12511195  
**Received Date** Sep 05, 2019  
**Date Reported** Sep 12, 2019

**Methodology:**

Asbestos Fibre  
 Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

*NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*

Unknown Mineral  
 Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

*NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*

Subsampling Soil  
 Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

*NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*

Bonded asbestos-  
 containing material  
 (ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

*NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*

Limit of Reporting

The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).

The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).

*NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

**Project Name** TOWNSON AND BURDEKIN RD  
**Project ID** 12511195  
**Date Sampled** Sep 04, 2019  
**Report** 675299-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH12_0_0.1	19-Se07235	Sep 04, 2019	Approximate Sample 246g Sample consisted of: Dark-brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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>
Asbestos - LTM-ASB-8020	Sydney	Sep 05, 2019	Indefinite

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Sep 5, 2019 12:13 PM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 675299	<b>Due:</b> Sep 12, 2019
	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Michelle Rodrigo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Asbestos - AS4964	HOLD	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>										
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>										
<b>Perth Laboratory - NATA Site # 23736</b>										
<b>External Laboratory</b>										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	BH12_0_0.1	Sep 04, 2019		Soil	S19-Se07235	X		X	X	
2	BH12_0.4_0.5	Sep 04, 2019		Soil	S19-Se07236				X	X
3	BH12_1.9_2.0	Sep 04, 2019		Soil	S19-Se07237				X	X
4	BH12_0.9_1.0	Sep 04, 2019		Soil	S19-Se07238		X			
5	RB_190904	Sep 04, 2019		Water	S19-Se07239		X			
<b>Test Counts</b>						1	2	1	3	2

**Internal Quality Control Review and Glossary**
**General**

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

**Holding Times**

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

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

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

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

**Units**

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

**Terms**

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

**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
N/A	Not applicable

**Asbestos Counter/Identifier:**

Chamath JHM Annakkage      Senior Analyst-Asbestos (NSW)

**Authorised by:**

Sayed Abu      Senior Analyst-Asbestos (NSW)



**Glenn Jackson**  
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

GHD Pty Ltd NSW  
 Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000



NATA Accredited  
 Accreditation Number 1261  
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

Attention: **Michelle Rodrigo**

Report **675299-S**  
 Project name **TOWNSON AND BURDEKIN RD**  
 Project ID **12511195**  
 Received Date **Sep 05, 2019**

Client Sample ID			BH12_0_0.1	BH12_0.4_0.5	BH12_1.9_2.0
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S19-Se07235	S19-Se07236	S19-Se07237
Date Sampled			Sep 04, 2019	Sep 04, 2019	Sep 04, 2019
Test/Reference	LOR	Unit			
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>					
TRH C6-C9	20	mg/kg	-	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20
TRH C15-C28	50	mg/kg	-	81	< 50
TRH C29-C36	50	mg/kg	-	88	< 50
TRH C10-C36 (Total)	50	mg/kg	-	169	< 50
<b>BTEX</b>					
Benzene	0.1	mg/kg	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	73	82
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>					
Naphthalene <sup>N02</sup>	0.5	mg/kg	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	-	< 20	< 20
TRH >C10-C16	50	mg/kg	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	-	< 50	< 50
TRH >C16-C34	100	mg/kg	-	140	< 100
TRH >C34-C40	100	mg/kg	-	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	140	< 100
<b>Polycyclic Aromatic Hydrocarbons</b>					
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	1.2
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5



Client Sample ID			BH12_0_0.1	BH12_0.4_0.5	BH12_1.9_2.0
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S19-Se07235	S19-Se07236	S19-Se07237
Date Sampled			Sep 04, 2019	Sep 04, 2019	Sep 04, 2019
Test/Reference	LOR	Unit			
<b>Polycyclic Aromatic Hydrocarbons</b>					
Dibenz(a,h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	-	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	114	107
p-Terphenyl-d14 (surr.)	1	%	-	116	112
<b>Organochlorine Pesticides</b>					
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	-
a-BHC	0.05	mg/kg	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-
b-BHC	0.05	mg/kg	< 0.05	-	-
d-BHC	0.05	mg/kg	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-
Methoxychlor	0.2	mg/kg	< 0.2	-	-
Toxaphene	1	mg/kg	< 1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	-	-
Dibutylchloroendate (surr.)	1	%	89	-	-
Tetrachloro-m-xylene (surr.)	1	%	90	-	-
<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	-	-

Client Sample ID			BH12_0_0.1	BH12_0.4_0.5	BH12_1.9_2.0
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S19-Se07235	S19-Se07236	S19-Se07237
Date Sampled			Sep 04, 2019	Sep 04, 2019	Sep 04, 2019
Test/Reference	LOR	Unit			
<b>Organophosphorus Pesticides</b>					
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	%	111	-	-
<b>Heavy Metals</b>					
Arsenic	2	mg/kg	-	11	5.3
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4
Chromium	5	mg/kg	-	21	< 5
Copper	5	mg/kg	-	45	26
Lead	5	mg/kg	-	34	12
Mercury	0.1	mg/kg	-	< 0.1	< 0.1
Nickel	5	mg/kg	-	41	6.0
Zinc	5	mg/kg	-	140	35
<b>% Moisture</b>					
	1	%	6.4	7.0	15

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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>
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Sep 06, 2019	14 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Sep 06, 2019	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Sep 06, 2019	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Sep 06, 2019	
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Sep 06, 2019	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Sep 06, 2019	180 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Sep 06, 2019	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Sydney	Sep 06, 2019	14 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Sep 05, 2019	14 Days

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Sep 5, 2019 12:13 PM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 675299	<b>Due:</b> Sep 12, 2019
<b>Project Name:</b> TOWNSON AND BURDEKIN RD	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
<b>Project ID:</b> 12511195	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Michelle Rodrigo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Asbestos - AS4964	HOLD	Eurofins   mgt Suite B14	Moisture Set	Eurofins   mgt Suite B7
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>										
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>										
<b>Perth Laboratory - NATA Site # 23736</b>										
<b>External Laboratory</b>										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	BH12_0_0.1	Sep 04, 2019		Soil	S19-Se07235	X		X	X	
2	BH12_0.4_0.5	Sep 04, 2019		Soil	S19-Se07236				X	X
3	BH12_1.9_2.0	Sep 04, 2019		Soil	S19-Se07237				X	X
4	BH12_0.9_1.0	Sep 04, 2019		Soil	S19-Se07238		X			
5	RB_190904	Sep 04, 2019		Water	S19-Se07239		X			
<b>Test Counts</b>						1	2	1	3	2

**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>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</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	
<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	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
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>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>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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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	< 1			1	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	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	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	

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Nickel	mg/kg	< 5		5	Pass	
Zinc	mg/kg	< 5		5	Pass	
<b>LCS - % Recovery</b>						
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	%	85		70-130	Pass	
TRH C10-C14	%	123		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>BTEX</b>						
Benzene	%	98		70-130	Pass	
Toluene	%	97		70-130	Pass	
Ethylbenzene	%	89		70-130	Pass	
m&p-Xylenes	%	93		70-130	Pass	
o-Xylene	%	93		70-130	Pass	
Xylenes - Total	%	93		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene	%	72		70-130	Pass	
TRH C6-C10	%	80		70-130	Pass	
TRH >C10-C16	%	118		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Polycyclic Aromatic Hydrocarbons</b>						
Acenaphthene	%	107		70-130	Pass	
Acenaphthylene	%	107		70-130	Pass	
Anthracene	%	105		70-130	Pass	
Benz(a)anthracene	%	103		70-130	Pass	
Benzo(a)pyrene	%	100		70-130	Pass	
Benzo(b&j)fluoranthene	%	93		70-130	Pass	
Benzo(g,h,i)perylene	%	108		70-130	Pass	
Benzo(k)fluoranthene	%	79		70-130	Pass	
Chrysene	%	109		70-130	Pass	
Dibenz(a,h)anthracene	%	98		70-130	Pass	
Fluoranthene	%	104		70-130	Pass	
Fluorene	%	105		70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	102		70-130	Pass	
Naphthalene	%	109		70-130	Pass	
Phenanthrene	%	108		70-130	Pass	
Pyrene	%	106		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	%	91		70-130	Pass	
4,4'-DDD	%	80		70-130	Pass	
4,4'-DDE	%	80		70-130	Pass	
4,4'-DDT	%	84		70-130	Pass	
a-BHC	%	80		70-130	Pass	
Aldrin	%	81		70-130	Pass	
b-BHC	%	79		70-130	Pass	
d-BHC	%	77		70-130	Pass	
Dieldrin	%	80		70-130	Pass	
Endosulfan I	%	71		70-130	Pass	
Endosulfan II	%	72		70-130	Pass	
Endosulfan sulphate	%	83		70-130	Pass	
Endrin	%	83		70-130	Pass	
Endrin aldehyde	%	80		70-130	Pass	
Endrin ketone	%	82		70-130	Pass	



Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code		
g-BHC (Lindane)	%	80	70-130	Pass			
Heptachlor	%	85	70-130	Pass			
Heptachlor epoxide	%	82	70-130	Pass			
Hexachlorobenzene	%	83	70-130	Pass			
Methoxychlor	%	94	70-130	Pass			
<b>LCS - % Recovery</b>							
<b>Organophosphorus Pesticides</b>							
Diazinon	%	108	70-130	Pass			
Dimethoate	%	102	70-130	Pass			
Ethion	%	103	70-130	Pass			
Fenitrothion	%	130	70-130	Pass			
Methyl parathion	%	113	70-130	Pass			
Mevinphos	%	117	70-130	Pass			
<b>LCS - % Recovery</b>							
<b>Heavy Metals</b>							
Arsenic	%	104	70-130	Pass			
Cadmium	%	105	70-130	Pass			
Chromium	%	107	70-130	Pass			
Copper	%	108	70-130	Pass			
Lead	%	106	70-130	Pass			
Mercury	%	105	70-130	Pass			
Nickel	%	106	70-130	Pass			
Zinc	%	107	70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>							
<b>Organochlorine Pesticides</b>							
				Result 1			
Chlordanes - Total	S19-Se14315	NCP	%	91	70-130	Pass	
4,4'-DDD	S19-Se14315	NCP	%	98	70-130	Pass	
4,4'-DDE	S19-Se14315	NCP	%	101	70-130	Pass	
4,4'-DDT	S19-Se14315	NCP	%	86	70-130	Pass	
a-BHC	S19-Se14315	NCP	%	92	70-130	Pass	
Aldrin	S19-Se14315	NCP	%	92	70-130	Pass	
b-BHC	S19-Se14315	NCP	%	91	70-130	Pass	
d-BHC	S19-Se14315	NCP	%	90	70-130	Pass	
Dieldrin	S19-Se14315	NCP	%	94	70-130	Pass	
Endosulfan I	S19-Se14315	NCP	%	92	70-130	Pass	
Endosulfan II	S19-Se14315	NCP	%	95	70-130	Pass	
Endosulfan sulphate	S19-Se14315	NCP	%	97	70-130	Pass	
Endrin	S19-Se14315	NCP	%	99	70-130	Pass	
Endrin aldehyde	S19-Se14315	NCP	%	91	70-130	Pass	
Endrin ketone	S19-Se14315	NCP	%	97	70-130	Pass	
g-BHC (Lindane)	S19-Se14315	NCP	%	92	70-130	Pass	
Heptachlor	S19-Se14315	NCP	%	97	70-130	Pass	
Heptachlor epoxide	S19-Se14315	NCP	%	94	70-130	Pass	
Hexachlorobenzene	S19-Se14315	NCP	%	95	70-130	Pass	
Methoxychlor	S19-Se14315	NCP	%	97	70-130	Pass	
<b>Spike - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>							
				Result 1			
TRH C6-C9	S19-Se04360	NCP	%	86	70-130	Pass	
TRH C10-C14	S19-Se12641	NCP	%	121	70-130	Pass	
<b>Spike - % Recovery</b>							
<b>BTEX</b>							
				Result 1			
Benzene	S19-Se04360	NCP	%	84	70-130	Pass	
Toluene	S19-Se04360	NCP	%	87	70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	S19-Se04360	NCP	%	83			70-130	Pass	
m&p-Xylenes	S19-Se04360	NCP	%	86			70-130	Pass	
o-Xylene	S19-Se04360	NCP	%	85			70-130	Pass	
Xylenes - Total	S19-Se04360	NCP	%	86			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1					
Naphthalene	S19-Se04360	NCP	%	80			70-130	Pass	
TRH C6-C10	S19-Se04360	NCP	%	87			70-130	Pass	
TRH >C10-C16	S19-Se12641	NCP	%	118			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1					
Acenaphthene	S19-Se10305	NCP	%	107			70-130	Pass	
Acenaphthylene	S19-Se10305	NCP	%	107			70-130	Pass	
Anthracene	S19-Se10305	NCP	%	105			70-130	Pass	
Benz(a)anthracene	S19-Se10305	NCP	%	103			70-130	Pass	
Benzo(a)pyrene	S19-Se10305	NCP	%	101			70-130	Pass	
Benzo(b&j)fluoranthene	S19-Se10305	NCP	%	94			70-130	Pass	
Benzo(g,h,i)perylene	S19-Se10305	NCP	%	107			70-130	Pass	
Benzo(k)fluoranthene	S19-Se10305	NCP	%	80			70-130	Pass	
Chrysene	S19-Se10305	NCP	%	109			70-130	Pass	
Dibenz(a,h)anthracene	S19-Se10305	NCP	%	96			70-130	Pass	
Fluoranthene	S19-Se10305	NCP	%	108			70-130	Pass	
Fluorene	S19-Se10305	NCP	%	107			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S19-Se10305	NCP	%	97			70-130	Pass	
Naphthalene	S19-Se10305	NCP	%	110			70-130	Pass	
Phenanthrene	S19-Se10305	NCP	%	108			70-130	Pass	
Pyrene	S19-Se10305	NCP	%	108			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Heavy Metals</b>				Result 1					
Arsenic	S19-Se09691	NCP	%	108			70-130	Pass	
Cadmium	S19-Se09691	NCP	%	115			70-130	Pass	
Chromium	S19-Se09691	NCP	%	103			70-130	Pass	
Copper	S19-Se06069	NCP	%	99			70-130	Pass	
Lead	S19-Se09691	NCP	%	103			70-130	Pass	
Mercury	S19-Se09691	NCP	%	114			70-130	Pass	
Nickel	S19-Se09691	NCP	%	107			70-130	Pass	
Zinc	S19-Se09691	NCP	%	123			70-130	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	S19-Se14314	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4,4'-DDD	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDE	S19-Se14314	NCP	mg/kg	0.08	< 0.05	55	30%	Fail	Q15
4,4'-DDT	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Organochlorine Pesticides</b>				Result 1	Result 2	RPD			
Endrin ketone	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
γ-BHC (Lindane)	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S19-Se14314	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S19-Se14314	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S19-Se14314	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
<b>Duplicate</b>									
<b>Organophosphorus Pesticides</b>				Result 1	Result 2	RPD			
Azinphos-methyl	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S19-Se14312	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S19-Se14312	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S19-Se14312	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S19-Se14312	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Omethoate	S19-Se14312	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S19-Se14312	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrazophos	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S19-Se14312	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
<b>Duplicate</b>									
				Result 1	Result 2	RPD			
% Moisture	S19-Se06998	NCP	%	12	12	3.0	30%	Pass	
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH C6-C9	S19-Se02317	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S19-Se09117	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S19-Se09117	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S19-Se09117	NCP	mg/kg	< 50	< 50	<1	30%	Pass	

<b>Duplicate</b>								
<b>BTEX</b>				Result 1	Result 2	RPD		
Benzene	S19-Se02317	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S19-Se02317	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S19-Se02317	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S19-Se02317	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S19-Se02317	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S19-Se02317	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
<b>Duplicate</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD		
Naphthalene	S19-Se02317	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S19-Se02317	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	S19-Se09117	NCP	mg/kg	< 50	< 50	<1	30%	Pass
<b>Duplicate</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD		
Acenaphthene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S19-Se10304	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
<b>Duplicate</b>								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Arsenic	S19-Se07673	NCP	mg/kg	4.4	4.7	7.0	30%	Pass
Cadmium	S19-Se07673	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Se07673	NCP	mg/kg	23	24	6.0	30%	Pass
Copper	S19-Se07673	NCP	mg/kg	31	34	7.0	30%	Pass
Lead	S19-Se07673	NCP	mg/kg	28	30	5.0	30%	Pass
Mercury	S19-Se07673	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S19-Se07673	NCP	mg/kg	8.3	8.8	6.0	30%	Pass
Zinc	S19-Se07673	NCP	mg/kg	72	77	8.0	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

Alena Bounkeua	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Gabriele Cordero	Senior Analyst-Metal (NSW)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)



### Glenn Jackson

#### General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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## Enviro Sample Vic

**From:** Alena Bounkeua  
**Sent:** Tuesday, 10 September 2019 4:24 PM  
**To:** Enviro Sample Vic  
**Cc:** Catherine Wilson  
**Subject:** FW: TCLP analysis for GHD project 12511195 (Eurofins 672730, 673140, 673778 and 673957)

Additional analysis please - standard TAT

Kind Regards,

Alena Bounkeua  
**Eurofins | Environment Testing**  
Phone: +61 2 9900 8414  
Mobile: +61 429 365 410  
Email: [AlenaBounkeua@eurofins.com](mailto:AlenaBounkeua@eurofins.com)

---

**From:** Henry Luo [mailto:[Henry.Luo@ghd.com](mailto:Henry.Luo@ghd.com)]  
**Sent:** Tuesday, 10 September 2019 4:22 PM  
**To:** Alena Bounkeua  
**Cc:** Terry Nham  
**Subject:** TCLP analysis for GHD project 12511195 (Eurofins 672730, 673140, 673778 and 673957)

EXTERNAL EMAIL\*

Hi Alena

We reviewed four recently received lab reports related to this project and identified the following samples require TCLP Analysis.

Standard turnaround time.

D-S

Sample ID (GHD)	Sample date	Eurofins batch number	Analysis required
TP12_0.4-0.5	22/08/2019	673140	TCLP and chromium
TP15_0.0-0.2	23/08/2019	673140	TCLP and chromium
PC07_0.4-0.5	15/08/2019	672730	TCLP and nickel
PC08_0.34-0.44	15/08/2019	672730	TCLP and nickel
PC09_0.3-0.41	15/08/2019	672730	TCLP and nickel
PC09_0.5-0.6	15/08/2019	672730	TCLP and nickel
PC10_0.5-0.6	15/08/2019	672730	TCLP and nickel
PC10_0.15-0.2	15/08/2019	672730	TCLP and nickel
QC07	15/08/2019	672730	TCLP and nickel
DUP_011	27/08/2019	673957	TCLP and nickel

Au32264-41143  
Au36303-91143  
Au32793-91052  
Au32790-91052  
Au32787-91052  
Au32788-91052  
Au32796-91052  
Au32795-91052  
Au32798-91052  
Au42798-91213

Kind regards

Henry

676296

Adlin (EP)

10/9/19 4:22pm

GHD Pty Ltd NSW  
 Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000



NATA Accredited  
 Accreditation Number 1261  
 Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

Attention: **Henry Luo**

Report **676296-L**  
 Project name **TOWNSON AND BURDEKIN RD**  
 Project ID **12511195**  
 Received Date **Sep 10, 2019**

Client Sample ID			TP12_0.4-0.5	TP15_0.0-0.2	PC08_0.34-0.44	PC09_0.3-0.41
Sample Matrix			US Leachate	US Leachate	US Leachate	US Leachate
Eurofins Sample No.			M19-Se16101	M19-Se16102	M19-Se16104	M19-Se16105
Date Sampled			Aug 22, 2019	Aug 23, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Chromium	0.01	mg/L	< 0.01	< 0.01	-	-
Nickel	0.01	mg/L	-	-	0.05	0.08
<b>USA Leaching Procedure</b>						
Leachate Fluid <sup>C01</sup>		comment	1.0	1.0	1.0	1.0
pH (initial)	0.1	pH Units	6.6	6.1	9.4	10
pH (Leachate fluid)	0.1	pH Units	4.9	4.9	4.9	4.9
pH (off)	0.1	pH Units	4.9	4.9	5.8	5.7
pH (USA HCl addition)	0.1	pH Units	1.3	1.3	1.5	1.4

Client Sample ID			PC09_0.5-0.6	PC10_0.5-0.6	PC10_0.15-0.2	QC07
Sample Matrix			US Leachate	US Leachate	US Leachate	US Leachate
Eurofins Sample No.			M19-Se16106	M19-Se16107	M19-Se16108	M19-Se16109
Date Sampled			Aug 15, 2019	Aug 15, 2019	Aug 15, 2019	Aug 15, 2019
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Nickel	0.01	mg/L	0.06	0.05	0.28	0.07
<b>USA Leaching Procedure</b>						
Leachate Fluid <sup>C01</sup>		comment	1.0	1.0	1.0	1.0
pH (initial)	0.1	pH Units	9.2	9.6	9.5	9.4
pH (Leachate fluid)	0.1	pH Units	4.9	4.9	4.9	4.9
pH (off)	0.1	pH Units	5.0	5.4	5.6	5.0
pH (USA HCl addition)	0.1	pH Units	1.5	1.6	3.1	1.6

<b>Client Sample ID</b>			<b>DUP_011</b>
<b>Sample Matrix</b>			<b>US Leachate</b>
<b>Eurofins Sample No.</b>			<b>M19-Se16110</b>
<b>Date Sampled</b>			<b>Aug 15, 2019</b>
Test/Reference	LOR	Unit	
<b>Heavy Metals</b>			
Nickel	0.01	mg/L	0.03
<b>USA Leaching Procedure</b>			
Leachate Fluid <sup>C01</sup>		comment	1.0
pH (initial)	0.1	pH Units	8.6
pH (Leachate fluid)	0.1	pH Units	4.9
pH (off)	0.1	pH Units	5.0
pH (USA HCl addition)	0.1	pH Units	1.4



**Sample History**

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

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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

**Description**

Heavy Metals

**Testing Site**

Melbourne

**Extracted**

Sep 10, 2019

**Holding Time**

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b>	<b>Received:</b> Sep 10, 2019 4:22 PM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 676296	<b>Due:</b> Sep 17, 2019
<b>Project Name:</b> TOWNSON AND BURDEKIN RD	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
<b>Project ID:</b> 12511195	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						CANCELLED	Chromium	Nickel	USA Leaching Procedure
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>									
<b>Brisbane Laboratory - NATA Site # 20794</b>									
<b>Perth Laboratory - NATA Site # 23736</b>									
<b>External Laboratory</b>									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	TP12_0.4-0.5	Aug 22, 2019		US Leachate	M19-Se16101		X		X
2	TP15_0.0-0.2	Aug 23, 2019		US Leachate	M19-Se16102		X		X
3	PC07_0.4-0.5	Aug 15, 2019		US Leachate	M19-Se16103	X			
4	PC08_0.34-0.44	Aug 15, 2019		US Leachate	M19-Se16104			X	X
5	PC09_0.3-0.41	Aug 15, 2019		US Leachate	M19-Se16105			X	X
6	PC09_0.5-0.6	Aug 15, 2019		US Leachate	M19-Se16106			X	X
7	PC10_0.5-0.6	Aug 15, 2019		US Leachate	M19-Se16107			X	X
8	PC10_0.15-0.2	Aug 15, 2019		US Leachate	M19-Se16108			X	X
9	QC07	Aug 15, 2019		US Leachate	M19-Se16109			X	X

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b>	<b>Received:</b> Sep 10, 2019 4:22 PM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 676296	<b>Due:</b> Sep 17, 2019
	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Henry Luo
<b>Project Name:</b> TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						CANCELLED	Chromium	Nickel	USA Leaching Procedure
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X	X	X	X
<b>Sydney Laboratory - NATA Site # 18217</b>									
<b>Brisbane Laboratory - NATA Site # 20794</b>									
<b>Perth Laboratory - NATA Site # 23736</b>									
10	DUP_011	Aug 15, 2019		US Leachate	M19-Se16110			X	X
<b>Test Counts</b>						1	2	7	9

**Internal Quality Control Review and Glossary**
**General**

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Heavy Metals</b>											
Chromium				mg/L	< 0.01			0.01	Pass		
Nickel				mg/L	< 0.01			0.01	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code	
<b>Spike - % Recovery</b>											
<b>Heavy Metals</b>											
Nickel				M19-Se16110	CP	%	Result 1	115	75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code	
<b>Duplicate</b>											
<b>Heavy Metals</b>											
Chromium				M19-Se15453	NCP	mg/L	Result 1	Result 2	RPD		
							< 0.01	< 0.01	<1	30%	Pass
<b>Duplicate</b>											
<b>Heavy Metals</b>											
Nickel				M19-Se16110	CP	mg/L	Result 1	Result 2	RPD		
							0.03	0.03	3.0	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
C01	Leachate Fluid Key: 1 - pH 5.0; 2 - pH 2.9; 3 - pH 9.2; 4 - Reagent (DI) water; 5 - Client sample, 6 - other

**Authorised By**

Alena Bounkeua	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)


**Glenn Jackson  
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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## #AU04\_Enviro\_Sample\_NSW

---

**To:** Alena Bounkeua  
**Subject:** RE: Samples from 675299 and 672730

---

**From:** Terry Nham [<mailto:Terry.Nham@ghd.com>]  
**Sent:** Friday, 4 October 2019 9:57 AM  
**To:** Nibha Vaidya; Alena Bounkeua  
**Subject:** RE: Samples from 675299 and 672730

EXTERNAL EMAIL\*

Hi Nibha and Alena,  
If these two below samples are still at the lab, can we please get both analysed for TCLP Nickel?  
Just on standard TAT.

Regards,

Terry

**Terry Nham**  
**Environmental Scientist**  
**Contamination Assessment and Remediation**

### GHD

T: 61 2 9239 7393 | F: 61 2 9239 7199 | V: 217393 | M: 0403 251 883 | E: [terry.nham@ghd.com](mailto:terry.nham@ghd.com)  
Level 15, 133 Castlereagh St Sydney NSW 2000 Australia | <http://www.ghd.com/>  
[Water](#) | [Energy & Resources](#) | [Environment](#) | [Property & Buildings](#) | [Transportation](#)

Please consider the environment before printing this email

---

**From:** Terry Nham  
**Sent:** Friday, 4 October 2019 8:22 AM  
**To:** Nibha Vaidya ([NibhaVaidya@eurofins.com](mailto:NibhaVaidya@eurofins.com)) <[NibhaVaidya@eurofins.com](mailto:NibhaVaidya@eurofins.com)>; 'AlenaBounkeua@eurofins.com' <[AlenaBounkeua@eurofins.com](mailto:AlenaBounkeua@eurofins.com)>  
**Subject:** Samples from 675299 and 672730

Hi Nibha and Alena,  
We may potentially require some additional analysis on samples from two old batches, we just want to check that you still have them at the lab?  
BH12\_0.4-0.5 (4 Sept 2019) (Lab Report 675299)  
PC07\_0.4-0.5 (15 Aug 2019) (Lab Report 672730)

Please let me know if these are still available for analysis.

Regards,

Terry

**Terry Nham**  
**Environmental Scientist**  
**Contamination Assessment and Remediation**

### GHD

Please consider the environment before printing this email

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GHD Pty Ltd NSW  
 Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000



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 measurements included in this document are traceable  
 to Australian/national standards.

**Attention:** **Michelle Rodrigo**

**Report** **680795-L**  
 Project name **ADDITIONAL - TOWNSON AND BURDEKIN RD**  
 Project ID **12511195**  
 Received Date **Oct 04, 2019**

<b>Client Sample ID</b>			<b>BH12_0.4-0.5</b>
<b>Sample Matrix</b>			<b>US Leachate</b>
<b>Eurofins Sample No.</b>			<b>S19-Oc07706</b>
<b>Date Sampled</b>			<b>Sep 04, 2019</b>
Test/Reference	LOR	Unit	
<b>Heavy Metals</b>			
Nickel	0.01	mg/L	0.07
<b>USA Leaching Procedure</b>			
Leachate Fluid <sup>C01</sup>		comment	1.0
pH (initial)	0.1	pH Units	8.8
pH (off)	0.1	pH Units	5.4
pH (USA HCl addition)	0.1	pH Units	1.8

**Sample History**

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

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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>
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Oct 14, 2019	180 Days
USA Leaching Procedure - Method: LTM-GEN-7010 Leaching Procedure for Soils & Solid Wastes	Sydney	Oct 09, 2019	14 Days

<b>Company Name:</b> GHD Pty Ltd NSW	<b>Order No.:</b> 12511195	<b>Received:</b> Oct 4, 2019 9:57 AM
<b>Address:</b> Level 15, 133 Castlereagh Street Sydney NSW 2000	<b>Report #:</b> 680795	<b>Due:</b> Oct 14, 2019
	<b>Phone:</b> 02 9239 7100	<b>Priority:</b> 5 Day
	<b>Fax:</b> 02 9239 7199	<b>Contact Name:</b> Michelle Rodrigo
<b>Project Name:</b> ADDITIONAL - TOWNSON AND BURDEKIN RD		
<b>Project ID:</b> 12511195		

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Nickel	USA Leaching Procedure
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	BH12_0.4-0.5	Sep 04, 2019		US Leachate	S19-Oc07706	X	X
<b>Test Counts</b>						1	1

**Internal Quality Control Review and Glossary**
**General**

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Heavy Metals</b>										
Nickel				mg/L	< 0.01		0.01	Pass		
<b>LCS - % Recovery</b>										
<b>Heavy Metals</b>										
Nickel				%	106		70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
<b>Spike - % Recovery</b>										
<b>Heavy Metals</b>										
Nickel					Result 1					
Nickel				S19-Oc16982	NCP	%	97	70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
<b>Duplicate</b>										
<b>Heavy Metals</b>										
Nickel				S19-Oc07706	CP	mg/L	0.07	0.07	5.0	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
C01	Leachate Fluid Key: 1 - pH 5.0; 2 - pH 2.9; 3 - pH 9.2; 4 - Reagent (DI) water; 5 - Client sample, 6 - other

**Authorised By**

Alena Bounkeua	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (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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## CHAIN OF CUSTODY RECORD

Page 1 of 1

<b>CLIENT DETAILS</b>		Page <u>1</u> of <u>1</u>	
Company Name : <b>GHD Pty Ltd, Sydney</b>		Contact Name : <b>Terry Nham</b>	Purchase Order : <b>12511195</b>
Office Address : <b>Level 15, 133 Castlereagh Street, Sydney NSW 2000</b>		Project Manager : <b>Henry Luo</b>	PROJECT Number : <b>12511195</b>
Email for results : <b>terry.nham@ghd.com henry.luo@ghd.com</b>		PROJECT Name : <b>Townson Road</b>	Data output format: <b>ESDAT</b>
Eurofins   mgt DI water batch number:		COC Number :	
		Eurofins   mgt quote ID : <b>GHD Rates 2020</b>	

Special Directions & Comments :	Analytes										Some common holding times (with correct preservation). For further information contact the lab																				
	TRH / BTEXN / PAH / 8 Metals (Suite B7)	OCP / OPP / PCB (Suite B15)	Total Organic Carbon (TOC)	PFAS (Full Suite)	8 Metals	BTEXN / TRH C6-C10	Total Suspended Solids (TSS)	Total Dissolved Solids (TDS)	Total N, Total P (B19A)	Cation Suite (BH11C)	Anion Suite (B11E)	Waters				Soils															
												BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days	TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days	Heavy Metals	6 months	Heavy Metals	6 months	Mercury, CrVI	28 days	Mercury, CrVI	28 days	Microbiological testing	24 hours	Microbiological testing	72 hours

Sample ID	Date	Matrix	TRH / BTEXN / PAH / 8 Metals (Suite B7)	OCP / OPP / PCB (Suite B15)	Total Organic Carbon (TOC)	PFAS (Full Suite)	8 Metals	BTEXN / TRH C6-C10	Total Suspended Solids (TSS)	Total Dissolved Solids (TDS)	Total N, Total P (B19A)	Cation Suite (BH11C)	Anion Suite (B11E)	Containers:								Sample comments:		
														500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag			
1	29/1/20	Water	X											2				2	1					
2			X											2				2	1					
3			X											2				2	1					
4			X											2				2	1					
5			X	X					X	X	X			1				2	1					
6			X	X					X	X	X			2				2	1					
7			X						X					2				2	1					
8									Please send to ALS with attached COC									2	1					
9		Soil	X	X	X																		1	
10			X	X	X																		2	
11			X																				1	
12		Water												1										
13														1										
14														1		1								
15																								
16																							2	
																							2	

Relinquished By: <b>Terry Nham - GHD</b>		Received By: <b>Lupau</b>		Turn around time		Method Of Shipment		Temperature on arrival:	
Date & Time : <b>29/1/2020</b>		Date & Time : <b>29/01/20 2:36 PM</b>		1 DAY <input type="checkbox"/> 2 DAY <input type="checkbox"/> 3 DAY <input type="checkbox"/>		<input type="checkbox"/> Courier <input checked="" type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal Courier Consignment # :		<b>2.30°C</b>	
Signature:		Signature:		5 DAY <input checked="" type="checkbox"/> 10 DAY <input type="checkbox"/> Other: _____				Report number: <b>699019</b>	

## CHAIN OF CUSTODY RECORD

Page 1 of 1

<b>CLIENT DETAILS</b>		Page <u>1</u> of <u>1</u>	
Company Name : <b>GHD Pty Ltd, Sydney</b>		Contact Name : <b>Terry Nham</b>	Purchase Order : <b>12511195</b>
Office Address : <b>Level 15, 133 Castlereagh Street, Sydney NSW 2000</b>		Project Manager : <b>Henry Luo</b>	PROJECT Number : <b>12511195</b>
Email for results : <b>terry.nham@ghd.com henry.luo@ghd.com</b>		PROJECT Name : <b>Townson Road</b>	Data output format: <b>ESDAT</b>
Eurofins   mgt DI water batch number:		COC Number :	
		Eurofins   mgt quote ID : <b>GHD Rates 2020</b>	

Special Directions & Comments :	Analytes										Some common holding times (with correct preservation). For further information contact the lab																				
	TRH / BTEXN / PAH / 8 Metals (Suite B7)	OCP / OPP / PCB (Suite B15)	Total Organic Carbon (TOC)	PFAS (Full Suite)	8 Metals	BTEXN / TRH C6-C10	Total Suspended Solids (TSS)	Total Dissolved Solids (TDS)	Total N, Total P (B19A)	Cation Suite (BH11C)	Anion Suite (B11E)	Waters				Soils															
												BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days	TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days	Heavy Metals	6 months	Heavy Metals	6 months	Mercury, CrVI	28 days	Mercury, CrVI	28 days	Microbiological testing	24 hours	Microbiological testing	72 hours

Sample ID	Date	Matrix	TRH / BTEXN / PAH / 8 Metals (Suite B7)	OCP / OPP / PCB (Suite B15)	Total Organic Carbon (TOC)	PFAS (Full Suite)	8 Metals	BTEXN / TRH C6-C10	Total Suspended Solids (TSS)	Total Dissolved Solids (TDS)	Total N, Total P (B19A)	Cation Suite (BH11C)	Anion Suite (B11E)	Containers:								Sample comments:		
														500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag			
1	29/1/20	Water	X											2				2	1					
2			X											2				2	1					
3			X											2				2	1					
4			X											2				2	1					
5			X	X					X	X	X			1				2	1					
6			X	X					X	X	X			2				2	1					
7			X						X					2				2	1					
8									Please send to ALS with attached COC						2			2	1					
9		Soil	X	X	X																		1	
10			X	X	X																		2	
11			X																				1	
12		Water												1										
13														1										
14														1		1								
15																								
16																							2	
																							2	

Relinquished By: <b>Terry Nham - GHD</b>		Received By: <b>Lupau</b>		Turn around time		Method Of Shipment		Temperature on arrival:	
Date & Time : <b>29/1/2020</b>		Date & Time : <b>29/01/20 2:36 PM</b>		1 DAY <input type="checkbox"/> 2 DAY <input type="checkbox"/> 3 DAY <input type="checkbox"/>		<input type="checkbox"/> Courier <input checked="" type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		<b>2.30°C</b>	
Signature:		Signature:		5 DAY <input checked="" type="checkbox"/> 10 DAY <input type="checkbox"/> Other: <input type="checkbox"/>		Courier Consignment # :		<b>699019</b>	



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Level 15, 133 Castlereagh Street  
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NSW 2000



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The results of the tests, calibrations and/or  
measurements included in this document are traceable  
to Australian/national standards.

Attention: **Henry Luo**

Report **699019-S**  
Project name **TOWNSON ROAD**  
Project ID **12511195**  
Received Date **Jan 29, 2020**

Client Sample ID			SED01	SED04	QC02
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S20-Ja28325	S20-Ja28326	S20-Ja28327
Date Sampled			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Test/Reference	LOR	Unit			
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>					
TRH C6-C9	20	mg/kg	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	87	110	< 50
TRH C10-C36 (Total)	50	mg/kg	87	110	< 50
<b>BTEX</b>					
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	138	111	77
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>					
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	110	120	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	110	120	< 100
<b>Polycyclic Aromatic Hydrocarbons</b>					
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5

Client Sample ID			SED01	SED04	QC02
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S20-Ja28325	S20-Ja28326	S20-Ja28327
Date Sampled			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Test/Reference	LOR	Unit			
<b>Polycyclic Aromatic Hydrocarbons</b>					
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	79	88	94
p-Terphenyl-d14 (surr.)	1	%	86	95	92
<b>Organochlorine Pesticides</b>					
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	-
Toxaphene	1	mg/kg	< 1	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-
Dibutylchloroendate (surr.)	1	%	107	124	-
Tetrachloro-m-xylene (surr.)	1	%	70	66	-
<b>Organophosphorus Pesticides</b>					
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	-
Coumaphos	2	mg/kg	< 2	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	-

Client Sample ID			SED01	SED04	QC02
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S20-Ja28325	S20-Ja28326	S20-Ja28327
Date Sampled			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Test/Reference	LOR	Unit			
<b>Organophosphorus Pesticides</b>					
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	-
EPN	0.2	mg/kg	< 0.2	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	-
Monocrotophos	2	mg/kg	< 2	< 2	-
Naled	0.2	mg/kg	< 0.2	< 0.2	-
Omethoate	2	mg/kg	< 2	< 2	-
Phorate	0.2	mg/kg	< 0.2	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	-
Triphenylphosphate (surr.)	1	%	103	127	-
<b>Polychlorinated Biphenyls</b>					
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	-
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	-
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	-
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	-
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	-
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	-
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	-
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	-
Dibutylchloroendate (surr.)	1	%	107	124	-
Tetrachloro-m-xylene (surr.)	1	%	70	66	-
<b>Total Organic Carbon</b>					
Total Organic Carbon	0.1	%	2.7	4.9	-
<b>% Moisture</b>					
% Moisture	1	%	25	35	23
<b>Heavy Metals</b>					
Arsenic	2	mg/kg	4.8	7.2	4.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	29	19	22
Copper	5	mg/kg	69	39	47
Lead	5	mg/kg	28	34	27
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	20	15	18
Zinc	5	mg/kg	350	290	240

Client Sample ID			SED01	SED04	QC02
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S20-Ja28325	S20-Ja28326	S20-Ja28327
Date Sampled			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Test/Reference	LOR	Unit			
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>					
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	5	ug/kg	-	< 5	-
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	5	ug/kg	-	< 5	-
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	5	ug/kg	-	< 5	-
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	5	ug/kg	-	< 5	-
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	5	ug/kg	-	< 5	-
Perfluorononanoic acid (PFNA) <sup>N11</sup>	5	ug/kg	-	< 5	-
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	5	ug/kg	-	< 5	-
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	5	ug/kg	-	< 5	-
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	5	ug/kg	-	< 5	-
Perfluorotridecanoic acid (PFTrDA) <sup>N15</sup>	5	ug/kg	-	< 5	-
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	5	ug/kg	-	< 5	-
13C4-PFBA (surr.)	1	%	-	112	-
13C5-PFPeA (surr.)	1	%	-	147	-
13C5-PFHxA (surr.)	1	%	-	150	-
13C4-PFHpA (surr.)	1	%	-	145	-
13C8-PFOA (surr.)	1	%	-	147	-
13C5-PFNA (surr.)	1	%	-	102	-
13C6-PFDA (surr.)	1	%	-	94	-
13C2-PFUnDA (surr.)	1	%	-	90	-
13C2-PFDoDA (surr.)	1	%	-	91	-
13C2-PFTeDA (surr.)	1	%	-	53	-
<b>Perfluoroalkyl sulfonamido substances</b>					
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	5	ug/kg	-	< 5	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	5	ug/kg	-	< 5	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	5	ug/kg	-	< 5	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	5	ug/kg	-	< 5	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	5	ug/kg	-	< 5	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	10	ug/kg	-	< 10	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	10	ug/kg	-	< 10	-
13C8-FOSA (surr.)	1	%	-	80	-
D3-N-MeFOSA (surr.)	1	%	-	52	-
D5-N-EtFOSA (surr.)	1	%	-	59	-
D7-N-MeFOSE (surr.)	1	%	-	67	-
D9-N-EtFOSE (surr.)	1	%	-	36	-
D5-N-EtFOSAA (surr.)	1	%	-	61	-
D3-N-MeFOSAA (surr.)	1	%	-	83	-
<b>Perfluoroalkyl sulfonic acids (PFSAs)</b>					
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	5	ug/kg	-	< 5	-
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	5	ug/kg	-	< 5	-
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	5	ug/kg	-	< 5	-
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	5	ug/kg	-	< 5	-
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	5	ug/kg	-	< 5	-
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	5	ug/kg	-	< 5	-
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	5	ug/kg	-	<sup>N09</sup> 23	-
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	5	ug/kg	-	< 5	-
13C3-PFBS (surr.)	1	%	-	101	-

Client Sample ID			SED01	SED04	QC02
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S20-Ja28325	S20-Ja28326	S20-Ja28327
Date Sampled			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Test/Reference	LOR	Unit			
<b>Perfluoroalkyl sulfonic acids (PFSA)</b>					
18O2-PFHxS (surr.)	1	%	-	104	-
13C8-PFOS (surr.)	1	%	-	89	-
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	5	ug/kg	-	< 5	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	10	ug/kg	-	< 10	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	5	ug/kg	-	< 5	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	5	ug/kg	-	< 5	-
13C2-4:2 FTSA (surr.)	1	%	-	98	-
13C2-6:2 FTSA (surr.)	1	%	-	144	-
13C2-8:2 FTSA (surr.)	1	%	-	86	-
<b>PFASs Summations</b>					
Sum (PFHxS + PFOS)*	5	ug/kg	-	23	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	23	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	23	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	23	-
Sum of PFASs (n=30)*	50	ug/kg	-	< 50	-

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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>
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 31, 2020	14 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 31, 2020	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 31, 2020	14 Days
Eurofins   mgt Suite B7 (filtered metals)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 31, 2020	
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Jan 31, 2020	14 Days
Eurofins   mgt Suite B15			
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)	Melbourne	Jan 31, 2020	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8081)	Melbourne	Jan 31, 2020	14 Days
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)	Melbourne	Jan 31, 2020	28 Days
Total Organic Carbon - Method: LTM-INO-4060 Total Organic Carbon in water and soil	Melbourne	Feb 03, 2020	28 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Melbourne	Jan 29, 2020	14 Days
Eurofins   mgt Suite B7			
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Jan 31, 2020	180 Days
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Jan 29, 2020	180 Days
Perfluoroalkyl sulfonamido substances - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Jan 29, 2020	180 Days
Perfluoroalkyl sulfonic acids (PFASs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Feb 05, 2020	180 Days
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Feb 05, 2020	180 Days

### Australia

**Melbourne**  
6 Monterey Road  
Dandenong South VIC 3175  
Phone : +61 3 8564 5000  
NATA # 1261  
Site # 1254 & 14271

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Phone : +61 2 9900 8400  
NATA # 1261 Site # 18217

**Brisbane**  
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NATA # 1261 Site # 20794

**Perth**  
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NATA # 1261  
Site # 23736

### New Zealand

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IANZ # 1327

**Christchurch**  
43 Detroit Drive  
Rolleston, Christchurch 7675  
Phone : 0800 856 450  
IANZ # 1290

**Company Name:** GHD Pty Ltd NSW  
**Address:** Level 15, 133 Castlereagh Street  
Sydney  
NSW 2000

**Order No.:** 12511195  
**Report #:** 699019  
**Phone:** 02 9239 7100  
**Fax:** 02 9239 7199

**Received:** Jan 29, 2020 2:36 PM  
**Due:** Feb 5, 2020  
**Priority:** 5 Day  
**Contact Name:** Henry Luo

**Project Name:** TOWNSON ROAD  
**Project ID:** 12511195

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Total Dissolved Solids Dried at 180°C ± 2°C	Total Organic Carbon	Total Suspended Solids Dried at 103–105°C	Metals M8	Eurofins   mgt Suite B15	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7 (filtered metals)	BTEXN and Volatile TRH	Eurofins   mgt Suite B19A: Total N (TKN, NOx), Total P	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X	X	X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>																
<b>Brisbane Laboratory - NATA Site # 20794</b>																X
<b>Perth Laboratory - NATA Site # 23736</b>																
<b>External Laboratory</b>																
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	BH12	Jan 29, 2020		Water	S20-Ja28318								X			X
2	BH09	Jan 29, 2020		Water	S20-Ja28319								X			X
3	BH08	Jan 29, 2020		Water	S20-Ja28320								X			X
4	BH06	Jan 29, 2020		Water	S20-Ja28321								X			X
5	SW01	Jan 29, 2020		Water	S20-Ja28322	X	X	X	X	X				X		
6	SW04	Jan 29, 2020		Water	S20-Ja28323	X	X	X	X	X				X		X
7	QC01	Jan 29, 2020		Water	S20-Ja28324								X			X
8	SED01	Jan 29, 2020		Soil	S20-Ja28325		X		X	X	X					
9	SED04	Jan 29, 2020		Soil	S20-Ja28326		X		X	X	X					X
10	QC02	Jan 29, 2020		Soil	S20-Ja28327					X	X					

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### New Zealand

**Auckland**  
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**Christchurch**  
43 Detroit Drive  
Rolleston, Christchurch 7675  
Phone : 0800 856 450  
IANZ # 1290

**Company Name:** GHD Pty Ltd NSW  
**Address:** Level 15, 133 Castlereagh Street  
Sydney  
NSW 2000  
**Project Name:** TOWNSON ROAD  
**Project ID:** 12511195

**Order No.:** 12511195  
**Report #:** 699019  
**Phone:** 02 9239 7100  
**Fax:** 02 9239 7199

**Received:** Jan 29, 2020 2:36 PM  
**Due:** Feb 5, 2020  
**Priority:** 5 Day  
**Contact Name:** Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Total Dissolved Solids Dried at 180°C ± 2°C	Total Organic Carbon	Total Suspended Solids Dried at 103–105°C	Metals M8	Eurofins   mgt Suite B15	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7 (filtered metals)	BTEXN and Volatile TRH	Eurofins   Total P NOx), Total P	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X	X	X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>																
<b>Brisbane Laboratory - NATA Site # 20794</b>																X
<b>Perth Laboratory - NATA Site # 23736</b>																
11	RB01	Jan 29, 2020		Water	S20-Ja28328											X
12	RB02	Jan 29, 2020		Water	S20-Ja28329											X
13	RB03	Jan 29, 2020		Water	S20-Ja28330				X							X
14	TRIP BLANK	Jan 29, 2020		Water	S20-Ja28331									X		
15	TRIP SPIKE	Jan 29, 2020		Water	S20-Ja28332									X		
<b>Test Counts</b>						2	2	2	1	4	3	5	5	2	2	10



**Internal Quality Control Review and Glossary**
**General**

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</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	
<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	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
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>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>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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	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	
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	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/kg	< 0.1		0.1	Pass	
Total PCB*	mg/kg	< 0.1		0.1	Pass	
<b>Method Blank</b>						
Total Organic Carbon	%	< 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>LCS - % Recovery</b>						
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	%	115		70-130	Pass	
TRH C10-C14	%	81		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>BTEX</b>						
Benzene	%	112		70-130	Pass	
Toluene	%	118		70-130	Pass	
Ethylbenzene	%	117		70-130	Pass	
m&p-Xylenes	%	115		70-130	Pass	
Xylenes - Total	%	117		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene	%	112		70-130	Pass	
TRH C6-C10	%	107		70-130	Pass	
TRH >C10-C16	%	76		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Polycyclic Aromatic Hydrocarbons</b>						
Acenaphthene	%	85		70-130	Pass	
Acenaphthylene	%	92		70-130	Pass	
Anthracene	%	79		70-130	Pass	
Benz(a)anthracene	%	88		70-130	Pass	
Benzo(a)pyrene	%	90		70-130	Pass	
Benzo(b&j)fluoranthene	%	84		70-130	Pass	
Benzo(g,h,i)perylene	%	78		70-130	Pass	
Benzo(k)fluoranthene	%	88		70-130	Pass	
Chrysene	%	85		70-130	Pass	
Dibenz(a,h)anthracene	%	79		70-130	Pass	
Fluoranthene	%	83		70-130	Pass	
Fluorene	%	86		70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	79		70-130	Pass	
Naphthalene	%	101		70-130	Pass	
Phenanthrene	%	83		70-130	Pass	
Pyrene	%	84		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	%	114		70-130	Pass	
4,4'-DDD	%	128		70-130	Pass	
4,4'-DDE	%	110		70-130	Pass	
4,4'-DDT	%	82		70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
a-BHC	%	117			70-130	Pass		
Aldrin	%	116			70-130	Pass		
b-BHC	%	124			70-130	Pass		
d-BHC	%	129			70-130	Pass		
Dieldrin	%	121			70-130	Pass		
Endosulfan I	%	121			70-130	Pass		
Endosulfan II	%	100			70-130	Pass		
Endosulfan sulphate	%	106			70-130	Pass		
Endrin	%	100			70-130	Pass		
Endrin aldehyde	%	98			70-130	Pass		
Endrin ketone	%	121			70-130	Pass		
g-BHC (Lindane)	%	128			70-130	Pass		
Heptachlor	%	113			70-130	Pass		
Heptachlor epoxide	%	75			70-130	Pass		
Hexachlorobenzene	%	107			70-130	Pass		
Methoxychlor	%	97			70-130	Pass		
<b>LCS - % Recovery</b>								
<b>Organophosphorus Pesticides</b>								
Diazinon	%	92			70-130	Pass		
Dimethoate	%	83			70-130	Pass		
Ethion	%	108			70-130	Pass		
Fenitrothion	%	89			70-130	Pass		
Methyl parathion	%	99			70-130	Pass		
Mevinphos	%	92			70-130	Pass		
<b>LCS - % Recovery</b>								
<b>Polychlorinated Biphenyls</b>								
Aroclor-1260	%	105			70-130	Pass		
<b>LCS - % Recovery</b>								
Total Organic Carbon	%	104			70-130	Pass		
<b>LCS - % Recovery</b>								
<b>Heavy Metals</b>								
Arsenic	%	115			80-120	Pass		
Cadmium	%	102			80-120	Pass		
Chromium	%	112			80-120	Pass		
Copper	%	113			80-120	Pass		
Lead	%	104			80-120	Pass		
Mercury	%	107			75-125	Pass		
Nickel	%	109			80-120	Pass		
Zinc	%	111			80-120	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1				
TRH C6-C9	M20-Ja31020	NCP	%	110		70-130	Pass	
TRH C10-C14	M20-Ja32079	NCP	%	91		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>BTEX</b>				Result 1				
Benzene	M20-Ja31020	NCP	%	111		70-130	Pass	
Toluene	M20-Ja31020	NCP	%	98		70-130	Pass	
Ethylbenzene	M20-Ja31020	NCP	%	127		70-130	Pass	
m&p-Xylenes	M20-Ja31020	NCP	%	130		70-130	Pass	
o-Xylene	M20-Ja31020	NCP	%	129		70-130	Pass	
Xylenes - Total	M20-Ja31020	NCP	%	130		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1				

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Naphthalene	M20-Ja31020	NCP	%	110		70-130	Pass	
TRH C6-C10	M20-Ja31020	NCP	%	109		70-130	Pass	
TRH >C10-C16	M20-Ja32079	NCP	%	82		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1				
Acenaphthene	M20-Ja27240	NCP	%	99		70-130	Pass	
Acenaphthylene	M20-Ja27240	NCP	%	103		70-130	Pass	
Anthracene	M20-Ja27240	NCP	%	107		70-130	Pass	
Benz(a)anthracene	M20-Ja27240	NCP	%	111		70-130	Pass	
Benzo(a)pyrene	M20-Ja27240	NCP	%	127		70-130	Pass	
Benzo(b&j)fluoranthene	M20-Ja27240	NCP	%	127		70-130	Pass	
Benzo(g,h,i)perylene	M20-Ja27240	NCP	%	79		70-130	Pass	
Benzo(k)fluoranthene	M20-Ja27240	NCP	%	101		70-130	Pass	
Chrysene	M20-Ja27240	NCP	%	78		70-130	Pass	
Dibenz(a,h)anthracene	M20-Ja27240	NCP	%	96		70-130	Pass	
Fluoranthene	M20-Ja27240	NCP	%	102		70-130	Pass	
Fluorene	M20-Ja27240	NCP	%	110		70-130	Pass	
Indeno(1,2,3-cd)pyrene	M20-Ja27240	NCP	%	102		70-130	Pass	
Naphthalene	M20-Ja27240	NCP	%	91		70-130	Pass	
Phenanthrene	M20-Ja27240	NCP	%	98		70-130	Pass	
Pyrene	M20-Ja27240	NCP	%	102		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Organochlorine Pesticides</b>				Result 1				
Chlordanes - Total	M20-Ja30076	NCP	%	101		70-130	Pass	
4,4'-DDD	M20-Ja30076	NCP	%	119		70-130	Pass	
4,4'-DDE	M20-Ja30076	NCP	%	113		70-130	Pass	
a-BHC	M20-Ja30076	NCP	%	118		70-130	Pass	
Aldrin	M20-Ja30076	NCP	%	114		70-130	Pass	
b-BHC	M20-Ja30076	NCP	%	83		70-130	Pass	
d-BHC	M20-Ja30076	NCP	%	98		70-130	Pass	
Dieldrin	M20-Ja30076	NCP	%	106		70-130	Pass	
Endosulfan I	M20-Ja30076	NCP	%	129		70-130	Pass	
Endosulfan II	M20-Ja30076	NCP	%	102		70-130	Pass	
Endosulfan sulphate	M20-Ja30076	NCP	%	72		70-130	Pass	
Endrin	M20-Ja30076	NCP	%	80		70-130	Pass	
Endrin aldehyde	M20-Ja30076	NCP	%	89		70-130	Pass	
Endrin ketone	M20-Ja30076	NCP	%	85		70-130	Pass	
g-BHC (Lindane)	M20-Ja30076	NCP	%	114		70-130	Pass	
Heptachlor	M20-Ja30076	NCP	%	77		70-130	Pass	
Heptachlor epoxide	M20-Ja30076	NCP	%	111		70-130	Pass	
Hexachlorobenzene	M20-Ja30076	NCP	%	116		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Polychlorinated Biphenyls</b>				Result 1				
Aroclor-1016	M20-Ja30810	NCP	%	88		70-130	Pass	
Aroclor-1260	M20-Ja30810	NCP	%	90		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Heavy Metals</b>				Result 1				
Arsenic	M20-Ja30997	NCP	%	73		75-125	Fail	Q08
Cadmium	M20-Ja30997	NCP	%	67		75-125	Fail	Q08
Chromium	M20-Ja30997	NCP	%	121		75-125	Pass	
Copper	M20-Ja30997	NCP	%	983		75-125	Fail	Q08
Lead	M20-Ja30997	NCP	%	483		75-125	Fail	Q08
Mercury	M20-Ja30997	NCP	%	119		70-130	Pass	
Nickel	M20-Ja30997	NCP	%	55		75-125	Fail	Q08

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH C6-C9	S20-Ja24639	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M20-Ja32068	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M20-Ja32068	NCP	mg/kg	96	120	25	30%	Pass	
TRH C29-C36	M20-Ja32068	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
<b>Duplicate</b>									
<b>BTEX</b>				Result 1	Result 2	RPD			
Benzene	S20-Ja24639	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S20-Ja24639	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S20-Ja24639	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S20-Ja24639	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S20-Ja24639	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S20-Ja24639	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD			
Naphthalene	S20-Ja24639	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S20-Ja24639	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M20-Ja32068	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M20-Ja32068	NCP	mg/kg	110	130	23	30%	Pass	
TRH >C34-C40	M20-Ja32068	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
<b>Duplicate</b>									
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD			
Acenaphthene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S20-Ja27226	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
<b>Duplicate</b>									
<b>Organochlorine Pesticides</b>				Result 1	Result 2	RPD			
Chlordanes - Total	S20-Ja27226	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4,4'-DDD	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDE	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDT	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Endrin aldehyde	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S20-Ja27226	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S20-Ja27226	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfthion	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S20-Ja27226	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S20-Ja27226	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S20-Ja27226	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Total Organic Carbon	S20-Ja28325	CP	%	2.7	2.5	6.6	30%	Pass
% Moisture	M20-Ja28535	NCP	%	30	29	5.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S20-Ja28326	CP	mg/kg	7.2	7.2	1.0	30%	Pass
Cadmium	S20-Ja28326	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S20-Ja28326	CP	mg/kg	19	19	<1	30%	Pass
Copper	S20-Ja28326	CP	mg/kg	39	39	<1	30%	Pass
Lead	S20-Ja28326	CP	mg/kg	34	35	1.0	30%	Pass



Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Mercury	S20-Ja28326	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S20-Ja28326	CP	mg/kg	15	15	<1	30%	Pass
Zinc	S20-Ja28326	CP	mg/kg	290	290	<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
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

**Authorised By**

Alena Bounkeua	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Julie Kay	Senior Analyst-Inorganic (VIC)
Sarah McCallion	Senior Analyst-PFAS (QLD)
Scott Beddoes	Senior Analyst-Inorganic (VIC)


**Glenn Jackson  
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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 NSW 2000



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 Accreditation Number 1261  
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 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

Attention: **Henry Luo**

Report **699019-W**  
 Project name **TOWNSON ROAD**  
 Project ID **12511195**  
 Received Date **Jan 29, 2020**

Client Sample ID			BH12 Water	BH09 Water	BH08 Water	BH06 Water
Sample Matrix			S20-Ja28318	S20-Ja28319	S20-Ja28320	S20-Ja28321
Eurofins Sample No.			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Date Sampled						
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
<b>BTEX</b>						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	93	95	95	95
<b>Polycyclic Aromatic Hydrocarbons</b>						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene <sup>N07</sup>	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			BH12 Water S20-Ja28318 Jan 29, 2020	BH09 Water S20-Ja28319 Jan 29, 2020	BH08 Water S20-Ja28320 Jan 29, 2020	BH06 Water S20-Ja28321 Jan 29, 2020
Sample Matrix	LOR	Unit				
Eurofins Sample No.						
Date Sampled						
Test/Reference						
<b>Polycyclic Aromatic Hydrocarbons</b>						
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	66	80	95	150
p-Terphenyl-d14 (surr.)	1	%	82	100	119	136
<b>Heavy Metals</b>						
Arsenic (filtered)	0.001	mg/L	< 0.001	0.001	< 0.001	0.002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.014	0.001	0.018	0.021
Lead (filtered)	0.001	mg/L	0.001	< 0.001	0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.005	0.005	0.006	0.008
Zinc (filtered)	0.005	mg/L	0.034	0.031	0.049	0.034
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTTrDA) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTTeDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	108	127	121	110
13C5-PFPeA (surr.)	1	%	87	98	104	77
13C5-PFHxA (surr.)	1	%	110	117	119	113
13C4-PFHpA (surr.)	1	%	100	104	112	109
13C8-PFOA (surr.)	1	%	99	101	106	98
13C5-PFNA (surr.)	1	%	103	102	104	99
13C6-PFDA (surr.)	1	%	97	96	93	87
13C2-PFUnDA (surr.)	1	%	141	134	131	129
13C2-PFDoDA (surr.)	1	%	110	95	89	93
13C2-PFTTeDA (surr.)	1	%	82	51	53	69
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			BH12 Water	BH09 Water	BH08 Water	BH06 Water
Sample Matrix			S20-Ja28318	S20-Ja28319	S20-Ja28320	S20-Ja28321
Eurofins Sample No.			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Date Sampled						
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl sulfonamido substances</b>						
13C8-FOSA (surr.)	1	%	95	91	98	98
D3-N-MeFOSA (surr.)	1	%	102	68	77	104
D5-N-EtFOSA (surr.)	1	%	147	94	104	132
D7-N-MeFOSE (surr.)	1	%	123	110	104	115
D9-N-EtFOSE (surr.)	1	%	127	106	103	121
D5-N-EtFOSAA (surr.)	1	%	77	64	64	64
D3-N-MeFOSAA (surr.)	1	%	85	72	76	72
<b>Perfluoroalkyl sulfonic acids (PFSA)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	104	104	116	106
18O2-PFHxS (surr.)	1	%	130	133	138	131
13C8-PFOS (surr.)	1	%	127	128	132	121
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	75	79	79	69
13C2-6:2 FTSA (surr.)	1	%	86	90	91	85
13C2-8:2 FTSA (surr.)	1	%	93	89	86	80
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			SW01 Water	SW04 Water	QC01 Water	RB01 Water
Sample Matrix			S20-Ja28322	S20-Ja28323	S20-Ja28324	S20-Ja28328
Eurofins Sample No.			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Date Sampled						
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	0.05	mg/L	< 0.05	< 0.05	< 0.05	-

Client Sample ID			SW01	SW04	QC01	RB01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ja28322	S20-Ja28323	S20-Ja28324	S20-Ja28328
Date Sampled			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
<b>BTEX</b>						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
4-Bromofluorobenzene (surr.)	1	%	93	94	98	-
<b>Polycyclic Aromatic Hydrocarbons</b>						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(b&j)fluoranthene <sup>N07</sup>	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Fluorobiphenyl (surr.)	1	%	67	72	61	-
p-Terphenyl-d14 (surr.)	1	%	74	88	72	-
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.001	mg/L	< 0.001	< 0.001	-	-
4,4'-DDD	0.0001	mg/L	< 0.0001	< 0.0001	-	-
4,4'-DDE	0.0001	mg/L	< 0.0001	< 0.0001	-	-
4,4'-DDT	0.0001	mg/L	< 0.0001	< 0.0001	-	-
a-BHC	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Aldrin	0.0001	mg/L	< 0.0001	< 0.0001	-	-
b-BHC	0.0001	mg/L	< 0.0001	< 0.0001	-	-
d-BHC	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Dieldrin	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Endosulfan I	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Endosulfan II	0.0001	mg/L	< 0.0001	< 0.0001	-	-

Client Sample ID			SW01	SW04	QC01	RB01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ja28322	S20-Ja28323	S20-Ja28324	S20-Ja28328
Date Sampled			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Endosulfan sulphate	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Endrin	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Endrin aldehyde	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Endrin ketone	0.0001	mg/L	< 0.0001	< 0.0001	-	-
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Heptachlor	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Heptachlor epoxide	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Hexachlorobenzene	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Methoxychlor	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Toxaphene	0.01	mg/L	< 0.01	< 0.01	-	-
Aldrin and Dieldrin (Total)*	0.0001	mg/L	< 0.0001	< 0.0001	-	-
DDT + DDE + DDD (Total)*	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	< 0.001	< 0.001	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	< 0.001	< 0.001	-	-
Dibutylchloroendate (surr.)	1	%	85	84	-	-
Tetrachloro-m-xylene (surr.)	1	%	54	75	-	-
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	-	-
Bolstar	0.002	mg/L	< 0.002	< 0.002	-	-
Chlorfenvinphos	0.002	mg/L	< 0.002	< 0.002	-	-
Chlorpyrifos	0.02	mg/L	< 0.02	< 0.02	-	-
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	-	-
Coumaphos	0.02	mg/L	< 0.02	< 0.02	-	-
Demeton-S	0.02	mg/L	< 0.02	< 0.02	-	-
Demeton-O	0.002	mg/L	< 0.002	< 0.002	-	-
Diazinon	0.002	mg/L	< 0.002	< 0.002	-	-
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	-	-
Dimethoate	0.002	mg/L	< 0.002	< 0.002	-	-
Disulfoton	0.002	mg/L	< 0.002	< 0.002	-	-
EPN	0.002	mg/L	< 0.002	< 0.002	-	-
Ethion	0.002	mg/L	< 0.002	< 0.002	-	-
Ethoprop	0.002	mg/L	< 0.002	< 0.002	-	-
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	-	-
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	-	-
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	-	-
Fenthion	0.002	mg/L	< 0.002	< 0.002	-	-
Malathion	0.002	mg/L	< 0.002	< 0.002	-	-
Merphos	0.002	mg/L	< 0.002	< 0.002	-	-
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	-	-
Mevinphos	0.002	mg/L	< 0.002	< 0.002	-	-
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	-	-
Naled	0.002	mg/L	< 0.002	< 0.002	-	-
Omethoate	0.002	mg/L	< 0.002	< 0.002	-	-
Phorate	0.002	mg/L	< 0.002	< 0.002	-	-
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	-	-
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	-	-
Ronnel	0.002	mg/L	< 0.002	< 0.002	-	-
Terbufos	0.002	mg/L	< 0.002	< 0.002	-	-
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	-	-

Client Sample ID			SW01	SW04	QC01	RB01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ja28322	S20-Ja28323	S20-Ja28324	S20-Ja28328
Date Sampled			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Tokuthion	0.002	mg/L	< 0.002	< 0.002	-	-
Trichloronate	0.002	mg/L	< 0.002	< 0.002	-	-
Triphenylphosphate (surr.)	1	%	88	86	-	-
<b>Polychlorinated Biphenyls</b>						
Aroclor-1016	0.001	mg/L	< 0.001	< 0.001	-	-
Aroclor-1221	0.001	mg/L	< 0.001	< 0.001	-	-
Aroclor-1232	0.001	mg/L	< 0.001	< 0.001	-	-
Aroclor-1242	0.001	mg/L	< 0.001	< 0.001	-	-
Aroclor-1248	0.001	mg/L	< 0.001	< 0.001	-	-
Aroclor-1254	0.001	mg/L	< 0.001	< 0.001	-	-
Aroclor-1260	0.001	mg/L	< 0.001	< 0.001	-	-
Total PCB*	0.001	mg/L	< 0.001	< 0.001	-	-
Dibutylchloroendate (surr.)	1	%	85	84	-	-
Tetrachloro-m-xylene (surr.)	1	%	54	75	-	-
<b>Nitrate &amp; Nitrite (as N)</b>						
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	2.6	-	-
<b>Phosphate total (as P)</b>						
Phosphate total (as P)	0.01	mg/L	< 0.01	< 0.01	-	-
<b>Total Dissolved Solids Dried at 180°C ± 2°C</b>						
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	530	410	-	-
<b>Total Kjeldahl Nitrogen (as N)</b>						
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.5	0.7	-	-
<b>Total Nitrogen (as N)*</b>						
Total Nitrogen (as N)*	0.2	mg/L	0.5	3.3	-	-
<b>Total Suspended Solids Dried at 103–105°C</b>						
Total Suspended Solids Dried at 103–105°C	1	mg/L	1.8	3.9	-	-
<b>Heavy Metals</b>						
Arsenic	0.001	mg/L	0.001	< 0.001	-	-
Arsenic (filtered)	0.001	mg/L	-	-	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Cadmium (filtered)	0.0002	mg/L	-	-	< 0.0002	-
Chromium	0.001	mg/L	< 0.001	< 0.001	-	-
Chromium (filtered)	0.001	mg/L	-	-	< 0.001	-
Copper	0.001	mg/L	0.001	0.003	-	-
Copper (filtered)	0.001	mg/L	-	-	< 0.001	-
Lead	0.001	mg/L	< 0.001	< 0.001	-	-
Lead (filtered)	0.001	mg/L	-	-	< 0.001	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Mercury (filtered)	0.0001	mg/L	-	-	< 0.0001	-
Nickel	0.001	mg/L	0.001	0.002	-	-
Nickel (filtered)	0.001	mg/L	-	-	< 0.001	-
Zinc	0.005	mg/L	0.009	0.015	-	-
Zinc (filtered)	0.005	mg/L	-	-	< 0.005	-
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	0.05	ug/L	-	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	0.01	ug/L	-	0.02	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	0.01	ug/L	-	0.03	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	0.01	ug/L	-	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	0.01	ug/L	-	0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA) <sup>N11</sup>	0.01	ug/L	-	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	0.01	ug/L	-	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	0.01	ug/L	-	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	0.01	ug/L	-	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA) <sup>N15</sup>	0.01	ug/L	-	< 0.01	< 0.01	< 0.01



Client Sample ID			SW01	SW04	QC01	RB01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ja28322	S20-Ja28323	S20-Ja28324	S20-Ja28328
Date Sampled			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	0.01	ug/L	-	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	-	116	113	58
13C5-PFPeA (surr.)	1	%	-	92	91	106
13C5-PFHxA (surr.)	1	%	-	97	107	123
13C4-PFHpA (surr.)	1	%	-	98	98	107
13C8-PFOA (surr.)	1	%	-	109	96	104
13C5-PFNA (surr.)	1	%	-	94	100	102
13C6-PFDA (surr.)	1	%	-	103	89	93
13C2-PFUnDA (surr.)	1	%	-	135	120	125
13C2-PFDoDA (surr.)	1	%	-	98	87	79
13C2-PFTeDA (surr.)	1	%	-	73	53	38
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	0.05	ug/L	-	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	0.05	ug/L	-	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	0.05	ug/L	-	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	0.05	ug/L	-	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	0.05	ug/L	-	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	0.05	ug/L	-	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	0.05	ug/L	-	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	-	89	83	68
D3-N-MeFOSA (surr.)	1	%	-	85	73	40
D5-N-EtFOSA (surr.)	1	%	-	112	98	61
D7-N-MeFOSE (surr.)	1	%	-	114	103	77
D9-N-EtFOSE (surr.)	1	%	-	111	98	75
D5-N-EtFOSAA (surr.)	1	%	-	67	61	56
D3-N-MeFOSAA (surr.)	1	%	-	81	73	68
<b>Perfluoroalkyl sulfonic acids (PFSAs)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	0.01	ug/L	-	0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	0.01	ug/L	-	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	0.01	ug/L	-	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	0.01	ug/L	-	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	0.01	ug/L	-	<sup>N09</sup> 0.03	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	0.01	ug/L	-	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	0.01	ug/L	-	<sup>N09</sup> 0.06	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	0.01	ug/L	-	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	-	99	108	104
18O2-PFHxS (surr.)	1	%	-	129	131	135
13C8-PFOS (surr.)	1	%	-	127	126	129
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	0.01	ug/L	-	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	0.05	ug/L	-	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	0.01	ug/L	-	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	0.01	ug/L	-	< 0.01	< 0.01	< 0.01

Client Sample ID			SW01 Water	SW04 Water	QC01 Water	RB01 Water
Sample Matrix			S20-Ja28322	S20-Ja28323	S20-Ja28324	S20-Ja28328
Eurofins Sample No.			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Date Sampled						
Test/Reference	LOR	Unit				
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
13C2-4:2 FTSA (surr.)	1	%	-	96	77	92
13C2-6:2 FTSA (surr.)	1	%	-	152	76	89
13C2-8:2 FTSA (surr.)	1	%	-	113	78	82
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	0.01	ug/L	-	0.09	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	-	0.07	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	-	0.1	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	-	0.16	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	-	0.16	< 0.1	< 0.1

Client Sample ID			RB02 Water	RB03 Water	TRIP BLANK Water	R20 TRIP SPIKE Water
Sample Matrix			S20-Ja28329	S20-Ja28330	S20-Ja28331	S20-Ja28332
Eurofins Sample No.			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Date Sampled						
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.01	mg/L	-	-	< 0.01	120
TRH C6-C10	0.02	mg/L	-	-	< 0.02	74
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	0.02	mg/L	-	-	< 0.02	-
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	0.02	mg/L	-	-	< 0.02	86
<b>BTEX</b>						
Benzene	0.001	mg/L	-	-	< 0.001	110
Toluene	0.001	mg/L	-	-	< 0.001	100
Ethylbenzene	0.001	mg/L	-	-	< 0.001	100
m&p-Xylenes	0.002	mg/L	-	-	< 0.002	100
o-Xylene	0.001	mg/L	-	-	< 0.001	110
Xylenes - Total	0.003	mg/L	-	-	< 0.003	100
4-Bromofluorobenzene (surr.)	1	%	-	-	92	99
<b>Heavy Metals</b>						
Arsenic	0.001	mg/L	-	< 0.001	-	-
Cadmium	0.0002	mg/L	-	< 0.0002	-	-
Chromium	0.001	mg/L	-	< 0.001	-	-
Copper	0.001	mg/L	-	< 0.001	-	-
Lead	0.001	mg/L	-	< 0.001	-	-
Mercury	0.0001	mg/L	-	< 0.0001	-	-
Nickel	0.001	mg/L	-	< 0.001	-	-
Zinc	0.005	mg/L	-	< 0.005	-	-
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	-	-
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorononanoic acid (PFNA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	-	-

Client Sample ID			RB02 Water	RB03 Water	TRIP BLANK Water	R20 TRIP SPIKE Water
Sample Matrix			S20-Ja28329	S20-Ja28330	S20-Ja28331	S20-Ja28332
Eurofins Sample No.			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Date Sampled						
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorotridecanoic acid (PFTTrDA) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
13C4-PFBA (surr.)	1	%	43	41	-	-
13C5-PFPeA (surr.)	1	%	105	110	-	-
13C5-PFHxA (surr.)	1	%	118	114	-	-
13C4-PFHpA (surr.)	1	%	103	99	-	-
13C8-PFOA (surr.)	1	%	100	100	-	-
13C5-PFNA (surr.)	1	%	105	101	-	-
13C6-PFDA (surr.)	1	%	96	92	-	-
13C2-PFUnDA (surr.)	1	%	141	129	-	-
13C2-PFDoDA (surr.)	1	%	94	86	-	-
13C2-PFTeDA (surr.)	1	%	57	50	-	-
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	-	-
13C8-FOSA (surr.)	1	%	76	73	-	-
D3-N-MeFOSA (surr.)	1	%	66	53	-	-
D5-N-EtFOSA (surr.)	1	%	88	67	-	-
D7-N-MeFOSE (surr.)	1	%	90	90	-	-
D9-N-EtFOSE (surr.)	1	%	96	86	-	-
D5-N-EtFOSAA (surr.)	1	%	61	56	-	-
D3-N-MeFOSAA (surr.)	1	%	75	71	-	-
<b>Perfluoroalkyl sulfonic acids (PFSA)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
13C3-PFBS (surr.)	1	%	111	110	-	-
18O2-PFHxS (surr.)	1	%	132	131	-	-
13C8-PFOS (surr.)	1	%	130	128	-	-

Client Sample ID			RB02 Water	RB03 Water	TRIP BLANK Water	R20 TRIP SPIKE Water
Sample Matrix			S20-Ja28329	S20-Ja28330	S20-Ja28331	S20-Ja28332
Eurofins Sample No.			Jan 29, 2020	Jan 29, 2020	Jan 29, 2020	Jan 29, 2020
Date Sampled						
Test/Reference	LOR	Unit				
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	-	-
13C2-4:2 FTSA (surr.)	1	%	88	93	-	-
13C2-6:2 FTSA (surr.)	1	%	91	89	-	-
13C2-8:2 FTSA (surr.)	1	%	82	83	-	-
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	-	-
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	-	-
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	-	-

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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>
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 30, 2020	7 Days
Total Recoverable Hydrocarbons - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 30, 2020	7 Days
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 30, 2020	7 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 30, 2020	14 Days
<b>Eurofins   mgt Suite B7 (filtered metals)</b>			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Jan 30, 2020	
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Jan 30, 2020	7 Days
Metals M8 filtered - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Jan 30, 2020	28 Days
<b>Eurofins   mgt Suite B15</b>			
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)	Melbourne	Jan 30, 2020	7 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8081)	Melbourne	Jan 30, 2020	7 Days
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)	Melbourne	Jan 30, 2020	7 Days
<b>Total Nitrogen Set (as N)</b>			
Nitrate & Nitrite (as N) - Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA	Melbourne	Jan 30, 2020	28 Days
Total Kjeldahl Nitrogen (as N) - Method: LTM-INO-4310 TKN in Waters & Soils by FIA	Melbourne	Jan 30, 2020	7 Days
<b>Eurofins   mgt Suite B19A: Total N (TKN, NOx), Total P</b>			
Phosphate total (as P) - Method: APHA 4500-P E. Phosphorus	Melbourne	Jan 30, 2020	28 Days
Total Dissolved Solids Dried at 180°C ± 2°C - Method: LTM-INO-4170 Total Dissolved Solids in Water	Melbourne	Jan 30, 2020	7 Days
Total Suspended Solids Dried at 103–105°C - Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry	Melbourne	Jan 30, 2020	7 Days
<b>Eurofins   mgt Suite B7</b>			
Metals M8 - Method:	Melbourne	Jan 31, 2020	180 Days
<b>Per- and Polyfluoroalkyl Substances (PFASs)</b>			
Perfluoroalkyl carboxylic acids (PFCAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Jan 31, 2020	14 Days
Perfluoroalkyl sulfonamido substances - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Jan 31, 2020	14 Days
Perfluoroalkyl sulfonic acids (PFASs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Jan 31, 2020	14 Days
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Jan 31, 2020	14 Days

### Australia

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**Company Name:** GHD Pty Ltd NSW  
**Address:** Level 15, 133 Castlereagh Street  
Sydney  
NSW 2000

**Order No.:** 12511195  
**Report #:** 699019  
**Phone:** 02 9239 7100  
**Fax:** 02 9239 7199

**Received:** Jan 29, 2020 2:36 PM  
**Due:** Feb 5, 2020  
**Priority:** 5 Day  
**Contact Name:** Henry Luo

**Project Name:** TOWNSON ROAD  
**Project ID:** 12511195

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Total Dissolved Solids Dried at 180°C ± 2°C	Total Organic Carbon	Total Suspended Solids Dried at 103–105°C	Metals M8	Eurofins   mgt Suite B15	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7 (filtered metals)	BTEXN and Volatile TRH	Eurofins   mgt Suite B19A: Total N (TKN, NOx), Total P	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X	X	X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>																
<b>Brisbane Laboratory - NATA Site # 20794</b>																X
<b>Perth Laboratory - NATA Site # 23736</b>																
<b>External Laboratory</b>																
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	BH12	Jan 29, 2020		Water	S20-Ja28318								X			X
2	BH09	Jan 29, 2020		Water	S20-Ja28319								X			X
3	BH08	Jan 29, 2020		Water	S20-Ja28320								X			X
4	BH06	Jan 29, 2020		Water	S20-Ja28321								X			X
5	SW01	Jan 29, 2020		Water	S20-Ja28322	X	X	X	X	X					X	
6	SW04	Jan 29, 2020		Water	S20-Ja28323	X	X	X	X	X					X	X
7	QC01	Jan 29, 2020		Water	S20-Ja28324								X			X
8	SED01	Jan 29, 2020		Soil	S20-Ja28325		X		X	X	X					
9	SED04	Jan 29, 2020		Soil	S20-Ja28326		X		X	X	X					X
10	QC02	Jan 29, 2020		Soil	S20-Ja28327					X	X					

### Australia

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**Company Name:** GHD Pty Ltd NSW  
**Address:** Level 15, 133 Castlereagh Street  
Sydney  
NSW 2000  
**Project Name:** TOWNSON ROAD  
**Project ID:** 12511195

**Order No.:** 12511195  
**Report #:** 699019  
**Phone:** 02 9239 7100  
**Fax:** 02 9239 7199

**Received:** Jan 29, 2020 2:36 PM  
**Due:** Feb 5, 2020  
**Priority:** 5 Day  
**Contact Name:** Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Total Dissolved Solids Dried at 180°C ± 2°C	Total Organic Carbon	Total Suspended Solids Dried at 103–105°C	Metals M8	Eurofins   mgt Suite B15	Moisture Set	Eurofins   mgt Suite B7	Eurofins   mgt Suite B7 (filtered metals)	BTEXN and Volatile TRH	Eurofins   Total P NOx), Total P	Per- and Polyfluoroalkyl Substances (PFASs)
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X	X	X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>																
<b>Brisbane Laboratory - NATA Site # 20794</b>																X
<b>Perth Laboratory - NATA Site # 23736</b>																
11	RB01	Jan 29, 2020		Water	S20-Ja28328											X
12	RB02	Jan 29, 2020		Water	S20-Ja28329											X
13	RB03	Jan 29, 2020		Water	S20-Ja28330				X							X
14	TRIP BLANK	Jan 29, 2020		Water	S20-Ja28331									X		
15	TRIP SPIKE	Jan 29, 2020		Water	S20-Ja28332									X		
<b>Test Counts</b>						2	2	2	1	4	3	5	5	2	2	10

**Internal Quality Control Review and Glossary**
**General**

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
<b>Method Blank</b>							
<b>BTEX</b>							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
<b>Method Blank</b>							
<b>Polycyclic Aromatic Hydrocarbons</b>							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
<b>Method Blank</b>							
<b>Organochlorine Pesticides</b>							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4,4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4,4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4,4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
<b>Method Blank</b>							
<b>Organophosphorus Pesticides</b>							
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.02			0.02	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
<b>Method Blank</b>							
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	mg/L	< 10			10	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 1			1	Pass	
<b>Method Blank</b>							
<b>Heavy Metals</b>							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Zinc	mg/L	< 0.005		0.005	Pass	
Zinc (filtered)	mg/L	< 0.005		0.005	Pass	
<b>Method Blank</b>						
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05		0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01		0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01		0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01		0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01		0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01		0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01		0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01		0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01		0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01		0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01		0.01	Pass	
<b>Method Blank</b>						
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05		0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05		0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05		0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05		0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05		0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05		0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05		0.05	Pass	
<b>Method Blank</b>						
<b>Perfluoroalkyl sulfonic acids (PFSAs)</b>						
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01		0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01		0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01		0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01		0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01		0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01		0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01		0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01		0.01	Pass	
<b>Method Blank</b>						
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01		0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05		0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01		0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01		0.01	Pass	
<b>LCS - % Recovery</b>						
<b>Heavy Metals</b>						
Arsenic	%	82		80-120	Pass	
Cadmium	%	82		80-120	Pass	
Chromium	%	83		80-120	Pass	
Copper	%	82		80-120	Pass	
Lead	%	88		80-120	Pass	
Mercury	%	82		75-125	Pass	
Nickel	%	82		80-120	Pass	
Zinc	%	83		80-120	Pass	
<b>LCS - % Recovery</b>						
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA)	%	106		50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	136		50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Perfluorohexanoic acid (PFHxA)	%	107			50-150	Pass		
Perfluoroheptanoic acid (PFHpA)	%	86			50-150	Pass		
Perfluorooctanoic acid (PFOA)	%	95			50-150	Pass		
Perfluorononanoic acid (PFNA)	%	106			50-150	Pass		
Perfluorodecanoic acid (PFDA)	%	84			50-150	Pass		
Perfluoroundecanoic acid (PFUnDA)	%	88			50-150	Pass		
Perfluorododecanoic acid (PFDoDA)	%	122			50-150	Pass		
Perfluorotridecanoic acid (PFTrDA)	%	107			50-150	Pass		
Perfluorotetradecanoic acid (PFTeDA)	%	113			50-150	Pass		
<b>LCS - % Recovery</b>								
<b>Perfluoroalkyl sulfonamido substances</b>								
Perfluorooctane sulfonamide (FOSA)	%	98			50-150	Pass		
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	78			50-150	Pass		
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	66			50-150	Pass		
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	94			50-150	Pass		
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	67			50-150	Pass		
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	94			50-150	Pass		
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	84			50-150	Pass		
<b>LCS - % Recovery</b>								
<b>Perfluoroalkyl sulfonic acids (PFSA's)</b>								
Perfluorobutanesulfonic acid (PFBS)	%	83			50-150	Pass		
Perfluorononanesulfonic acid (PFNS)	%	82			50-150	Pass		
Perfluoropropanesulfonic acid (PFPrS)	%	117			50-150	Pass		
Perfluoropentanesulfonic acid (PFPeS)	%	85			50-150	Pass		
Perfluorohexanesulfonic acid (PFHxS)	%	88			50-150	Pass		
Perfluoroheptanesulfonic acid (PFHpS)	%	88			50-150	Pass		
Perfluorooctanesulfonic acid (PFOS)	%	98			50-150	Pass		
Perfluorodecanesulfonic acid (PFDS)	%	73			50-150	Pass		
<b>LCS - % Recovery</b>								
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)</b>								
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	105			50-150	Pass		
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	98			50-150	Pass		
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	127			50-150	Pass		
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	95			50-150	Pass		
<b>Test</b>	<b>Lab Sample ID</b>	<b>QA Source</b>	<b>Units</b>	<b>Result 1</b>		<b>Acceptance Limits</b>	<b>Pass Limits</b>	<b>Qualifying Code</b>
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				<b>Result 1</b>				
Naphthalene	S20-Ja24648	NCP	%	101		70-130	Pass	
TRH C6-C10	S20-Ja24648	NCP	%	78		70-130	Pass	
TRH >C10-C16	M20-Ja29496	NCP	%	113		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				<b>Result 1</b>				
TRH C6-C9	S20-Ja24648	NCP	%	96		70-130	Pass	
TRH C10-C14	M20-Ja29496	NCP	%	113		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>BTEX</b>				<b>Result 1</b>				
Benzene	S20-Ja24648	NCP	%	95		70-130	Pass	
Toluene	S20-Ja24648	NCP	%	97		70-130	Pass	
Ethylbenzene	S20-Ja24648	NCP	%	94		70-130	Pass	
m&p-Xylenes	S20-Ja24648	NCP	%	96		70-130	Pass	
o-Xylene	S20-Ja24648	NCP	%	98		70-130	Pass	
Xylenes - Total	S20-Ja24648	NCP	%	97		70-130	Pass	
<b>Spike - % Recovery</b>								

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1				
Acenaphthene	M20-Ja27597	NCP	%	111		70-130	Pass	
Acenaphthylene	M20-Ja27597	NCP	%	106		70-130	Pass	
Anthracene	M20-Ja27597	NCP	%	110		70-130	Pass	
Benz(a)anthracene	M20-Ja27597	NCP	%	84		70-130	Pass	
Benzo(a)pyrene	M20-Ja27597	NCP	%	127		70-130	Pass	
Benzo(b&j)fluoranthene	M20-Ja27597	NCP	%	119		70-130	Pass	
Benzo(g,h,i)perylene	M20-Ja27597	NCP	%	90		70-130	Pass	
Benzo(k)fluoranthene	M20-Ja27597	NCP	%	127		70-130	Pass	
Chrysene	M20-Ja27597	NCP	%	128		70-130	Pass	
Dibenz(a,h)anthracene	M20-Ja27597	NCP	%	85		70-130	Pass	
Fluoranthene	M20-Ja27597	NCP	%	105		70-130	Pass	
Fluorene	M20-Ja27597	NCP	%	111		70-130	Pass	
Indeno(1,2,3-cd)pyrene	M20-Ja27597	NCP	%	95		70-130	Pass	
Naphthalene	M20-Ja27597	NCP	%	96		70-130	Pass	
Phenanthrene	M20-Ja27597	NCP	%	105		70-130	Pass	
Pyrene	M20-Ja27597	NCP	%	102		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Heavy Metals</b>				Result 1				
Arsenic (filtered)	S20-Ja28318	CP	%	94		70-130	Pass	
Cadmium (filtered)	S20-Ja28318	CP	%	79		70-130	Pass	
Chromium (filtered)	S20-Ja28318	CP	%	84		70-130	Pass	
Copper (filtered)	S20-Ja28318	CP	%	80		70-130	Pass	
Lead (filtered)	S20-Ja28318	CP	%	84		70-130	Pass	
Mercury (filtered)	S20-Ja28318	CP	%	84		70-130	Pass	
Nickel (filtered)	S20-Ja28318	CP	%	83		70-130	Pass	
Zinc (filtered)	S20-Ja28318	CP	%	81		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1				
Perfluorobutanoic acid (PFBA)	S20-Ja28320	CP	%	99		50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S20-Ja28320	CP	%	131		50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S20-Ja28320	CP	%	108		50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S20-Ja28320	CP	%	83		50-150	Pass	
Perfluorooctanoic acid (PFOA)	S20-Ja28320	CP	%	91		50-150	Pass	
Perfluorononanoic acid (PFNA)	S20-Ja28320	CP	%	103		50-150	Pass	
Perfluorodecanoic acid (PFDA)	S20-Ja28320	CP	%	82		50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S20-Ja28320	CP	%	89		50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S20-Ja28320	CP	%	125		50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	S20-Ja28320	CP	%	125		50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S20-Ja28320	CP	%	109		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl sulfonamido substances</b>				Result 1				
Perfluorooctane sulfonamide (FOSA)	S20-Ja28320	CP	%	100		50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S20-Ja28320	CP	%	76		50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S20-Ja28320	CP	%	68		50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S20-Ja28320	CP	%	95		50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S20-Ja28320	CP	%	77		50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S20-Ja28320	CP	%	84		50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S20-Ja28320	CP	%	81		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl sulfonic acids (PFSA)</b>				Result 1				
Perfluorobutanesulfonic acid (PFBS)	S20-Ja28320	CP	%	84		50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S20-Ja28320	CP	%	78		50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S20-Ja28320	CP	%	136		50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S20-Ja28320	CP	%	96		50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S20-Ja28320	CP	%	93		50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S20-Ja28320	CP	%	83		50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S20-Ja28320	CP	%	89		50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S20-Ja28320	CP	%	80		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>				Result 1				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S20-Ja28320	CP	%	103		50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S20-Ja28320	CP	%	102		50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S20-Ja28320	CP	%	126		50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S20-Ja28320	CP	%	104		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>Organochlorine Pesticides</b>				Result 1				
Chlordanes - Total	W20-Ja23904	NCP	%	103		70-130	Pass	
4.4'-DDD	W20-Ja23904	NCP	%	73		70-130	Pass	
4.4'-DDE	W20-Ja23904	NCP	%	99		70-130	Pass	
4.4'-DDT	W20-Ja23904	NCP	%	82		70-130	Pass	
a-BHC	W20-Ja23904	NCP	%	86		70-130	Pass	
Aldrin	W20-Ja23904	NCP	%	112		70-130	Pass	
b-BHC	W20-Ja23904	NCP	%	76		70-130	Pass	
d-BHC	W20-Ja23904	NCP	%	82		70-130	Pass	
Dieldrin	W20-Ja23904	NCP	%	89		70-130	Pass	
Endosulfan I	W20-Ja23904	NCP	%	71		70-130	Pass	
Endosulfan II	W20-Ja23904	NCP	%	93		70-130	Pass	
Endosulfan sulphate	W20-Ja23904	NCP	%	95		70-130	Pass	
Endrin	W20-Ja23904	NCP	%	74		70-130	Pass	
Endrin aldehyde	W20-Ja23904	NCP	%	90		70-130	Pass	
Endrin ketone	W20-Ja23904	NCP	%	84		70-130	Pass	
g-BHC (Lindane)	W20-Ja23904	NCP	%	104		70-130	Pass	
Heptachlor	W20-Ja23904	NCP	%	94		70-130	Pass	
Heptachlor epoxide	W20-Ja23904	NCP	%	98		70-130	Pass	
Hexachlorobenzene	W20-Ja23904	NCP	%	120		70-130	Pass	
Methoxychlor	W20-Ja23904	NCP	%	77		70-130	Pass	
<b>Spike - % Recovery</b>								

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Polychlorinated Biphenyls</b>				Result 1					
Aroclor-1016	S20-Ja24567	NCP	%	91			70-130	Pass	
Aroclor-1260	S20-Ja24567	NCP	%	89			70-130	Pass	
<b>Spike - % Recovery</b>				Result 1					
Nitrate & Nitrite (as N)	M20-Fe00027	NCP	%	98			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	S20-Ja29856	NCP	%	88			70-130	Pass	
<b>Spike - % Recovery</b>				Result 1					
<b>Heavy Metals</b>				Result 1					
Arsenic	M20-Ja29187	NCP	%	100			75-125	Pass	
Cadmium	M20-Ja29187	NCP	%	98			75-125	Pass	
Chromium	M20-Ja29187	NCP	%	101			75-125	Pass	
Copper	M20-Ja29187	NCP	%	96			75-125	Pass	
Lead	M20-Ja29187	NCP	%	102			75-125	Pass	
Mercury	M20-Ja29187	NCP	%	102			70-130	Pass	
Nickel	M20-Ja29187	NCP	%	98			75-125	Pass	
Zinc	M20-Ja29187	NCP	%	91			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD			
Naphthalene	S20-Ja24648	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S20-Ja24648	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S20-Ja24566	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S20-Ja24566	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S20-Ja24566	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH C6-C9	S20-Ja24648	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S20-Ja24566	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S20-Ja24566	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S20-Ja24566	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
<b>Duplicate</b>									
<b>BTEX</b>				Result 1	Result 2	RPD			
Benzene	S20-Ja24648	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S20-Ja24648	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S20-Ja24648	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S20-Ja24648	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S20-Ja24648	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S20-Ja24648	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
<b>Duplicate</b>									
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD			
Acenaphthene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD		
Naphthalene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	S20-Ja21479	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Arsenic (filtered)	S20-Ja28318	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium (filtered)	S20-Ja28318	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	S20-Ja28318	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	S20-Ja28318	CP	mg/L	0.014	0.014	2.0	30%	Pass
Lead (filtered)	S20-Ja28318	CP	mg/L	0.001	0.001	3.0	30%	Pass
Mercury (filtered)	S20-Ja28318	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	S20-Ja28318	CP	mg/L	0.005	0.005	1.0	30%	Pass
Zinc (filtered)	S20-Ja28318	CP	mg/L	0.034	0.034	<1	30%	Pass
Duplicate								
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	S20-Ja28318	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanoic acid (PFNA)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
<b>Perfluoroalkyl sulfonamido substances</b>				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S20-Ja28318	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S20-Ja28318	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S20-Ja28318	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S20-Ja28318	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S20-Ja28318	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S20-Ja28318	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S20-Ja28318	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
<b>Perfluoroalkyl sulfonic acids (PFSAs)</b>				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass



<b>Duplicate</b>								
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>				Result 1	Result 2	RPD		
Perfluoroheptanesulfonic acid (PFHpS)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
<b>Duplicate</b>								
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S20-Ja28318	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S20-Ja28318	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
<b>Duplicate</b>								
<b>Perfluoroalkyl carboxylic acids (PFCA)</b>				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	S20-Ja28319	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanoic acid (PFNA)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
<b>Duplicate</b>								
<b>Perfluoroalkyl sulfonamido substances</b>				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S20-Ja28319	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S20-Ja28319	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S20-Ja28319	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S20-Ja28319	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S20-Ja28319	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S20-Ja28319	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S20-Ja28319	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass

<b>Duplicate</b>								
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
<b>Duplicate</b>								
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S20-Ja28319	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S20-Ja28319	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
<b>Duplicate</b>								
<b>Organochlorine Pesticides</b>				Result 1	Result 2	RPD		
Chlordanes - Total	M20-Ja29173	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
4.4'-DDD	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
4.4'-DDE	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
4.4'-DDT	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
a-BHC	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Aldrin	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
b-BHC	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
d-BHC	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Dieldrin	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endosulfan I	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endosulfan II	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endosulfan sulphate	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endrin	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endrin aldehyde	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endrin ketone	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
g-BHC (Lindane)	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Heptachlor	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Heptachlor epoxide	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Hexachlorobenzene	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Methoxychlor	M20-Ja29173	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
<b>Duplicate</b>								
<b>Organophosphorus Pesticides</b>				Result 1	Result 2	RPD		
Azinphos-methyl	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Bolstar	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Chlorfenvinphos	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Chlorpyrifos	M20-Ja29173	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Chlorpyrifos-methyl	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Coumaphos	M20-Ja29173	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Demeton-S	M20-Ja29173	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Demeton-O	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Diazinon	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Dichlorvos	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Dimethoate	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Disulfoton	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
EPN	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ethion	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ethoprop	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ethyl parathion	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Fenitrothion	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Fensulfothion	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Fenthion	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Malathion	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Merphos	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Methyl parathion	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Mevinphos	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Monocrotophos	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Naled	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Omethoate	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Phorate	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Pirimiphos-methyl	M20-Ja29173	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Pyrazophos	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ronnel	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Terbufos	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Tetrachlorvinphos	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Tokuthion	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Trichloronate	M20-Ja29173	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Nitrate & Nitrite (as N)	M20-Fe00027	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Total Dissolved Solids Dried at 180°C ± 2°C	M20-Ja29194	NCP	mg/L	7300	8300	14	30%	Pass
Total Kjeldahl Nitrogen (as N)	S20-Ja29855	NCP	mg/L	0.3	0.3	19	30%	Pass
Total Suspended Solids Dried at 103–105°C	N20-Ja27882	NCP	mg/L	40	36	11	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M20-Ja29187	NCP	mg/L	0.002	0.002	3.0	30%	Pass
Cadmium	M20-Ja29187	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	M20-Ja29187	NCP	mg/L	0.004	0.004	8.0	30%	Pass
Copper	M20-Ja29187	NCP	mg/L	0.004	0.004	3.0	30%	Pass
Lead	M20-Ja29187	NCP	mg/L	0.002	0.002	2.0	30%	Pass
Mercury	M20-Ja29187	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	M20-Ja29187	NCP	mg/L	0.005	0.005	2.0	30%	Pass
Zinc	M20-Ja29187	NCP	mg/L	0.042	0.043	2.0	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
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

**Authorised By**

Alena Bounkeua	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Julie Kay	Senior Analyst-Inorganic (VIC)
Sarah McCallion	Senior Analyst-PFAS (QLD)
Scott Beddoes	Senior Analyst-Inorganic (VIC)


**Glenn Jackson**
**General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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**CHAIN OF CUSTODY**

ALS Laboratory  
please tick →

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**DBRISBANE** 32 Strand Street, Stafford QLD, 4069  
Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

**DGLAISTONE** 48 Callanmondan Drive, Clinton QLD, 4680  
Ph: 07 7471 5500 E: gladsstone@alsglobal.com

**DMACKAY** 78 Harbour Road, Mackay QLD, 4740  
Ph: 07 4944 0177 E: mackay@alsglobal.com

**DMELBOURNE** 2-4 Westral Road, Springvale VIC, 3171  
Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

**DMUDGEE** 27 Sydney Road, Mudgee NSW, 2850  
Ph: 02 6372 6735 E: mudgee@mail@alsglobal.com

**DSYDNEY** 277-289 Woodpark Road, Smithfield NSW, 2164  
Ph: 02 8784 8565 E: samples.sydney@alsglobal.com

**LITOWNSVILLE** 14-15 Deanna Court, Balle QLD, 4816  
Ph: 07 4796 0000 E: townsville.environment@alsglobal.com

**ENVOLONGONG** 99 Kenny Street, Wollongong NSW, 2500  
Ph: 02 4225 3125 E: portmerrill@alsglobal.com

**CLIENT:** GHD Pty Ltd

**OFFICE:** Sydney

**PROJECT:** 12511195 Townson Road

**ORDER NUMBER:** 12511195

**PROJECT MANAGER:** Henry Luo

**SAMPLER:** Terry Nham

**COC emailed to ALS? ( YES / NO )**

**Email Reports to:** terry.nham@ghd.com henry.luo@ghd.com

**Email invoice to (will default to PM if no other addresses are listed):**

**TURNAROUND REQUIREMENT:**  Standard TAT (List due date):  Non Standard or urgent TAT (List due date):

**ALS QUOTE NO.:** EN/005/19

**CONTACT PH:** 02 9239 7044 / 0414 090 002

**SAMPLER MOBILE:** 0403 281 883

**EDD FORMAT (or default):**

**FOR LABORATORY USE ONLY (CIT/19)**

Custody Seal intact? Yes No

Free ice / freezer bags presentation? Yes No

Random Sample temperature Receipt? Yes No

Other comment: 10-8°C

**RECEIVED BY:** Sep - ALS Cross Nest

**DATE/TIME:** 30/01/2020 14:40

**RECEIVED BY:** Jupem

**DATE/TIME:** 29/1/2020 2:36 AM

**RELINQUISHED BY:** Terry Nham - GHD

**DATE/TIME:** 29/1/2020

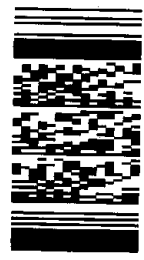
**RECEIVED:** Received

**DATE/TIME:** 30/1/20 19:20

**ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) or Dissolved (field filtered bottle required):**

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	TRH / BTEXN / PAH / Metals (W26)	PFAS (Full Suite)
	0003	29/1/20	Water		7	X	
<b>CONTAINER INFORMATION</b>							
<b>ALS USE</b>							
<b>SAMPLE DETAILS</b>							
<b>MATRIX: SOLID (S) / WATER (W)</b>							
<b>TOTAL</b>							

Environmental Division  
Sydney  
Work Order Reference  
**ES2002998**



Telephone : +61-2-8784 8565

**Water Container Codes:** P = Unpreserved Plastic; N = Nitric Preserved ORC; SH = Sodium Hydroxide/Ca Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulfuric Preserved Plastic; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.

## CERTIFICATE OF ANALYSIS

**Work Order** : **ES2002998**  
**Client** : **GHD PTY LTD**  
**Contact** : **MR HENRY LUO**  
**Address** : **LEVEL 15, 133 CASTLEREAGH STREET**  
**SYDNEY NSW, AUSTRALIA 2000**  
**Telephone** : **+61 02 9239 7100**  
**Project** : **12511195**  
**Order number** : **12511195**  
**C-O-C number** : **----**  
**Sampler** : **terry nham**  
**Site** :  
**Quote number** : **EN/005/19**  
**No. of samples received** : **1**  
**No. of samples analysed** : **1**

**Page** : 1 of 5  
**Laboratory** : Environmental Division Sydney  
**Contact** : Lauren Ockwell  
**Address** : 277-289 Woodpark Road Smithfield NSW Australia 2164  
**Telephone** : 08 9406 1308  
**Date Samples Received** : 30-Jan-2020 14:40  
**Date Analysis Commenced** : 03-Feb-2020  
**Issue Date** : 06-Feb-2020 16:30



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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

### *Signatories*

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

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

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

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

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

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC03	----	----	----	----
Client sampling date / time				29-Jan-2020 00:00	----	----	----	----	
Compound	CAS Number	LOR	Unit	ES2002998-001	-----	-----	-----	-----	
				Result	----	----	----	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----	
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----	
Copper	7440-50-8	0.001	mg/L	<b>0.002</b>	----	----	----	----	
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----	
Nickel	7440-02-0	0.001	mg/L	<b>0.002</b>	----	----	----	----	
Zinc	7440-66-6	0.005	mg/L	<b>0.011</b>	----	----	----	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----	
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----	
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----	
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----	
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----	
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----	
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----	
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----	
Benzo(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----	
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	----	----	----	----	
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----	
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----	
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----	
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----	
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----	
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID			QC03	----	----	----	----
Client sampling date / time		29-Jan-2020 00:00			----	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2002998-001	-----	-----	-----	-----	-----
				Result	----	----	----	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----	----
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----	----
^ Total Xylenes	----	2	µg/L	<2	----	----	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1.0	%	25.8	----	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	56.2	----	----	----	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%	46.8	----	----	----	----	----
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1.0	%	67.7	----	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%	82.9	----	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	89.0	----	----	----	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	109	----	----	----	----	----
Toluene-D8	2037-26-5	2	%	112	----	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	101	----	----	----	----	----



## Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2,4,6-Tribromophenol	118-79-6	17	125
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

## QUALITY CONTROL REPORT

<b>Work Order</b>	: <b>ES2002998</b>	Page	: 1 of 6
Client	: <b>GHD PTY LTD</b>	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Lauren Ockwell
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: 08 9406 1308
Project	: 12511195	Date Samples Received	: 30-Jan-2020
Order number	: 12511195	Date Analysis Commenced	: 03-Feb-2020
C-O-C number	: ----	Issue Date	: 06-Feb-2020
Sampler	: terry nham		
Site	:		
Quote number	: EN/005/19		
No. of samples received	: 1		
No. of samples analysed	: 1		



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

This Quality Control Report contains the following information:

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

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

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

## Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 2841331)</b>									
ES2002550-023	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.024	0.024	0.00	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.005	0.004	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.020	0.025	21.7	No Limit
ES2003440-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.024	0.024	0.00	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2840867)</b>									
ES2003452-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
ES2002998-001	QC03	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2837692)</b>									
EB2002371-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
ES2003020-006	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2837692)</b>									
EB2002371-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
ES2003020-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 2837692)</b>									



Sub-Matrix: <b>WATER</b>				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP080: BTEXN (QC Lot: 2837692) - continued</b>									
EB2002371-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES2003020-006	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit



## Method Blank (MB) and Laboratory Control Spike (LCS) Report

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

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 2841331)</b>									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.1	82.0	114	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	96.5	84.0	112	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	97.5	86.0	116	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	92.5	83.0	118	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	103	85.0	115	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.7	84.0	116	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.7	79.0	117	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 2840867)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.0	77.0	111	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2836996)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	72.5	50.0	94.0	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	69.8	63.6	114	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	68.3	62.2	113	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	68.4	63.9	115	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	75.3	62.6	116	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	74.8	64.3	116	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	72.3	63.6	118	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	73.5	63.1	118	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	70.9	64.1	117	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	72.8	62.5	116	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	69.8	61.7	119	
	205-82-3								
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	88.3	63.0	115	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	74.7	63.3	117	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	67.0	59.9	118	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	71.8	61.2	117	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	72.5	59.1	118	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 2836995)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	66.8	55.8	112	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	92.9	71.6	113	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	88.2	56.0	121	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 2837692)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	91.8	75.0	127	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2836995)</b>									



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2836995) - continued</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	2500 µg/L	80.7	57.9	119	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	96.2	62.5	110	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1500 µg/L	84.1	61.5	121	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2837692)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	90.3	75.0	127	
<b>EP080: BTEXN (QCLot: 2837692)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	104	70.0	122	
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	97.5	69.0	123	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	97.6	70.0	120	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	98.4	69.0	121	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	99.3	72.0	122	
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	94.3	70.0	120	

### Matrix Spike (MS) Report

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

Sub-Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%) MS	Recovery Limits (%)	
						Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 2841331)</b>							
ES2002998-001	QC03	EG020A-T: Arsenic	7440-38-2	1 mg/L	102	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	99.3	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	102	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	97.9	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	99.3	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	99.0	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	101	70.0	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 2840867)</b>							
ES2003452-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	82.8	70.0	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 2837692)</b>							
EB2002371-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	83.4	70.0	130
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2837692)</b>							
EB2002371-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	81.4	70.0	130
<b>EP080: BTEXN (QCLot: 2837692)</b>							
EB2002371-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	90.6	70.0	130

Page : 6 of 6  
 Work Order : ES2002998  
 Client : GHD PTY LTD  
 Project : 12511195



Sub-Matrix: **WATER**

				<i>Matrix Spike (MS) Report</i>				
				<i>Spike</i>	<i>SpikeRecovery(%)</i>	<i>Recovery Limits (%)</i>		
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Concentration</i>	<i>MS</i>	<i>Low</i>	<i>High</i>	
<b>EP080: BTEXN (QCLot: 2837692) - continued</b>								
EB2002371-001	Anonymous	EP080: Toluene	108-88-3	25 µg/L	93.3	70.0	130	
		EP080: Ethylbenzene	100-41-4	25 µg/L	98.4	70.0	130	
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	99.6	70.0	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	25 µg/L	99.4	70.0	130	
	EP080: Naphthalene	91-20-3	25 µg/L	99.8	70.0	130		



## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2002998	Page	: 1 of 4
Client	: GHD PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Telephone	: 08 9406 1308
Project	: 12511195	Date Samples Received	: 30-Jan-2020
Site	:	Issue Date	: 06-Feb-2020
Sampler	: terry nham	No. of samples received	: 1
Order number	: 12511195	No. of samples analysed	: 1

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

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

### Summary of Outliers

#### Outliers : Quality Control Samples

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

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

#### Outliers : Analysis Holding Time Compliance

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

#### Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**



### Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
PAH/Phenols (GC/MS - SIM)	0	10	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	15	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>					
PAH/Phenols (GC/MS - SIM)	0	10	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	15	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

### Analysis Holding Time Compliance

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

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

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

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

Matrix: **WATER**

Evaluation: x= Holding time breach ; o = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG020T: Total Metals by ICP-MS</b>							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) QC03	29-Jan-2020	05-Feb-2020	27-Jul-2020	o	05-Feb-2020	27-Jul-2020	o
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) QC03	29-Jan-2020	----	----	----	05-Feb-2020	26-Feb-2020	o
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
Amber Glass Bottle - Unpreserved (EP075(SIM)) QC03	29-Jan-2020	03-Feb-2020	05-Feb-2020	o	04-Feb-2020	14-Mar-2020	o
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
Amber Glass Bottle - Unpreserved (EP071) QC03	29-Jan-2020	03-Feb-2020	05-Feb-2020	o	04-Feb-2020	14-Mar-2020	o
Amber VOC Vial - Sulfuric Acid (EP080) QC03	29-Jan-2020	05-Feb-2020	12-Feb-2020	o	05-Feb-2020	12-Feb-2020	o
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>							
Amber Glass Bottle - Unpreserved (EP071) QC03	29-Jan-2020	03-Feb-2020	05-Feb-2020	o	04-Feb-2020	14-Mar-2020	o
Amber VOC Vial - Sulfuric Acid (EP080) QC03	29-Jan-2020	05-Feb-2020	12-Feb-2020	o	05-Feb-2020	12-Feb-2020	o
<b>EP080: BTEXN</b>							
Amber VOC Vial - Sulfuric Acid (EP080) QC03	29-Jan-2020	05-Feb-2020	12-Feb-2020	o	05-Feb-2020	12-Feb-2020	o



## Quality Control Parameter Frequency Compliance

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

Matrix: **WATER** Evaluation: **x** = Quality Control frequency not within specification ; **x** = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	10	0.00	10.00	X	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	O	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	16	12.50	10.00	O	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	15	0.00	10.00	X	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	16	12.50	10.00	O	NEPM 2013 B3 & ALS QC Standard
<b>Laboratory Control Samples (LCS)</b>							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	10	10.00	5.00	O	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	O	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	6.25	5.00	O	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	15	6.67	5.00	O	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	16	6.25	5.00	O	NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	10	10.00	5.00	O	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	O	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	6.25	5.00	O	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	15	6.67	5.00	O	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	16	6.25	5.00	O	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	10	0.00	5.00	X	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	O	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	6.25	5.00	O	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	15	0.00	5.00	X	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	16	6.25	5.00	O	NEPM 2013 B3 & ALS QC Standard



## Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

### Australia

**Melbourne**  
6 Monterey Road  
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Site # 1254 & 14271

**Sydney**  
Unit F3, Building F  
16 Mars Road  
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NATA # 1261 Site # 18217

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Phone : 0800 856 450  
IANZ # 1290

**Company Name:** GHD Pty Ltd NSW  
**Address:** Level 15, 133 Castlereagh Street  
Sydney  
NSW 2000

**Project Name:** TOWNSON ROAD  
**Project ID:** 12511195

**Order No.:** 12511195  
**Report #:** 721605  
**Phone:** 02 9239 7100  
**Fax:** 02 9239 7199

**Received:** May 25, 2020 6:06 PM  
**Due:** Jun 1, 2020  
**Priority:** 5 Day  
**Contact Name:** Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Polycyclic Aromatic Hydrocarbons	Eurofins   mgt Suite B7 (filtered metals)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	BH102	May 25, 2020		Water	S20-My36961		X	
2	BH114	May 25, 2020		Water	S20-My36962		X	
3	QC101	May 25, 2020		Water	S20-My36963	X		
4	TRIP BLANK	May 25, 2020		Water	S20-My36964			X
5	TRIP SPIKE	May 25, 2020		Water	S20-My36965			X
<b>Test Counts</b>						1	2	2

**Melbourne**

6 Monterey Road  
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Site # 1254 & 14271

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NATA # 1261 Site # 20794

**Perth**

2/91 Leach Highway  
Kewdale WA 6105  
Phone : +61 8 9251 9600  
NATA # 1261 Site # 23736

## Sample Receipt Advice

Company name: **GHD Pty Ltd NSW**  
Contact name: Henry Luo  
Project name: TOWNSON ROAD  
Project ID: 12511195  
COC number: Not provided  
Turn around time: 5 Day  
Date/Time received: May 25, 2020 6:06 PM  
Eurofins reference: **721605**

### Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 2.8 degrees Celsius.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.

N/A Custody Seals intact (if used).

### Contact notes

If you have any questions with respect to these samples please contact:

Alena Bounkeua on Phone : or by e.mail: AlenaBounkeua@eurofins.com

Results will be delivered electronically via e.mail to Henry Luo - henry.luo@ghd.com.

*Note: A copy of these results will also be delivered to the general GHD Pty Ltd NSW email address.*

GHD Pty Ltd NSW  
 Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000



NATA Accredited  
 Accreditation Number 1261  
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

Attention: **Henry Luo**

Report **721605-W**  
 Project name **TOWNSON ROAD**  
 Project ID **12511195**  
 Received Date **May 25, 2020**

Client Sample ID			BH102 Water S20-My36961 May 25, 2020	BH114 Water S20-My36962 May 25, 2020	QC101 Water S20-My36963 May 25, 2020	TRIP BLANK Water S20-My36964 May 25, 2020
Sample Matrix	LOR	Unit				
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	-	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	0.05	-	-
TRH C15-C28	0.1	mg/L	0.1	0.3	-	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	-	-
TRH C10-C36 (Total)	0.1	mg/L	0.1	0.35	-	-
<b>BTEX</b>						
Benzene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	102	105	-	106
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.01	mg/L	< 0.01	< 0.01	-	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	-	< 0.02
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	0.02	mg/L	< 0.02	< 0.02	-	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	-	-
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	0.05	mg/L	< 0.05	< 0.05	-	-
TRH >C16-C34	0.1	mg/L	0.1	0.2	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	-	-
TRH >C10-C40 (total)*	0.1	mg/L	0.1	0.2	-	-
<b>Polycyclic Aromatic Hydrocarbons</b>						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(b&j)fluoranthene <sup>N07</sup>	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-

Client Sample ID			<b>BH102</b>	<b>BH114</b>	<b>QC101</b>	<b>TRIP BLANK</b>
Sample Matrix			<b>Water</b>	<b>Water</b>	<b>Water</b>	<b>Water</b>
Eurofins Sample No.			<b>S20-My36961</b>	<b>S20-My36962</b>	<b>S20-My36963</b>	<b>S20-My36964</b>
Date Sampled			<b>May 25, 2020</b>	<b>May 25, 2020</b>	<b>May 25, 2020</b>	<b>May 25, 2020</b>
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Fluorobiphenyl (surr.)	1	%	81	100	109	-
p-Terphenyl-d14 (surr.)	1	%	61	INT	65	-
<b>Heavy Metals</b>						
Arsenic (filtered)	0.001	mg/L	0.004	0.002	-	-
Cadmium (filtered)	0.0002	mg/L	0.0005	< 0.0002	-	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Copper (filtered)	0.001	mg/L	0.012	0.010	-	-
Lead (filtered)	0.001	mg/L	0.002	< 0.001	-	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Nickel (filtered)	0.001	mg/L	0.031	0.025	-	-
Zinc (filtered)	0.005	mg/L	0.069	0.046	-	-

Client Sample ID			<b>R20 TRIP SPIKE</b>
Sample Matrix			<b>Water</b>
Eurofins Sample No.			<b>S20-My36965</b>
Date Sampled			<b>May 25, 2020</b>
Test/Reference	LOR	Unit	
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>			
TRH C6-C9	0.02	mg/L	85
<b>BTEX</b>			
Benzene	0.001	mg/L	110
Toluene	0.001	mg/L	110
Ethylbenzene	0.001	mg/L	100
m&p-Xylenes	0.002	mg/L	96
o-Xylene	0.001	mg/L	110
Xylenes - Total*	0.003	mg/L	99
4-Bromofluorobenzene (surr.)	1	%	108
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>			
Naphthalene <sup>N02</sup>	0.01	mg/L	120
TRH C6-C10	0.02	mg/L	83



**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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>
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	May 25, 2020	7 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Sydney	May 25, 2020	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	May 25, 2020	7 Days
Total Recoverable Hydrocarbons - Method: LTM-ORG-2010 TRH C6-C40	Sydney	May 25, 2020	7 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	May 25, 2020	
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	May 25, 2020	7 Days
Metals M8 filtered - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 25, 2020	28 Days

### Australia

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6 Monterey Road  
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NATA # 1261  
Site # 1254 & 14271

**Sydney**  
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Phone : +61 2 9900 8400  
NATA # 1261 Site # 18217

**Brisbane**  
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Murarrie QLD 4172  
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NATA # 1261 Site # 20794

**Perth**  
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NATA # 1261  
Site # 23736

### New Zealand

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Phone : +64 9 526 45 51  
IANZ # 1327

**Christchurch**  
43 Detroit Drive  
Rolleston, Christchurch 7675  
Phone : 0800 856 450  
IANZ # 1290

**Company Name:** GHD Pty Ltd NSW  
**Address:** Level 15, 133 Castlereagh Street  
Sydney  
NSW 2000

**Project Name:** TOWNSON ROAD  
**Project ID:** 12511195

**Order No.:** 12511195  
**Report #:** 721605  
**Phone:** 02 9239 7100  
**Fax:** 02 9239 7199

**Received:** May 25, 2020 6:06 PM  
**Due:** Jun 1, 2020  
**Priority:** 5 Day  
**Contact Name:** Henry Luo

**Eurofins Analytical Services Manager : Alena Bounkeua**

Sample Detail						Polycyclic Aromatic Hydrocarbons	Eurofins   mgt Suite B7 (filtered metals)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	BH102	May 25, 2020		Water	S20-My36961		X	
2	BH114	May 25, 2020		Water	S20-My36962		X	
3	QC101	May 25, 2020		Water	S20-My36963	X		
4	TRIP BLANK	May 25, 2020		Water	S20-My36964			X
5	TRIP SPIKE	May 25, 2020		Water	S20-My36965			X
<b>Test Counts</b>						1	2	2

## Internal Quality Control Review and Glossary

### General

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- 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

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	mg/L	< 0.02		0.02	Pass	
TRH C10-C14	mg/L	< 0.05		0.05	Pass	
TRH C15-C28	mg/L	< 0.1		0.1	Pass	
TRH C29-C36	mg/L	< 0.1		0.1	Pass	
<b>Method Blank</b>						
<b>BTEX</b>						
Benzene	mg/L	< 0.001		0.001	Pass	
Toluene	mg/L	< 0.001		0.001	Pass	
Ethylbenzene	mg/L	< 0.001		0.001	Pass	
m&p-Xylenes	mg/L	< 0.002		0.002	Pass	
o-Xylene	mg/L	< 0.001		0.001	Pass	
Xylenes - Total*	mg/L	< 0.003		0.003	Pass	
<b>Method Blank</b>						
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene	mg/L	< 0.01		0.01	Pass	
TRH C6-C10	mg/L	< 0.02		0.02	Pass	
TRH >C10-C16	mg/L	< 0.05		0.05	Pass	
TRH >C16-C34	mg/L	< 0.1		0.1	Pass	
TRH >C34-C40	mg/L	< 0.1		0.1	Pass	
<b>Method Blank</b>						
<b>Polycyclic Aromatic Hydrocarbons</b>						
Acenaphthene	mg/L	< 0.001		0.001	Pass	
Acenaphthylene	mg/L	< 0.001		0.001	Pass	
Anthracene	mg/L	< 0.001		0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001		0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001		0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001		0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001		0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001		0.001	Pass	
Chrysene	mg/L	< 0.001		0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001		0.001	Pass	
Fluoranthene	mg/L	< 0.001		0.001	Pass	
Fluorene	mg/L	< 0.001		0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001		0.001	Pass	
Naphthalene	mg/L	< 0.001		0.001	Pass	
Phenanthrene	mg/L	< 0.001		0.001	Pass	
Pyrene	mg/L	< 0.001		0.001	Pass	
<b>LCS - % Recovery</b>						
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	%	85		70-130	Pass	
TRH C10-C14	%	75		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>BTEX</b>						
Benzene	%	91		70-130	Pass	
Toluene	%	80		70-130	Pass	
Ethylbenzene	%	76		70-130	Pass	
m&p-Xylenes	%	87		70-130	Pass	
o-Xylene	%	89		70-130	Pass	
Xylenes - Total*	%	87		70-130	Pass	
<b>LCS - % Recovery</b>						

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>								
Naphthalene	%	109			70-130	Pass		
TRH C6-C10	%	86			70-130	Pass		
TRH >C10-C16	%	78			70-130	Pass		
<b>LCS - % Recovery</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>								
Acenaphthene	%	112			70-130	Pass		
Acenaphthylene	%	112			70-130	Pass		
Anthracene	%	112			70-130	Pass		
Benz(a)anthracene	%	84			70-130	Pass		
Benzo(a)pyrene	%	70			70-130	Pass		
Benzo(b&i)fluoranthene	%	76			70-130	Pass		
Benzo(g,h,i)perylene	%	73			70-130	Pass		
Chrysene	%	76			70-130	Pass		
Fluoranthene	%	122			70-130	Pass		
Fluorene	%	118			70-130	Pass		
Indeno(1,2,3-cd)pyrene	%	70			70-130	Pass		
Naphthalene	%	94			70-130	Pass		
Phenanthrene	%	121			70-130	Pass		
Pyrene	%	121			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1				
TRH C10-C14	S20-My36201	NCP	%	121		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1				
TRH >C10-C16	S20-My36201	NCP	%	128		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Heavy Metals</b>				Result 1				
Arsenic (filtered)	S20-My36962	CP	%	125		70-130	Pass	
Cadmium (filtered)	S20-My36962	CP	%	114		70-130	Pass	
Chromium (filtered)	S20-My36962	CP	%	92		70-130	Pass	
Copper (filtered)	S20-My36962	CP	%	84		70-130	Pass	
Lead (filtered)	S20-My36962	CP	%	94		70-130	Pass	
Mercury (filtered)	S20-My36962	CP	%	81		70-130	Pass	
Nickel (filtered)	S20-My36962	CP	%	84		70-130	Pass	
Zinc (filtered)	S20-My36962	CP	%	83		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD		
TRH C10-C14	S20-My35011	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
TRH C15-C28	S20-My35011	NCP	mg/L	0.2	0.2	29	30%	Pass
TRH C29-C36	S20-My35011	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
<b>Duplicate</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD		
TRH >C10-C16	S20-My35011	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
TRH >C16-C34	S20-My35011	NCP	mg/L	0.2	0.2	26	30%	Pass
TRH >C34-C40	S20-My35011	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass

Duplicate								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD		
Acenaphthene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	S20-My35011	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Arsenic (filtered)	S20-My36961	CP	mg/L	0.004	0.005	16	30%	Pass
Cadmium (filtered)	S20-My36961	CP	mg/L	0.0005	0.0004	10	30%	Pass
Chromium (filtered)	S20-My36961	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	S20-My36961	CP	mg/L	0.012	0.012	4.0	30%	Pass
Lead (filtered)	S20-My36961	CP	mg/L	0.002	< 0.001	54	30%	Fail
Mercury (filtered)	S20-My36961	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	S20-My36961	CP	mg/L	0.031	0.031	1.0	30%	Pass
Zinc (filtered)	S20-My36961	CP	mg/L	0.069	0.065	5.0	30%	Pass
Duplicate								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD		
TRH C6-C9	S20-My36962	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Duplicate								
<b>BTEX</b>				Result 1	Result 2	RPD		
Benzene	S20-My36962	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Toluene	S20-My36962	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Ethylbenzene	S20-My36962	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
m&p-Xylenes	S20-My36962	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
o-Xylene	S20-My36962	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Xylenes - Total*	S20-My36962	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass
Duplicate								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD		
Naphthalene	S20-My36962	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
TRH C6-C10	S20-My36962	CP	mg/L	< 0.02	< 0.02	<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.
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

### Authorised By

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Andrew Sullivan	Senior Analyst-Organic (NSW)
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### 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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REF\Specialist management\FINAL REVIEW\App I Contamination\Contam report \_ clean.docx

Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
Rev 1	Mariana Torres/ Henry Luo	Jessica Hannaford		Matthew Ferreira		11/08/2020



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