Property New South Wales
Detailed Site Investigation

Peat Island,
Mooney Mooney, NSW

5 August 2021

54933/118680 (Rev 3)

JBS&G

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Abbreviations

Term	Definition
ACM	Asbestos containing material
AF/FA	Asbestos Fibres/Friable Asbestos
AFFF	Aqueous Film Forming Foam
As	Arsenic
Cd	Cadmium
COPC	Contaminants of Potential Concern
CSM	Conceptual site model
Cr	Chromium
Cu	Copper
bgs	below ground surface
BTEX	Benzene, toluene, ethylbenzene and xylenes
B(a)P	Benzo(a)pyrene
DQOs	Data Quality Objectives
DSI	Detailed Site Investigation
EIL/ESL	Ecological Investigation Level/Ecological Screening Level
EPA	NSW Environment Protection Authority
ha	Hectare
Hg	Mercury
HIL/HSL	Health Investigation Level/Health Screening Level
LOR	Limit of Reporting
Mn	Manganese
NEPM	National Environment Protection Measure
NEPC	National Environment Protection Council
Ni	Nickel
OCP	Organochlorine Pesticides
OPP	Organophosphorus Pesticides
PAHs	Polycyclic aromatic hydrocarbons
Pb	Lead
PFAS	Poly fluorinated alkyl substance
PNSW	Property New South Wales
PQL	Practical Quantitation Limit
PSI	Preliminary Site Investigation
QA/QC	Quality Assurance/Quality Control
RMS	Roads and Maritime Services
RPD	Relative Percentage Difference
SAQP	Sampling, Analysis and Quality Plan
TPH/TRH	Total Petroleum/Recoverable Hydrocarbons
Zn	Zinc

Executive Summary

JBS&G Australia Pty Ltd (JBS&G) was engaged by Property New South Wales (PNSW, the client) to conduct a Detailed Site Investigation (DSI) of Peat Island and adjacent land areas at Mooney Mooney, NSW (the site). The site location and site layout are shown on **Figures 1 and 2** respectively. The site has an area of approximately 38 ha.

A planning proposal seeks to rezone the subject land from SP2-Infrastructure and RE1 – Public Recreation to a mix of residential, tourist, recreation and conservation zones. The planning proposal was lodged with Central Coast Council on 18 October 2016, and was granted Gateway Determination by the Department of Planning and Environment in August 2017. This DSI version has been issued in response to release of a revised Concept Plan (Rev K) in in July 2021.

Previous investigations identified a number of areas of potential environmental concern (AECs) posing contamination risks associated with historical and current uses of the site and, recommended intrusive sampling targeting identified AECs to provide an assessment of potential soil contamination and confirm the findings of the preliminary investigation.

Based on the site inspection and known history of the site, a targeted investigation focusing on identified AECs including filled areas and a former service station, together with a grid-based sampling approach across the remaining site was considered the most appropriate sampling technique. A total of 73 test pits and boreholes were advanced across the site, with five groundwater monitoring wells also installed. Three previously installed groundwater monitoring wells located at the former service station were also sampled.

The results of the soil sampling identified lead concentrations in two soil sample locations (SS15 0-0.1 and SS50 0-0.1) above the adopted health-based criteria for low-density residential land use. Statistical analysis of the lead samples indicated that the identified lead concentrations were a low risk for the proposed development. It is noted the individual lead concentrations do not exceed ecological criteria or health-based criteria for less sensitive land uses at these locations as is currently proposed within the draft concept plan (**Appendix B**).

Fragments of ACM were identified on the surface within Portion 1 (former staff residence) and Portion 3 (Peat Island). In addition, ACM was also observed within test pit SS03 (located in the northern portion of Peat Island). A soil sample (SS03 0.5-0.6) was also collected which identified the presence of friable asbestos within the soil above the adopted human health criteria for all land uses.

Concentrations of nickel and zinc above the adopted ecological criteria were identified at six locations across the site, generally within near surface soils. Benzo(a)pyrene concentration in one sample also exceeded the adopted ecological criteria.

The following presents an assessment of the findings:

- Filling has historically occurred on Peat Island (Portion 3) and foreshore areas (Portion 4 and Portion 11);
- Underground storage tanks (USTs) at the site were identified to the east of the former laundry – Portion 1 (a diesel UST) and at the former service station – Portion 7 (three USTs with one UST decommissioned by concrete filling);
- Concentrations of COPCs reported from soil sample locations within the site were generally reported below the adopted assessment criteria, with the exception of the presence of asbestos containing materials on the surface soils in Portions 1 and 3, and within the fill material at location SS03. All other concentrations were not considered to present a health risk for the proposed development. Some samples at the site identified heavy metals and

PAHs above the adopted ecological criteria, and these areas may need to be remediated/managed during development;

- Isolated samples at two locations identified elevated concentrations of lead above the adopted human health criteria for a residential land use. Statistical analysis was completed on all lead concentrations reported across the site which indicated that lead presented a low risk to human health for the proposed residential land use;
- Surficial ACM and building material was observed in Portion 1 and Portion 3 of the site which represents a potential human health and aesthetic issue for the proposed development. The surficial ACM will require management and/or remediation;
- Friable asbestos was identified at one location in conjunction with ACM in the northern part of Portion 3 (Peat Island) which will require remediation and/or management for the proposed development;
- Elevated copper, nickel and zinc concentrations were identified within the majority of groundwater samples collected from the site. As the concentrations were generally consistent, it is considered that the likely source of these heavy metals is the underlying sandstone and not indicative of source contamination. Lead was reported within one sample marginally above the adopted criteria, however is considered consistent with other groundwater monitoring wells within the vicinity and not indicative of lead contamination within the groundwater; and
- Potential acid sulfate soils were identified below the groundwater table in the northern portion of Peat Island. Should any excavation of the natural material occur below groundwater at the site, an acid sulfate soils management plan should be prepared.

Based on the findings of this investigation and subject to the limitations in **Section 11**, the following conclusions are made:

- The site can be made suitable for the proposed land use, subject to removal and validation of the USTs and remediation and/or management of the surficial ACM, buried asbestos and heavy metals identified above the ecological criteria.

The following recommendations are made:

- Due to the presence of asbestos fines and ACM at the site, an Asbestos Management Plan is required to manage the presence of asbestos at the site prior to remediation/development; and
- As per the *Protection of the Environment Operations (Underground Petroleum Storage System) Regulations 2019*, as the USTs are currently not in use, the identified USTs should be removed and the tank excavation appropriately validated.

1. Introduction

1.1 Introduction and Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Property New South Wales (PNSW, the client) to conduct a Detailed Site Investigation (DSI) at Peat Island and adjacent lands at Mooney Mooney, NSW (the site). The site location and site layout are shown on **Figures 1 and 2** respectively. The site has an area of approximately 38 ha.

A planning proposal seeks to rezone the subject land from SP2-Infrastructure and RE1 – Public Recreation to a mix of residential, tourist, recreation and conservation zones. The planning proposal was lodged with Central Coast Council on 18 October 2016, and was granted Gateway Determination by the Department of Planning and Environment in August 2017. This DSI version has been issued in response to release of a revised Concept Plan (Rev K) in July 2021.

JBS&G undertook a preliminary site investigation (PSI) in 2013[1], and updated the assessment in 2016[2] to include an enlarged site and to assess the changes which may have occurred at the site in the intervening period. Also, in 2013 JBS&G undertook a Hazardous Materials Survey[3] of the area subject of the PSI (JBS, 2013b).

Investigations identified a number of areas of potential environmental concern (AECs) posing contamination risks associated with historical and current uses of the site and recommended intrusive sampling targeting identified AECs to provide an assessment of potential soil contamination and confirm the findings of the preliminary investigation.

A sampling, analysis and quality plan (SAQP[4]) was prepared including data quality objectives (DQO), in conjunction with the development of a conceptual site model (CSM) to visualise the linkages and pathways associated with potential contamination risks to site uses as part of the planning process and to develop potential future intrusive detailed investigation requirements.

The purpose of the DSI report is to support the planning proposal and enable a Site Audit Statement for the proposed development.

1.2 Objective

The objective of this investigation was to undertake a targeted DSI to satisfy the consent authority that a decision can be made on the planning proposal regarding potential contamination within the site.

1.3 Scope of Work

The scope of work completed comprised:

- Review of previous environmental investigation reports including site history, analytical results and site conditions outlined within the SAQP;
- Soil sampling and analysis at 78 locations across the site;
- Installation of five (5) groundwater monitoring wells;

[1] Phase 1 Environmental Site Assessment, Government Property. Peat Island, Mooney Mooney, NSW, February 2013, JBS 42532 – 553028 (Rev 0), JBS Environmental Pty Ltd (now JBS&G) (JBS 2013a)

[2] Preliminary Contamination Assessment, Surplus NSW Government Land, Mooney Mooney & Peat Island, NSW. 29 August 2016, JBS&G 51475 – 103723, JBS&G Australia Pty Ltd (JBS&G 2016)

[3] Hazardous Materials Survey, Government Property NSW. Peat Island & Adjoining Land Mooney Mooney, NSW, March 2013, JBS 42351 – 53106 (Rev 0) (JBS 2013b)

[4] Sampling Analysis and Quality Plan, Property NSW. Peat Island, Mooney Mooney, NSW. 6 September 2018, JBS&G 54933/116943 (Rev 0) (JBS&G 2018)

- Sampling of the five (5) installed groundwater monitoring wells and three (3) previously installed groundwater monitoring wells for COCs;
- Preparation of this investigation report in general accordance with guidelines made or approved by the EPA.

1.4 Relevant Guidance

This report has been prepared with reference to guidelines made or approved by the NSW Environmental Protection Authority (EPA) including:

- *Sampling design guidelines*, NSW EPA 1995;
- *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, ANZG 2018;
- *Consultants reporting on contaminated land: Contaminated land guidelines*, NSW EPA 2020;
- *Guidelines for the Assessment of Management of Groundwater Contamination*, DEC March 2007;
- *National Environment Protection (Assessment of Site Contamination) Measure 1999, Amendment No.1*, (NEPM 2013);
- *Asbestos in or on Soil*, WorkCover NSW 2014; and
- *Guidelines for the NSW Site Auditor Scheme, 3rd Edition*, NSW EPA 2017;

Where applicable, the *State Environmental Planning Policy No. 55 (SEPP 55) – Remediation of Land under the Environmental Planning and Assessment Act (EP&A Act) 1979* will be considered.

In addition to the above guidelines comments provided by the Department of Planning, Industry and Environment (DPIE) associated with the Gateway Determination were also considered. This included the recommendation of investigations where areas of environmental concern had been previously identified.

2. Site Condition and Surrounding Environment

2.1 Site Identification

The location of the site is shown in **Figure 1**. The site details are summarised in **Table 2.1** and described in detail in the following sections.

Table 2.1: Summary Site Details

Address	Peat island, Mooney Mooney, NSW and Point Road, Mooney Mooney, NSW
Lot/DP	Lots 2, 3 & 4 deposited plan (DP) 239249; Lot 2 in DP 431999; Lot 2 in DP 597504; Lot 21 in DP 836628; Lots 10 & 11 in DP 1157280; Lot 1 in DP 431780; and Lots 1 & 2 in DP 945014; Lot 7011 in DP 1057994; Lot 23 in DP 86305; Lots 9, 10 & 11 in DP 863305; and Lot 7302 in DP 1151629.
Local Government Authority	Central Coast Council
Approximate MGA Coordinates (MGA 56)	E: 332888 (center of the site) N: 6288720 (center of the site)
Site Zoning	SP2 (Hospital, Educational and Water Storage), RE1 Public Recreation, W2 Recreational Waterways and unzoned land.
Current Use	The site had generally been vacated with the service station, the fire station, the school and the previous Peat Island hospital not in use. The residential properties were leased and occupied at the site of the investigation.
Previous Use	Department of Education School, mental hospital and residence for hospital staff, service station, fire station, residential and Hawkesbury River Ambulance Station/Roads and Maritime Services (RMS) Depot.
Proposed use	The Concept Plan (**Appendix B**) for the site proposes the site to include community facilities; low and medium density residential; Public car parking areas; Hotel/Accommodation, including new and existing buildings on Peat Island; Emergency services facilities to be relocated within the site; RMS facilities to be relocated within the site; Vehicle access and parking facilities; Landscaping and open spaces including a foreshore walkway and multiple public parks; and areas of National Park. In addition, a land based marina is proposed that will be the subject of a future planning proposal. There will also be an additional location for marine rescue facility subject to further stakeholder consultation and separate proposal.
Site Area	Approximately 38 ha

2.2 Site Description

JBS&G inspected the site on 26 July and 17 September 2018. The inspections were completed to identify any changes to the site that may have occurred since the previous JBS (2013a) Preliminary Site Investigation and to optimise the proposed investigation works. The site is divided into Portions 1 to 13, as shown on **Figure 2**. Site photographs are provided in **Appendix D**.

Portion 1 comprised vacant buildings (former laundry and peat island staff residencies) located along a single lane bitumen road. The portion was fenced and accessed via a locked gate. The buildings were noted to be in moderate to poor condition with some broken and missing eaves. Asbestos containing materials (ACM) associated with the vacant buildings were observed on the surface of the site. An underground storage tank (UST) and vent line was observed to the north of the laundry and was reported to contain diesel. A generator and LPG gas tank were observed to the south of the buildings. A disused pool and cleaning room was noted to be in the central area of Portion 1, between buildings.

Portion 2 was predominantly vacant, with the exception of an administration / security building and bitumen access road to peat Island. A 1000 L diesel above ground storage tank (AST) was located to the south west of the administration building. The tank was positioned within a brick storage shed and was noted to be rusted. No evidence of spills or leaks were observed.

Portion 3 comprised Peat Island and a single lane bridge providing access to the island from Portion 2. The bridge appeared to have been constructed predominantly using sandstone. The island had

been vacated at the time of the inspection and all buildings had been boarded up. The southern area of Portion 3 appeared to have been reclaimed and potentially been filled with unknown material. Sea walls were observed on the western boundary of Peat Island which generally comprised of rock, however some areas appeared to have been repaired with concrete. Potential ACM was observed on some of the concrete used for the sea wall. ACM was observed on the ground surface associated with the buildings at the site. A diesel AST was observed and was located within the bunded area. No stains or spills were observed. The AST was empty at the time of the inspection. A chemical storage unit was also identified in the western portion of the island comprising a small brick building.

Portion 4 comprised vacant and vegetated, reclaimed land, with bitumen, concrete, bricks and plastic observed being used as reclamation materials.

Portion 5 consisted of a private wharf and carpark utilised by the local ferries.

Portion 6 was predominantly bushland, with a water tower located in the central northern section. The southern portion comprised a vacated church of brick construction and buildings associated with the peat island facility. The buildings were noted to be in poor condition, with missing eaves and railings. An LPG gas tank was observed south of the buildings.

Portion 7 consisted of a former service station. The service station building and above-ground infrastructure (bowsers) had been demolished. Three fill points (one concreted) were observed in the northern portion of the service station. Three USTs (one decommissioned by concrete filling) was located in the grass area to the north of the service station. The two accessible USTs are understood to be approximately 10,000L in volume. Three groundwater monitoring wells were observed at the site. No ACM was observed on the surface of the site within this portion.

Portion 8 comprised residential properties along the western boundary with bushland to the east. No evidence of oyster faming activities was observed to occur at Portion 8, noting an oyster farm was located east and south east of this portion.

Portion 9 and 10 consisted of a former fire station, school and teachers' cabin. The former fire station was a single-story brick building, located on Point Road, with two concrete underground water tanks located adjacent the building to the south. An inspection of the fire station and the surrounding area did not identify any evidence of a fire training/practice area. A number of wooden and brick cabins used for the former school and teachers' cabin was located in the north east. A playground was located within the central section of the school. A concrete toilet block was located at the southern boundary of the school, with a single, concrete septic tank located to the south east of the toilet block. A large sports field was located to the east of the school.

Portion 11 comprised bushland and a reclaimed carpark and rest area. Bushland was noted to have been cleared in the northern and central area for the installation of overhead power lines. Some remnant earthen tracks were identified in the northern section, associated with access road to the power lines. A levelled, flat, reclaimed area was noted in the south and consisted of a large bitumen carpark and rest area. A wharf and boat ramp were allocated to the west.

Portion 12 was used as a rest stop accessed from the Pacific Motorway. A single lane bitumen road dissected the portion and was fronted by several picnic tables and carparks. A single-story toilet block was positioned in the centre of the portion adjacent to a single underground sewerage tank.

Portion 13 was used as an ambulance station and road and maritime services compound. The facilities were secured by metal fencing and accessed via security swipe card. Surrounding areas were cleared and relatively levelled, surfaced with grass cover.

2.3 Surrounding Land Use

The current land use of adjacent properties is shown in **Figure 2** and summarised below.

- North –generally comprised of bushland and residential properties and the Pacific Motorway.

- East – Commercial purposes including a lawn bowling club and oyster shed, Pacific Highway, Pacific Motorway, residences and bushland/vegetated areas. Further to the east is the Hawkesbury River and Mooney Mooney Creek.
- South – Bushland and Hawkesbury River.
- West – Hawkesbury River.

Based on the surrounding land uses identified during the site inspection, there is no significant potential offsite contamination sources located in the vicinity of the site, however it is noted that there is potential that the presence of the Pacific Motorway through the centre of the site may have the potential to impact the site via surface runoff.

2.4 Topography

Review of topographic information obtained from the Spatial Information Exchange Viewer, LPI regional topographic map indicated that Portion 6 contains the highest point at 80 m Australian Height Datum (AHD), the topography was then observed to fall in a north eastern, eastern, southern and western direction.

Portion 11 additionally contains a small rise with a high point of 30 m AHD falling to less than 10 m AHD in all directions.

The remainder of the site generally contains a gentle slope towards the Hawkesbury River at an approximate AHD of 4 m to 15 m.

Based on observations made during the site inspection, the topography of Peat Island (Portion 3) rises to the north approximately 4 m, with buildings located on the slopes.

The Pacific Motorway was observed to be raised above Portions 1, 2, 6 and 12 through the central area of the site. The Pacific Motorway generally follows the ridgeline with the site sloping from the Pacific Motorway towards the surrounding Hawkesbury River to the east, west and south.

2.5 Geology and Soils

JBS 2013a previously undertook a review of the regional 1:100 000 Sydney geological map, sheet series 9130 (1983), which indicated that the site is underlain by Triassic interbedded laminite, shale, and quartz to lithic quartz sandstone from the Narrabeen Group.

Reference to the online ESPADE 2.0 tool hosted by the NSW Office of Environment and Heritage (OEH 2017[5]) indicates that the site is within the Erina and Watagan residual soil landscapes.

The Erina residual soil landscape group typically occurs on undulating to rolling rises and low hills on fine-grained sandstones and claystones of the Narrabeen Group. The soils are characterised by moderately deep Yellow Podzolic Soils on sandstone crests and slopes; moderately deep Red Podzolic Soils on shale crests and steeper slopes; deep Yellow Podzolic Soils on shale lower slopes; and some deep Yellow Earths on colluvial footslopes. Soil limitations included very high soil erosion hazard, impermeable plastic low wet-strength subsoil, localised run-on, seasonal waterlogging of footslopes.

The Watagan residual soil landscape group typically occurs on rolling to very steep hills on fine-grained Narrabeen Group sediments. The soils are characterised by shallow to deep Lithosols/Siliceous Sands and Yellow Podzolic Soils on sandstones; moderately deep Brown Podzolic Soils, Red and Gleyed Podzolic Soils on shales.

[5] 'ESAPDE 2.0', NSW Office of Environment and heritage, Accessed 6 October 2017, OEH (2017)

2.6 Acid Sulfate Soils (ASS)

Review of JBS&G 2016 indicated that the site is located within an area which has a "Disturbed terrain" which may include filled areas, which often occur during reclamation of low lying swamps for urban development. JBS&G 2016 concluded that based on the geography and geology it was possible that ASS will be present at locations proximal to the river.

2.7 Hydrology

Peat Island is surrounded by the Hawkesbury River, which is the closest surface water body to the majority of the site. Surface water runoff is anticipated to flow in a westerly direction west of the motorway, toward the Hawkesbury River. Surface water runoff from Peat Island is anticipated to flow into the stormwater drains which feed into the Hawkesbury River from Peat Island.

For the remainder of the site, during heavy or prolonged rain periods, runoff is anticipated to follow the natural topography of these portions; with surface water runoff being anticipated to flow into the stormwater drains along adjacent roads. A ridgeline is located through the centre of the site (along the Pacific Motorway) with the portions to the east of the Pacific Motorway sloping downward to the east and the portions to the west of the Pacific Motorway sloping downward towards the west. There is also a moderate slope downwards to the south in the southern portions of the site. Any surface water not collected within the stormwater system is expected to follow local topography and into the Hawkesbury River which is located to the east, south and west of the site.

2.8 Hydrogeology

A review of the NSW Department of Primary Industries, Office of Water's Ground Water Monitoring overview map (accessed 26 October 2018) indicated there are a total of three registered groundwater bores within a 1.5 km search radius of the site. There was no available data for the three wells identified.

As discussed in JBS (2013a), groundwater is anticipated to be underlying the site within the interbedded sandstones. There may be shallow perched groundwater at the interfaces of fill and residual soils and bedrock. Shallow groundwater in areas close to Mooney Mooney Creek or the Hawkesbury River may be tidally influenced and undergo partial mixing with these surface water bodies.

Groundwater flow direction is anticipated to be to the south west and east towards Hawkesbury River, based on the local topography either side of the central ridgeline.

Three groundwater monitoring wells were previously installed at the former service station in 2013 by Noel Arnold & Associates (NAA). The depth to groundwater was reported between 3.3 and 4.94m bgs. During installation of the groundwater monitoring wells, the groundwater strike was reported approximately 8.5m bgs, indicating that the groundwater was likely located within the underlying fractured sandstone and was semi confined. Field parameter recorded by NAA indicated that the groundwater was slightly acidic, fresh water (based on electrical conductivity) and oxidising.

2.9 Flood Potential

A review of the Central Coast Council 1:100 year flood mapping tool indicated that there was potential that flooding may occur in:

- the northern and southern areas of Peat Island (Portion 3);
- the western portion of Portion 1 and 2 adjacent to the Hawkesbury River;
- the reclaimed area of Portion 4;
- the eastern boundary of Portion 8 and 9; and
- the reclaimed southern area of Portion 11.

3. Review of Provided Information

3.1 Phase 1 Environmental Site Assessment (JBS 2013a)

JBS Environmental Pty Ltd (JBS, now JBS&G) was engaged by Government Property NSW to complete a Preliminary Environmental Site Investigation (PSI, also referred to as a Phase 1 Environmental Site Assessment). The PSI assessed two areas, Peat Island, Mooney Mooney and the former DEC school, Point Road, Mooney Mooney.

The PSI was completed for portions 1 to 10 and was based on the review of site history including aerial photographs and a site inspection. The PSI identified potential areas of environmental concern (AECs). The AECs identified included an underground storage tanks (UST) associated with a former laundry, former sewage treatment, above ground storage tanks (ASTs), painter sheds, reclaimant land, suspected historical USTs, vacant service station (and underground infrastructure), oyster farmers and septic tank.

JBS (2013a) recommended that a detailed site investigation be undertaken at the site and that the identified USTs were decommissioned and validated.

3.2 Hazardous Materials Survey (JBS 2013b)

JBS (now JBS&G) completed a Hazardous Materials Survey (HMS) on the former Peat Island facility and associated surrounding areas. The HMS assessed two areas of the site, the former Peat Island facility and the former DEC school site. Selected buildings were inspected for ACM, asbestos in dust, lead based paint, lead in dust, synthetic mineral fibres (SMF) and polychlorinated biphenyls (PCBs).

Multiple buildings across the site were identified to contain suspected ACM, however the ACM was generally observed to be in a good condition and encapsulated with paint. The exterior paint on the former classroom and window sills of the service station were identified to contain lead paint. SMF was identified in the insulation lagging on the pipes of the laundry and the understory of the coffee shop/laundry. PCBs containing equipment were not identified during the inspections.

3.3 UPSS Contamination Assessment (NAA 2013)

Noel Arnold and Associates Pty Ltd (NAA) completed a Contamination Assessment of the Underground Petroleum Storage System (UPSS) at the former service station, located at Lot 3 DP 239249. The report identified two USTs using ground penetrating radar, one near the northern boundary aligned north to south and the other within the grassed area to the north aligned east west. Hydrocarbon odours were noted in the soils around the USTs and near the former service station building. No hydrocarbon impacts were reported in soil or groundwater samples collected and analysed. Soil and groundwater samples were also analysed for lead. The concentrations of lead within the soil samples were low and generally below the laboratory limit of reporting. All lead concentrations reported within the groundwater samples were below the laboratory limit of reporting. Additionally, ACM fragments were reported at the ground surface within the service station premises.

The groundwater wells were reported to have been installed to a depth between 10 and 10.5m bgs. The wells were reported to contain a 3m screen length. The standing water level was reported between 3.3 and 4.34m below the top of the well casing. For the investigation, the groundwater wells were surveyed which indicated the groundwater flow direction was to the east, generally following the local topography.

The report recommended the preparation and implementation of a remedial action plan (RAP) including additional investigations of other UPSS components (fuel lines, bowsers), followed by appropriate validation. Additionally, it was recommended that the asbestos identified be assessed and remediated.

3.4 Preliminary Contamination Assessment (JBS&G 2016)

JBS&G (2016) provided an update to JBS (2013a) PSI which reviewed the new conceptual proposal and provided updated recommendations to address the revised land use and site boundaries (consistent with current investigation), as well as changes to the site since the 2013 report.

At the time of the report, the plan provided to be submitted as part of the planning proposal for the site included the following zones: B2 Neighbourhood Centre, R1 General Residential, R2 Low Density Residential, RE1 Public Recreation, RE2 Private Recreation, E1 National Parks and Nature Reserves, SP2 Infrastructure and SP3 Tourist. Th Concept Plan for the site included:

- Community facilities including the construction of a local neighbourhood centre;
- 268 residences including residential lots, townhouses and apartment;
- Public car parking areas;
- Hotel/Accommodation, including new and existing buildings on Peat Island;
- Marina with wet berths, dry stacking facility and adjoining car parking area;
- Emergency services facilities to be relocated within the site;
- RMS facility to be relocated within the site;
- Vehicle access and parking facilities
- Landscaping and open spaces including a foreshore walkway and multiple public parks; and
- Areas of National Park.

JBS&G (2016) stated that the AECs identified within JBS (2013a) remained unchanged from the previous report. With the amended boundary, additional AECs identified included:

- Reclaimed land associated with Mooney Mooney Point;
- Reclaimed land associated with rerouting of the Pacific Highway through former mangrove swamp in the south east of the site; and
- Former service station.

It was concluded that there is potential for contamination of the site to have occurred based on past and current site usage, however historical use of the areas in question was not intensive and there were no indication of gross or widespread impact that would require management or impede development of the site. It was recommended that prior to redevelopment of the site, intrusive sampling targeting identified AECs applicable to the site should be undertaken to provide an adequate assessment of potential soil contamination and confirm the findings of the preliminary investigation.

3.5 SAQP (JBS&G 2018)

JBS&G (2018) completed a sampling, analysis and quality plan (SAQP) which reviewed the new conceptual proposal and provided updated recommendations to address the revised land use and site boundaries (consistent with current investigation), as well review the previous investigation undertaken at the site.

The SAQP identified where data gaps were considered to have occurred and outlined the proposed sampling plan for this targeted DSI.

3.6 Completeness of Provided Reports

It is considered that the review of previously reports provide generally adequate information for the design of the DSI. Copies of the aerial photographs and previous Dangerous Goods searches for selected lots is provided in **Appendix C**. It is noted that the Dangerous Goods search for the former service station did not identify any records relating to the USTs at the site.

3.7 Summary of Site History

A review of the historical information available for the site including aerial photographs, title details and news articles about the site was compiled following the review of previous reports. The site history review also included a review of the historical aerial photographs provided in **Appendix C**. The table below summaries the findings.

Table 3.1 Summary Site History

Period	Activity	Source
Prior to 1945	Peat Island was being used as a mental hospital at least from 1901 and was owned by the Crown from at least 1924. The Department of Education and Communities (DEC) school property was privately owned and used as an orchard until 1927 when the main roads of NSW acquired the land.	Title deeds and news articles
1945	DEC land was acquired by the Crown	Title deeds
1947	The south western area appeared to have agriculture occurring.	Aerial photograph (1947)
1950s-1960s	Potential burial of human remains on Peat Island	Other
1964	The F3 Motorway was being constructed, with reclamation of land occurring along the southern and western foreshores.	Aerial photograph (1964)
1978	Further reclamation of land along the southern foreshore	Aerial photograph (1978)
1979	Peat Island dedicated to hospital use	Title deeds
1986	Service Station and rural fire station constructed	Aerial photograph (1986)
1994	The DEC school site was transferred from Crown and to the Minister of education	Title deeds
2015	Additional structure visible on the grounds of the Hawkesbury River Ambulance Station and rest stop facilities to the east of the M1.	Aerial photograph (2015)

4. Conceptual Site Model

NEPC (2013) identifies a CSM as a representation of site related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The development of a CSM is an essential part of all site assessments.

NEPC (2013) identified the essential elements of a CSM as including:

- Known and potential sources of contamination and contaminants of concern including the mechanism(s) of contamination;
- Potentially affected media (soil, sediment and ambient air);
- Potential receptors; and
- Potential and complete exposure pathways.

4.1 Potential Areas of Environmental Concern

Based on the review of previous environmental investigations, history review and observations made during the JBS&G inspection of the site the identified AECs and associated COPCs for the site are presented in **Table 4.1**.

A location plan indicating AEC across the site is provided on **Figure 3**.

Table 4.1: Areas of Environmental Concern and Contaminants of Potential Concern

Portion	Areas of Environmental Concern (AEC)	Primary Contaminants of Potential Concern (COPC)
Portion 1 Former Laundry, education and leisure centre	• Generator • Former large laundry • UST associated with Laundry (possibly two tanks based on Dangerous Goods Records) • Potential of unknown origin fill material • Hazardous building material associated with the buildings	Heavy metals, total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs) and asbestos
Portion 2 Administration Building and Reclaimed Land	• AST (diesel) • Reclaimed land along water edge • Hazardous building material associated with the buildings • Possible RMS compound • Potential Aqueous Film Forming Foam (AFFF) runoff which may have been used for motor accidents on adjacent freeway	Heavy metals, TPH, BTEX and PAHs, asbestos, PCBs and per- and polyfluoroalkyl substances (PFAS).
Portion 3 Peat Island	• AST (diesel) • Painters shed • Cleaners shed • Potential fill material (including reclamation areas identified within the aerial photographs) • Hazardous building material associated with the buildings • Dangerous goods search indicated 1x 5250 L Petrol UST, 1x 2250 L Petrol UST, 1 x Compressed Chlorine Gas, 2x LPG gas tanks, 1x 4000 L diesel AST • Potential burial of human remains on Peat Island	Heavy metals, TPH, BTEX, PAHs, OCPs, PCBs and asbestos
Portion 4 Western Foreshore	• Potential Fill material associated with reclaimed land along water edge	Heavy metals, TPH, BTEX, PCBs and asbestos
Portion 5 Wharf	• Potential Fill material • Former sewage treatment • Wood Preservatives	Heavy metals, TPH, BTEX, PAHs, PCBs and asbestos.

Portion	Areas of Environmental Concern (AEC)	Primary Contaminants of Potential Concern (COPC)
Portion 6 Church and Cottages and bushland	• Hazardous building material associated with the buildings/structures • AST of heating oil	Heavy metals, TPH, BTEX, PAHs, OCPs, PCBs and asbestos
Portion 7 Former Service Station	• Hazardous building material associated with the former buildings • Three USTs • Potential fill material	Heavy metals, TPH, BTEX, PAHs, OCPs, PCBs and asbestos
Portion 8 Cottages	• Hazardous building material associated with the buildings • Oyster Farms	Heavy metals, TPH, BTEX, PAHs, OCPs, PCBs and asbestos
Portion 9 DEC School Farms and rural fire service depot	• Former Orchard • Septic Tank • Potential use/storage of AFFF (RFS site)	Heavy metals, TPH, BTEX, PAHs, OCPs, PCBs, asbestos and PFAS
Portion 10 Cottages	• Hazardous building material associated with the buildings	Heavy metals, TPH, BTEX, PAHs, OCPs, PCBs and asbestos
Portion 11 Reclaimed land associated with Mooney Mooney Point	• Fill of unknown origin • Acid sulphate soils	Heavy metals, TPH, BTEX, PAHs, OCPs, PCBs and asbestos
Portion 12 Rest Stop	• Fill of unknown origin • Runoff from Highway (including AFFF)	Heavy metals, TPH, BTEX, PAHs, OCPs, PCBs, asbestos and PFAS
Portion 13 Ambulance Station/RMS Depot	• Hazardous building material associated with buildings • Potential USTs to service ambulances	Heavy metals, TPH, BTEX, PAHs, OCPs, PCBs and asbestos

4.2 Potentially Impacted Media

Each of the AECs and corresponding COPCs identified in **Table 4.1** have the potential to result in impact to soil and groundwater underlying the site to the extent reflective of the size and potential contaminants associated with the identified AEC.

It is anticipated that the greatest level of potential impact will be to surface or shallow soils for the majority of the site. This is a consequence of the surface application of liquids (fuels, pesticides/herbicides, metals etc.) and other waste material, in addition to the potential for use of fill material at the site. If impact is found in surface soils, there may be potential for contamination to have leached/migrated into the deeper soil profile. There is potential for deeper impact to have occurred within the vicinity of the USTs and where reclamation of land (adjacent to Hawkesbury River) has occurred.

Due to the proximity of the site to the M1 motorway, there is potential that AFFF may have been used during fires associated with major accidents on the M1. Review of available information has indicated numerous fires associated with crashes in the vicinity of the site, however the use of AFFF is unknown.

Based on the potential leachability and mobility of the liquid nature (including hydrocarbons) of some identified COPCs, natural soils are considered to be potentially impacted media. As with the natural soils, the potential for groundwater impact will depend on the actual nature, occurrence and characteristic of impacts within the overlying fill materials and, potentially, the natural soils. Areas where liquid chemicals have potentially been stored, such as the USTs, has a greater potential to impact groundwater via downward migration of liquid contaminants.

In addition, it is noted fill material is likely underlain by relatively permeable alluvial deposits in foreshore areas, that potentially aid in the vertical migration of leachable COPCs. The anticipated fine sandstone/shale bedrock is likely to be relatively impermeable and will significantly reduce the migration of potentially contaminated media. Similar to groundwater, should soil impacts be identified, the potential for soil vapour as a contaminated media may require further consideration if volatile COPC are present.

4.3 Potential Receptors

Potential human and ecological receptors on or adjoining the site include:

- Site occupants / workers / residents and visitors;
- Flora and fauna on the site; and
- The marine water ecosystem of Hawksbury River.

4.4 Potential Exposure Pathways

Based on the COPCs identified in soil, groundwater and soil vapour, the potential exposure pathways for the site include:

- Oral and dermal pathways from impacted soils and groundwater (either through beneficial groundwater re-use or made accessible via ground disturbance);
- Inhalation of airborne contaminants (including airborne asbestos fibres);
- Inhalation of vapours migrating from impacted soils and groundwater; and
- Contaminant uptake via vegetation (flora) or bioaccumulation within fauna.

4.5 Potential for Migration

Contaminants generally migrate from site AECs via a combination of windblown dusts, rainwater infiltration, groundwater migration, vapour convection/diffusion and surface water runoff. The potential for contaminants to migrate is a combination of:

- The nature of the contaminants (solid/liquid and mobility characteristics);
- The extent of the contaminants (isolated or widespread);
- The location of the contaminants (surface soils or at depth); and
- The site topography, geology, hydrology and hydrogeology.

The potential contaminants of concern identified as part of the site history review and site inspection are potentially present in solid (e.g. ACM) and liquid (i.e. petroleum products associated with underground/above ground storage tanks) form.

The site surface was either hard or had good grass cover, which significantly reduces the potential for windblown contaminants to migrate onto or offsite.

There is the potential for contaminants to migrate via surface water runoff from the site, given the slope of the site and the proximity of the river to the site. It is noted that the observed vegetation and grass cover would slow the migration of contaminants.

There is potential for contaminants to migrate through the soil and into groundwater. Identified COPC were likely present as solids for asbestos or had been potentially applied/stored in liquid form, such as metals, pesticides and fuels. It is considered that metals or pesticides would typically be applied in a liquid form (water base), which upon drying, would leave COPC in a dry form that would be expected to adsorb to soil particles. Petroleum products, such as fuels have a greater potential to impact underlying groundwater, particularly surrounding, which had potentially been used for vehicle mechanical repairs and storage of petroleum products. Based on the type of COPC and the anticipated depth to groundwater it is considered that the potential for sub-surface migration processes is typically low at the site, with the exception of subsurface fuel storage in USTs which poses a greater risk to shallow groundwater.

4.6 Preferential Pathways

For the purpose of this assessment, preferential pathways have been identified as natural and/or man-made pathways that result in the preferential migration of COPC as either solids (sediments), liquids (services / drainage) or volatile compounds (vapour).

Man-made preferential pathways are likely to be present on the site generally associated with areas of previously disturbed natural ground including service/drainage trenches, fill materials present beneath existing ground surface, and at near surface depths. Fill materials and disturbed natural soil are anticipated to have a higher permeability than the underlying natural soil and/or bedrock.

4.7 Data Gap Assessment

In the development of the CSM the following data gaps were identified and the investigation to address the data gaps have been incorporated into the updated sampling analysis plan (**Section 5**):

- The location and status of USTs at Peat Island (Portion 3) and the former service station (Portion 7);
- The type and chemical suitability of the fill material used (predominantly associated with reclamation area of Peat Island (Portion 3), Portion 4 and the southern area of Portion 11;
- Potential runoff and impact from the M1 Motorway; and
- Potential impact from the Rural Fire Service.

5. Sampling and Analysis Plan

5.1 Data Quality Objectives

Data Quality Objectives (DQO's) were established for the investigation, as discussed in the following sections.

5.1.1 State the Problem

The site is to be potentially redeveloped for a mixed land use, including sensitive residential and open space areas. No extensive intrusive investigations have been undertaken, however, the site has been subjected to potential contaminating activities including filling and fuel storage. Assessment is required to ascertain if there is a potential contamination risk for any proposed future rezoning and development at the site which could not be remediated or managed under an environmental management plan.

5.1.2 Identify the Decision

Based on the decision-making process for assessing urban redevelopment sites in EPA (2017[6]), the following decisions must be made:

- Are there any unacceptable risks to likely future onsite receptors from soil?
- Are there any unacceptable risks to likely future receptors from impacted groundwater?
- Are there any issues relating to the local area background soil concentrations that exceed appropriate soil criteria?
- Are there any impacts from chemicals mixtures?
- Are there any aesthetics issues in fill soils at the site?
- Is there any evidence of, or potential for, migration of contaminants off-site?
- Is there any areas of contamination that would restrict proposed land use suitability?
- Is a remediation or site management strategy required?

5.1.3 Identify Inputs to the Decision

Inputs to the decisions are:

- Site condition information and site historical information;
- Field observations, sampling and analytical data during the investigation works;
- Completion of ground penetrating radar (GPR) where underground infrastructure is potentially located;
- Physical observations, including visual and olfactory observations;
- Data quality indicators as assessed by quality assurance/quality control procedures (QA/QC);
- Consideration of the proposed development and site use as provided;
- Adopted assessment criteria from guidelines made or approved by the EPA.

Specifically, sufficient data was required to be collected from the identified potentially impacted media in the identified areas of environmental concern for the associated potential contaminants of concern (**Section 4.1**).

[6] *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme (3rd Edition).'* NSW Environmental Protection Authority, November 2017, EPA (2017)

5.1.4 Define the Site Boundaries

The lateral extent of the site is an area of approximately 38 ha known as the Peat Island Precinct, Mooney Mooney, NSW. (**Figure 1 and 2)**. The vertical extent of the investigation was 3.0 m bgs and extended into natural soils at all locations.

The temporal boundaries were limited to the period of the investigation. Given the investigation objectives, it was not necessary to consider seasonality.

5.1.5 Develop a Decision Rule

The results of the soil assessment were directly compared the initial screening criteria. Should exceedances be identified, consideration of appropriate criteria for the proposed development were considered. In addition, where appropriate, statistical analysis may be undertaken with the following statistical criteria adopted:

- The 95 % Upper Confidence Limit (UCL) on the average concentration for each analyte (calculated for samples collected from consistent soil horizons, stratigraphy or material types) must be below the adopted criterion;
- No single analyte concentration shall exceed 250 % of the adopted criterion; and
- The standard deviation of the results must be less than 50 % of the criterion.

Groundwater results were compared against the adopted criteria for the investigation, data obtained from historical investigations (service station), and appropriate background data, to assess if impact has occurred to the groundwater which would present a risk to the proposed development.

The decision rules adopted to answer the decisions identified in **Section 5.1.2** are summarised in **Table 5.1**.

Table 5.1: Summary of Decision Rules

Decision Required to be Made	Decision Rule
1. Are there any unacceptable risks to likely future onsite receptors from soil?	Statistical analysis of the data was completed in accordance with relevant guidance documents, as appropriate, to facilitate the decisions. The criteria in **Section 6**, and the following statistical criteria were adopted with respect to soils: Either: the reported concentrations were all below the Site criteria; Or: the average site concentration for each analyte was below the adopted site criterion; no single analyte concentration exceeded 250 % of the adopted site criterion; and the standard deviation of the results was less than 50 % of the Site criterion; And: the 95 % UCL of the average concentration for each analyte was below the adopted site criterion. If the statistical criteria stated above were satisfied, the answer to the decision was No. If the statistical criteria were not satisfied, the answer to the decision was Yes.
2. Are there any unacceptable risks to likely future receptors from impacted groundwater?	Groundwater concentrations will be compared against the appropriate criteria as present in **Section 6**.
3. Are there any issues relating to the local area background soil concentrations that exceed appropriate soil criteria?	Background soil concentrations as detailed in Trace Element Concentrations in Soils from Rural and Urban Areas of Australia (Henry Olzworthy Et Al. 1995[7]) were used for comparison of site soil data. If there were any contaminants at concentrations substantially outside background ranges, then the answer was yes, otherwise the answer was no.

[7] *'Trace Element Concentrations in Soils from Rural and Urban Areas of Australia'*, Henry Olszowy *Et Al*., (Henry Olszowy *et Al.* 1995)

Decision Required to be Made	Decision Rule
4. Are there any impacts from chemical mixtures?	Were there more than one group of contaminants present which increase the risk of harm? If there was, the decision was Yes. Otherwise, the decision was No.
5. Are there any aesthetic issues in fill soils at the site?	If there were any Asbestos Containing Material (ACM) fragments on the ground surface, any unacceptable odours, any soil discolouration, or excessive amounts of anthropogenic material, the answer to the decision was Yes. Otherwise, the answer to the decision was No.
6.Is there any evidence of, or potential for, migration of contaminants off-site?	Based on assessment results, was there any evidence of, or the potential for, unacceptable contaminant concentrations to migrate from the Site? If yes, the answer to the decisions was Yes. Otherwise, the answer to the decision was No.
7. Is there any areas of contamination that would restrict proposed land use suitability?	Based on the results, are there any areas that would be restricted from a residential development? If yes, the answer to the decision was Yes. Otherwise, the answer to the decision was No.
8. Is a remediation or site management strategy required?	Was the answer to any of the above decisions Yes? If yes, a site management/remediation strategy is required. If no, a site management/remediation strategy is not required.

5.1.6 Specify Limits of Decision Error

This step is to establish the decision maker's tolerable limits on decision errors, which are used to establish performance goals for limiting uncertainty in the data. Data generated during this project must be appropriate to allow decisions to be made with confidence.

Specific limits for this project have been adopted in accordance with the appropriate guidance from NSW EPA, NEPC 2013, appropriate indicators of data quality (DQIs) established for the project as discussed below in relation to precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS parameters). The acceptable limit on decision error is 95 % compliance with DQIs.

The DQIs and data assessment criteria are summarised in **Table 5.2**.

- **Precision** – measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples.
- **Accuracy** – measure the bias in a measurement system. The accuracy of the laboratory data that are generated during this study is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.
- **Representativeness** - expresses the degree which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collected samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.
- **Comparability** – expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; ensuring analysing laboratories use consistent analysis techniques and reporting methods.
- **Completeness** – is 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.

- **Sensitivity** – expresses the appropriateness of the chosen laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted site assessment criteria.

Table 5.2: Summary of Data Quality Indicators

Data Quality Indicators	Frequency	Data Quality Criteria
Precision		
Blind duplicates (intra laboratory)	1 / 20 samples	<30 % RPD or agreement between asbestos presence/absence[1]
Blind duplicates (inter laboratory)	1 / 20 samples	
Trip spike	1 per sampling event	70-130 % recovery
Laboratory duplicates	1 / 20 samples	<50 % RPD[1]
Accuracy		
Surrogate spikes	All organic samples	70-130 %
Laboratory control samples	1 per lab batch	<LOR
Matrix spikes	1 per lab batch	70-130 %
Representativeness		
Sampling appropriate for media and analytes	-	-[2]
Samples extracted and analysed within holding times	-	Soil: organics (14 days), inorganics (6 months) Groundwater: sTPHs/PAHs (7 days), VOCs/vTPHs (14 days), Metals (6 months)
Trip blank	1 per sampling event	<LOR
Rinsate blank	1 per sampling event	<LOR
Comparability		
Standard operating procedures for sample collection and handling	All samples	All samples
Standard analytical methods used for all analyses	All samples	All samples
Consistent field conditions, sampling staff and laboratory analysis	All samples	All samples[2]
Limits of reporting appropriate and consistent	All samples	All samples
Completeness		
Sample description and COCs completed and appropriate	All samples	All samples[2]
Appropriate documentation	All samples	All samples[2]
Satisfactory frequency and result for QC samples	All QA/QC samples	95 % compliance
Data from critical samples considered valid	-	Critical samples valid
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria	All samples	LOR <= Site assessment criteria

(1) If the RPD between duplicates is greater than the pre-determined data quality indicator, a judgement will be made as to whether the excess is critical in relation to the validation of the data set or unacceptable sample error is occurring in the field.
(2) A qualitative assessment of compliance with standard procedures and appropriate sample collection methods will be completed during the DQI compliance assessment.

If any of the DQIs were not met, further assessment was necessary to determine whether the non-conformance significantly affected the usefulness of the data. Corrective actions might have included requesting further information from samplers and/or analytical laboratories, downgrading of the quality of the data or alternatively, re-collection of the data.

5.1.7 Optimise the Decision for Obtaining Data

Various strategies for developing a statistically based sampling plan are identified in EPA (1995), including judgemental, random, systematic and stratified sampling patterns.

Based on the review of historical reports and available information provided for the site, it was considered that sampling from 78 locations was suitable to identify potential contaminating risks.

The sample locations were designed to target areas of environmental concern (AEC) identified within the previous reports. Where potential historically contaminating activities may have occurred, random grid-based sampling was completed within the general vicinity of the AEC.

Due to the consistent site use, the lack of industrial activities to have occurred at the site or in the general area, the generally reliable historical data obtained, review of the previous reports and observations made during the site inspection, it is considered that targeted sampling of the AEC was an appropriate sampling strategy and is in general accordance of with Australian Standard 4482 and NEPC 2013.

Five groundwater monitoring wells were installed targeting the location of known or suspected underground infrastructure (underground storage tanks) which likely contained petroleum hydrocarbons. In addition to the installation of the groundwater wells, previously installed groundwater wells at the service station (three wells) were also sampled. The three wells previously installed were inspected prior to sampling. The wells were free of blockages and were considered to be in adequate condition for sampling. The three previously installed groundwater monitoring wells were installed to a depth between 10 and 10.5m bgs. The screen depths for the wells was between 7 and 10.5m bgs. It was noted that this was below the base of the USTs. During the installation of MW03 by JBS&G (located adjacent to the USTs), it was noted that groundwater was not intercepted until approximately 7m bgs. This was consistent with the reported depth of water in the previously installed groundwater wells. It was noted that the standing water level (SWL) in all groundwater wells was above the screen in the groundwater wells indicating that the groundwater beneath the service station is semi-confined. In addition, as no evidence of staining, volatile (through the use of a PID) and odours were generally identified, it is considered that the groundwater wells are adequate to identify any light non-aqueous phase liquid (LNAPL) associated with the previous use as a service station within the groundwater at the site.

Due to the inconsistencies identified during the review of previous investigations and Dangerous Goods records, it was considered that a geophysical survey (ground penetrating radar (GPR)) be used. The use of the GPR was completed in areas where USTs had been previously indicated (by Dangerous Goods records on Peat Island) or suspected from observations made during the site inspection (former service station). The results of the GPR are summarised in **Section 5.2**.

Where building rubble is identified within fill material and dilapidated buildings where ACM was previously identified within the Asbestos Register, ACM was considered a contaminant of concern. ACM was assessed during the investigation through visual assessment and the collection and analysis of soil and ACM fragment samples (where identified).

Due to the dense vegetation located in the northern area of Portion 1, the majority of Portion 6, the eastern area of Portion 8 and the central area od Portion 11, soil sampling was not completed in these areas due to access constraints. A limited site inspection was completed at these locations and observations did not identify the presence of significantly contaminating features which would prevent the proposed development. Due to the dense vegetation and lack of historical use, it is considered that contamination at these locations would be low.

A summary of the sampling and analysis plan completed is provided in **Table 5.3**.

Table 5.3: Sampling and Analysis Plan Completed

Portion	Area of Concern	Media and Sampling method	Summary	Analysis
Portion 1 Former Laundry, education and leisure centre	• Generator • Former large laundry • UST associated with Laundry (possibly two tanks based on Dangerous Goods Records) • Potential of unknown origin fill material • Hazardous building material associated with the buildings	• Groundwater (two wells) - Installed via solid flight auger (GW01 and GW02) • Soil (seven locations) - Five locations advanced via test pit (SS09 to SS13) - Two via solid flight auger (GW01 and GW02)	• Fill material – estimated to be between 0.1 and 0.7 m bgs • End of hole between 0.3 and 5.0 m bgs.	• Heavy Metals – seven samples • TRH/BTEX – five samples • PAH – one sample • OCP/PCB - one sample
Portion 2 Administration Building and Reclaimed Land	• Aboveground storage tank (AST) (diesel) • Reclaimed land along water edge • Hazardous building material associated with the buildings • Former sewage treatment	• Soil (ten locations) - Two locations via hand auger (SS69 and SS71) - Eight via Test pit (SS14, SS15, SS16, SS18, SS19, SS23, SS24, SS31)	• Fill material – estimated to be between 0 and 0.3 m bgs • End of hole between 0.1 and 3.5 m bgs.	• Heavy Metals – eight samples • TRH/BTEX – three samples • PAH – one sample • OCP/PCB – two samples
Portion 3 Peat Island	• Above Ground Storage Tanks (diesel) • Painters shed • Cleaners shed • Potential fill material • Hazardous building material associated with the buildings • Dangerous goods search indicated 1x 5250 L Petrol UST, 1x 2250 L Petrol UST, 1 x Compressed Chlorine Gas, 2x LPG gas tanks, 1x 4000 L diesel AST • UST, bowser and vent line adjacent to wharf • Potential burial of human remains on Peat Island	• Groundwater (two locations) - Installed via solid flight auger (GW04 and GW05) • Soil (14 locations) - Ten via test pit (SS01 to SS08, SS27 and SS28) - Two via hand auger (SS30 and SS73) - Two via solid flight auger (GW04 and GW05)	• Fill material – estimated to be between 0.15 and 1.7 m bgs • End of hole between 0.1 and 1.8 m bgs. • No evidence of UST identified via GPR	• Heavy Metals – 16 samples • TRH/BTEX – 12 samples • PAH – five samples • OCP/PCB – three samples • Asbestos – six samples
Portion 4 Western Foreshore	• Potential Fill material associated with reclaimed Land along water edge	• Soil (two locations) - Two via test pit (SS25 and SS26)	• Fill material – estimated to be to a depth of 0.2m bgs. • End of hole between 0.5 and 1.3 m bgs.	• Heavy Metals – two samples • TRH/BTEX – one sample • PAH – one sample OCP/PCB – one sample
Portion 5 Wharf	• Potential Fill material • Wood Preservatives	• Soil (two locations) - one via test pit (SS17) - one via hand auger (SS40)	• Fill material – estimated to be between 0 and 0.6 m bgs. • End of hole between 0.1 and 1.1 m bgs.	• Heavy Metals – two samples • TRH/BTEX – one sample • PAH – one sample OCP/PCB – one sample

Portion	Area of Concern	Media and Sampling method	Summary	Analysis
Portion 6 Church and Cottages and bushland	• Hazardous building material associated with the buildings • AST of heating oil	• Soil (nine locations) - three via hand auger (SS48*, SS68 and SS72) - six via test pit (SS33, SS35, SS37, SS39, SS41, SS42)	• Fill material – estimated to be between 0 and 0.3 m bgs. • End of hole between 0.1 and 2.0 m bgs.	• Heavy Metals – nine samples • TRH/BTEX – four samples • PAH – four sample • OCP/PCB – three samples • Asbestos – one sample • PH, % Clay, CEC – one sample
Portion 7 Service Station	• Hazardous building material associated with the buildings • USTs (two, possibly three tanks) • Potential fill material	• Groundwater (four locations) - one via solid flight auger (GW03) - three existing (MW01 to MW03) • Soil (two locations) - one via test pit (SS29) - one via solid flight auger (GW03)	• Fill material – estimated to be between 0.3 and 3.0 m bgs. • End of hole depth between 3.0 and 10.0 m bgs. • Three USTs identified via GPR	• Heavy Metals – four samples • TRH/BTEX – three samples • PAH – two samples
Portion 8 Cottages	• Hazardous building material associated with the buildings • USTs (two, possibly three tanks) • Potential fill material	• Soil (10 locations) - Advanced via hand auger (SS56 to SS65)	• Fill material – estimated to be between 0.1 and 0.4 m bgs. • End of hole between 0.2 and 0.5 m bgs.	• Heavy Metals – 12 samples • TRH/BTEX – four samples • PAH – one sample • OCP/PCB – three samples • Asbestos – one sample • PH, % Clay, CEC – one sample
Portion 9 DEC School Farms and rural fire service depot	• Former Orchard • Septic Tank • Possible storage/use of AFFF	• Soil (four locations) - Two via hand auger (SS46, SS47) - Two via test pit (SS43, SS44)	• Fill material – estimated to be between 0 and 0.3 m bgs. • End of hole between 0.1 and 0.3 m bgs.	• Heavy Metals – four samples • TRH/BTEX – one sample • PAH – one sample • OCP/PCB – two samples
Portion 10 Cottages	• Hazardous building material associated with the buildings Oyster	• Soil (five locations) - three via test pit (SS45, SS48 and SS49) - two via hand auger (SS54 and SS55)	• Fill material – estimated to be between 0.1 and 0.2 m bgs. • End of hole between 0.1 and 1.4 m bgs.	• Heavy Metals – three samples • PFAS – two samples
Portion 11 Reclaimed land associated with Mooney Mooney Point	• Fill of unknow origin • Acid sulphate soils	• Soil (six locations) - three via test pit (SS20 to SS22) - three via hand auger (SS32, SS34, SS36)	• Fill material – estimated to be between 0 and 0.7 m bgs. • End of hole between 0.2 and 2.5 m bgs.	• Heavy Metals – six samples • TRH/BTEX – three samples • PAH – one sample • OCP/PCB – two samples • Asbestos – two samples

Portion	Area of Concern	Media and Sampling method	Summary	Analysis
Portion 12 Rest Stop	• Fill of unknow origin • Runoff from Highway	• Soil (five locations) - advanced via hand auger (SS50 to SS53 and SS70)	• Fill material – estimated to be between 0.1 and 0.4 m bgs. • End of hole between 0.1 and 0.4 m bgs.	• Heavy Metals – four samples • OCP/PCB – one sample • PH, % Clay, CEC – one sample • PFAS – one sample
Portion 13 Ambulance Station	• Hazardous building material associated with buildings • Potential USTs to service ambulances	• Soil (two locations) - advanced via hand auger (SS66 and SS67)	• Fill material – estimated to be between 0.1 and 0.2 m bgs. • End of hole between 0.2 and 0.7 m bgs.	• Heavy Metals – three samples • TRH/BTEX – two samples • PAH – two samples • OCP/PCB – one sample • Asbestos – one sample

5.2 Ground Penetrating Radar

A GPR survey was completed at the former service station (Portion 7) and on Peat Island (Portion 3) where underground infrastructure was suspected to be located. This was completed to provide additional information associated with data gaps regarding historical USTs at the site. Historical Dangerous Goods records indicated the historical presence of up to three USTs on Peat Island (Portion 3), however no indicators of the USTs were identified during the site inspection. It was noted that the Dangerous Goods records indicated at least two of the USTs were to be decommissioned, however it was unknown if this occurred. No Dangerous Goods records were available for the former service station, however the site inspection identified the presence of three fill points, however the locations and status of the USTs was unknown.

5.2.1 Service Station (Portion 7)

The GPR survey at the service station identified the presence of three underground storage tanks (USTs). This is consistent with site observations where three fill points were observed within the service station boundary. The USTs were located within an unsealed area to the north of the service station concrete forecourt. The dip points were exposed to allow an inspection of the USTs. It was noted that one of the UST had been decommissioned by concrete filling. The remaining two USTs were accessed, and dipsticks were located within the dip points. The dip sticks indicated that the USTs were approximately 10,000L each. The northern most UST was noted to contain approximately 2000L of fuel or a fuel/water mix. The locations of the identified USTs are shown in **Figure 4**.

5.2.2 Peat Island (Portion 3)

A review of the licensed Dangerous Goods Register provided in 2013 identified three locations on Peat Island where USTs were potentially located. During the site inspection, no evidence of USTs (including dip points, fill points, vent pipes or bowsers) were observed. The GPR survey also failed to identify potential location for the USTs (associated with disturbed material). The potential UST located in the south eastern portion of Peat Island was licensed in 1949 and was likely associated with refilling of boats which operated between the mainland and Peat Island. Following the completion of the causeway (understood to be circa 1957), it is considered likely that the UST became redundant. The two remaining USTs appeared to have remained licensed until at least 2003 where records indicated the USTs were reported for decommissioning.

As no indicators of the USTs were identified via visual observation or the GPR survey, a groundwater wells were installed within the vicinity of the suspected locations to allow a greater assessment of significant impact associated with leaks or spills from the USTs. Soil samples were also collected the in the general area where the USTs may have been located.

5.3 Identified Above Ground and Underground Storage Tanks

A review of the previous historical records, site observations and the completion of the GPR survey at selected locations as outlined within **Section 5.2** identified the presence of ASTs and USTs at the site. A summary of the ASTs and USTs identified is provided in **Table 5.4**

Table 5.4: Identified ASTs and USTs

Type	Location	Approximate Size	Status
AST	Portion 3 (Peat Island)	4,000L	Empty
	Portion 2 (Administration Building and Reclaimed Land)	1,000L	Empty
LPG	Portion 1 (Former Laundry)	2,200L	Unknown
	Portion 3 (Peat Island)	1,000L	Unknown
	Portion 3 (Peat Island)	2,000L	Unknown
	Portion 9 (School)	1,000L	Unknown
	Portion 6 (Church)	1,250L	Unknown
UST	Portion 7 (Service Station)	10,000L	Decommissioned
		10,000L	Empty
		10,000L	Approximately 2000L fuel or fuel / water mix
	Portion 1 (Former laundry, education and leisure centre)	Unknown	Unknown

5.4 Soil Investigation

5.4.1 Soil Sampling Methodology

5.4.1.1 General Site

Soil samples were collected from test pits via mechanical excavation, hand auger, grab samples from solid flight auger or hand tools between 17 September and 28 September 2018. Where possible, samples were collected via test pitting to allow visual assessment of the underlying soils. Soil samples were collected from the centre of the excavator bucket with collection of the sample completed with a fresh pair of nitrile gloves. Where hand augers were used, the samples were collected from the hand auger with a fresh pair of nitrile gloves and placed within the appropriate jars for analysis. During the installation of the groundwater monitoring wells, grab samples were also collected from the spoil with a fresh pair of nitrile gloves and placed within appropriate jars for analysis. All samples were placed within a cooler for transport to the laboratory.

During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indicators of potential contamination were noted on test pit logs if observed (**Appendix E**). Soil bags were collected for the purposes of volatile field screening with the use of the PID with readings reported on the test pit logs (**Appendix E**). Calibration records for the PID are provided in **Appendix J**. The PID was calibrated daily prior to use with calibration certificates provided in **Appendix J**.

Collected soil samples were immediately transferred to laboratory supplied sample jars and polyethylene zip lock bags. The sample containers were labelled, sealed and transferred to an esky for sample preservation prior to and during shipment. A chain-of-custody form was completed and forwarded with the samples to the testing laboratory and is attached as **Appendix F**.

Not all soil samples collected were analysed. Samples were analysed in accordance with the analytical schedule (**Section 5.4**).

5.4.1.2 PFAS locations

All samples collected for PFAS analysis were collected via a shovel to prevent any potential cross contamination of potentially PFAS impacted soil. All samples were collected with a fresh pair of PFAS free gloves. The samples were placed within laboratory supplied jars with the absence of Teflon-lined lids. Care was also taken the ensure that soils did not come into contact with clothing,

plastic food wrappers or other items which potential contain PFAS. Each sample was labelled with the use of a ball point pen.

5.4.2 Soil Sampling Summary

Based on the review of previous environmental investigations, historical review, observations made during site inspections and discussions with the site owner, the investigation was completed to assess areas of environmental concern that would restrict the proposed redevelopment of the site. A summary of the soil investigation completed for each portion at the site is provided in **Table A**.

It was noted during the site inspection that the northern area of Portion 1, the majority of Portion 6, the eastern area of Portion 8 and the central area of Portion 11 were density vegetated.

5.5 Groundwater Investigation

5.5.1 Installation of New Groundwater Monitoring Wells

New groundwater monitoring wells were constructed from PVC (Class 18) casing and pre-slotted screen were installed into a drilled borehole such that the screen interval was across the groundwater. Gravel pack (clean graded sand) was added to the annulus across the screen interval and then sealed by bentonite. Construction details are provided in **Appendix E**. All groundwater monitoring wells were drilled using solid flight auger, however hard sandstone was encountered within monitoring wells GW02 and GW03 where air hammer was used to drill to the depth required for the installation of the groundwater monitoring well.

5.5.2 Development of Groundwater Monitoring Wells

Following installation, the installed groundwater monitoring wells were developed to remove any impact to the groundwater caused during the drilling and installation process. The groundwater monitoring wells were developed using a “foot valve”. Removal if the groundwater occurred until the groundwater became clear (no evidence of drilling impact) or at least until 60L of groundwater was removed.

The newly installed groundwater monitoring wells were allowed to settle (equilibrate) for at least 5 days after development. In addition, due to the length of time between sampling events, all previously installed groundwater wells were redeveloped at least 3 days prior to purging and sampling.

5.5.3 Groundwater Sampling Methodology

Prior to sampling, the monitoring wells were purged by micropurge pump (bladder pump). Standing water within the monitoring wells was pumped out at the highest possible flow rate while ensuring that minimal fluctuations in depth to water occurred. Standing water levels were continuously monitored and sample flow rates were altered to minimise groundwater drawdown. A flow cell was used to facilitate the continuous monitoring of water quality parameters using a water quality meter, that included: electrical conductivity (EC); redox potential (Eh); pH; dissolved oxygen (DO); and temperature. As per sampling guidance provided by the Victorian EPA (April 2000) – Groundwater Sampling Guidelines, groundwater samples were collected when field parameters had stabilised as follows:

- Consecutive EC readings are within 3%;
- Consecutive Eh readings are within 10mV;
- Consecutive DO readings are within 10%; and
- Consecutive pH readings are within 0.5.

The micropurge pump was placed at approximately halfway of the screened depth to ensure that all groundwater purged and collected was representative of the aquifer. It is considered that the

potential for stagnant water mixing with groundwater samples are low due to the redevelopment of the groundwater wells at least 5 days prior to groundwater sampling.

Sampling notes were completed for each monitoring well detailing parameter stabilisation and sampling observations. The sampling notes are provided in **Appendix G**. Collected groundwater samples were immediately transferred to laboratory supplied sample bottles specific to each analyte. Samples for metal analysis were filtered (0.45µm) in the field prior to transfer to a pre-acidified laboratory prepared bottles. Sample containers were then transferred to a chilled cooler for sample preservation prior to and during shipment to the testing laboratory. A fresh pair of nitrile gloves were used between each sample collection. Sample preparation and preservation was completed in accordance with the protocols outlined within NEPC 2013.

5.5.4 Decontamination

All samples were collected with the use of a fresh pair of nitrile gloves. Rinsate samples were collected where reusable equipment was used during the samples collection process. Hand tools including the hand auger was washed with Decon 90 and rinsed with deionised water between each sample location. Where samples were collected for PFAS analysis using a shovel, the shovel was washed with PFAS free detergent and rinsed with deionised water between each sample location.

At the completion of groundwater sampling at each location, single use equipment was disposed of and re-usable equipment including the interface probe were decontaminated as follows:

- Pressure spray with Decon 90 detergent and potable water mix;
- Pressure spray rinse with potable water; and
- Air drying.

5.5.5 Duplicate and Triplicate Sample Preparation

Field duplicate and triplicate soil samples were obtained during sampling using the above sampling methods. The collected samples were then divided laterally into three samples within minimal disturbance to reduce the potential for loss of volatiles and placed in three glass jars or sample bags as appropriate. Each sample was then labelled with a primary, duplicate or triplicate sample identification before being placed in the same chilled esky for laboratory transport.

5.6 Laboratory Analyses

JBS&G subcontracted Eurofins MGT Ltd (Eurofins) at Lane Cove, NSW as the primary laboratory for the required analyses. The secondary laboratory for the works was Envirolab Services Pty Ltd (Envirolab) at Chatswood. Both laboratories are NATA accredited for the required analyses. Laboratory analysis of samples was conducted with reference to COPCs identified for the site. The analytical schedule adopted for the investigation is summarised in **Table 5.4** below.

Table 5.5: Analytical Schedule

Area of Environmental Concern (AEC)	No. of Sampling Locations	No. of Analyses (excl. QA/QC)
Soil	78 locations	Heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) – 81 samples (selected samples also included Ag, Mo, Se, Sn) Petroleum Hydrocarbons – 20 samples PAHs – 20 samples OCPs, PCBs – 20 samples Asbestos – 13 samples (500mL per NEPC 2013) Ecological Parameters (% Clay content, CEC & pH) - 3 samples PFAS – 6 samples
Groundwater	8 locations	TRH/BTEXN – 8 samples PAH – 8 samples VOCs – 3 samples

		Heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) – 8 samples

In addition to the primary sample analyses as outlined in **Table 5.3** below, field QA/QC samples were collected/prepared and submitted for analysis at the densities required to meet the project DQI requirements outlined in **Table 5.2**.

6. Assessment Criteria

Site assessment criteria have been adopted with consideration to aspects of the following guidelines, as relevant:

- National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1), National Environment Protection Council (NEPC 2013);
- Contaminated Sites: Sampling Design Guidelines, NSW EPA, 1995 (EPA 1995);
- Guidelines for consultants reporting on contaminated land: Contaminated land guidelines, NSW EPA, 2020 (EPA 2020);
- Contaminated Sites: Guidelines for the NSW Site Auditor Scheme, 3rd Edition, NSW EPA, 2017 (EPA 2017);
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018);
- Australian Drinking Water Guidelines 6, National Health and Medical Research Council, 2011 (ADWG 2011); and
- PFAS National Environmental Management Plan Version 2.0 (NEMP) (HEPA 2020).

In addition, Managing Land Contamination, Planning Guidelines SEPP 55 – Remediation of Land was considered for this investigation.

6.1 Soil Assessment Criteria Selection

6.2 Assessment Criteria

The site may be developed for a range of future land uses including tourism, commercial, open space and residential. Noting that use of the site for residential use would be the most sensitive potential land-use scenario, concentrations of contaminants will be initially screened against NEPC (2013) health-based investigation and screening levels (HILS and HSLs), and ecological investigation and screening levels (EILs and ESLs), for residential land use scenarios where there is access to surface soils.

Where required, results will be statistically assessed.

The adopted screening criteria for PFAS was based on the PFAS National Environment Management Plan.

Where appropriate, after consideration of relevant ESLs and HSLs for TRH fractions, NEPC (2013) Management Limits for TPH fractions may be utilised.

Table 6.1 Health Based Soil Investigation Criteria and Hydrocarbon Management Limits

	Limit of Reporting	Laboratory Method	Health Investigation/ Screening Levels Residential A (mg/kg)	Management Limits[5] Residential, parkland and open space (mg/kg)
METALS				
Arsenic	2.0	ICP-AES (USEPA 200.7)	100	-
Cadmium	0.4	ICP-AES (USEPA 200.7)	20	-
Chromium	5.0	ICP-AES (USEPA 200.7)	100[1]	-
Chromium (VI)	5.0	Alkali leach colorimetric (APHA3500-Cr/USEAP3060A)	100	-
Copper	5.0	ICP-AES (USEPA 200.7)	6000	-
Nickel	5.0	ICP-AES (USEPA 200.7)	400	-
Lead	5.0	ICP-AES (USEPA 200.7)	300	-
Zinc	5.0	ICP-AES (USEPA 200.7)	7400	-
Mercury (inorganic)	0.05	Cold Vapour ASS (USEPA 7471A)	40[2]	-

	Limit of Reporting	Laboratory Method	Health Investigation/ Screening Levels Residential A (mg/kg)	Management Limits[5] Residential, parkland and open space (mg/kg)
POLYCYCLIC AROMATIC HYDROCARBONS				
Carcinogenic PAHs (as B(a)P TPE)[3]	0.5	GCMS (USEPA8270)	3	-
Naphthalene	0.5	GCMS (USEPA8270)	3[6]	-
Total PAHs[4]	0.5	GCMS (USEPA8270)	300	-
ORGANOCHLORINE PESTICIDES				
DDT+DDE+DDD	0.05	LTM-ORG-2220	240	-
Aldrin and dieldrin	0.05	LTM-ORG-2220	6	-
Chlordane	0.1	LTM-ORG-2220	50	-
Endosulfan	0.05	LTM-ORG-2220	270	-
Endrin	0.05	LTM-ORG-2220	10	-
Heptachlor	0.05	LTM-ORG-2220	6	-
HCB	0.05	LTM-ORG-2220	10	-
Methoxychlor	0.2	LTM-ORG-2220	300	-
Toxaphene	1	LTM-ORG-2220	20	-
BENZENE, TOULENE, ETHYLBENZENE and XYLENES				
Benzene	0.1	Purge Trap-GCMS (USEPA8260)	0.5[6]	-
Toluene	0.1	Purge Trap-GCMS (USEPA8260)	160[6]	-
Ethylbenzene	0.1	Purge Trap-GCMS (USEPA8260)	55[6]	-
Total Xylenes	0.3	Purge Trap-GCMS (USEPA8260)	40[6]	-
TOTAL RECOVERABLE HYDROCARBONS				
F1 C_6-C_{10} [7]	10	TPH Purge Trap-GCMS (USEPA8260)	45[6,]	700[5]
F2 >C_{10}-C_{16}	50	TPH Purge Trap-GCMS (USEPA8260)	110[6]	1000[5]
F3 >C_{16}-C_{34}	100	TPH Purge Trap-GCMS (USEPA8260)	-	2500[5]
F4 >C_{34}-C_{40}	100	TPH Purge Trap-GCMS (USEPA8260)	-	10000[5]
OTHER ORGANICS				
PCB	0.5	LTM-ORG-2220	1	-
ASBESTOS				
Bonded ACM within fill materials	-	PLM / Dispersion Staining (500 mL sample)	0.01% w/w	
Asbestos fines/fibrous asbestos (FA/AF)	-	PLM / Dispersion Staining (500 mL sample)	0.001% w/w	
Surface soils (0-0.1 m)	No visible asbestos			
PFAS				
PFOS/PFHxS	0.000005	LTM-ORG-2100 Per – and Polyfluoroalkyl Substances	0.01	-
PFOA	0.000005	LTM-ORG-2100 Per – and Polyfluoroalkyl Substances	0.1	-

Notes:

1. Guideline values presented are for Chromium (VI) in absence of total Chromium values. Where total Chromium results are elevated, samples will be analysed for Chromium (VI).
2. Guideline values are for inorganic mercury. Where elevated mercury concentrations are encountered and/or site information suggests the potential presence of elemental mercury and/or methyl mercury, consideration of applicability would be needed.
3. Carcinogenic PAHs calculated as per Benzo(a)pyrene Toxicity Equivalent Factor requirements presented in NEPC 2013.
4. Total PAHs calculated as per requirements presented in NEPC 2013.
5. Management Limits are based on coarse grained soil, with F1 and F2 concentrations inclusive of naphthalene and BTEX compounds.

6. Soil Health Screening Levels for Vapour Intrusion: Sand Soils. Values presented are those for 0 to <1 m below ground surface (bgs) for low – high residential land use. Reference should be made to results tables for further detail of levels at greater depths. NL: Non-limiting.
7. Values for F1 C6-C9 are obtained by subtracting BTEX (Sum) from laboratory result for C6-C9 TRH.

Table 6.2 Ecological Screening and Investigation Levels

	Limit of Reporting	Laboratory Method	ESLs Urban Residential and public open space (mg/kg)[1]	EILs (Aged)[3] Urban Residential and public open space (mg/kg)
METALS				
Arsenic	4.0	ICP-AES (USEPA 200.7)	-	100
Cadmium	0.4	ICP-AES (USEPA 200.7)	-	-
Chromium	1.0	ICP-AES (USEPA 200.7)	-	460
Chromium (VI)	1.0	Alkali leach colorimetric (APHA3500-Cr/USEAP3060A)	-	-
Copper	1.0	ICP-AES (USEPA 200.7)	-	100
Nickel	1.0	ICP-AES (USEPA 200.7)	-	35
Lead	1.0	ICP-AES (USEPA 200.7)	-	1100
Zinc	1.0	ICP-AES (USEPA 200.7)	-	460
Mercury (inorganic)	0.1	Cold Vapour ASS (USEPA 7471A)	-	-
POLYCYCLIC AROMATIC HYDROCARBONS				
Benzo(a)pyrene	0.5	GCMS (USEPA8270)	0.7	-
Naphthalene	0.1	GCMS (USEPA8270)	-	170
ORGANOCHLORINE PESTICIDES				
DDT	0.05	LTM-ORG-2220	180	-
BTEX				
Benzene	1.0	Purge Trap-GCMS (USEPA8260)	50	-
Toluene	1.0	Purge Trap-GCMS (USEPA8260)	85	-
Ethylbenzene	1.0	Purge Trap-GCMS (USEPA8260)	70	-
Total Xylenes	3.0	Purge Trap-GCMS (USEPA8260)	105	-
TOTAL RECOVERABLE HYDROCARBONS				
F1 C_6-C_{10}	10	TPH Purge Trap-GCMS (USEPA8260)	180[2]	-
F2 >C_{10}-C_{16}	50	TPH Purge Trap-GCMS (USEPA8260)	120	-
F3 >C_{16}-C_{34}	100	TPH Purge Trap-GCMS (USEPA8260)	300	-
F4 >C_{34}-C_{40}	100	TPH Purge Trap-GCMS (USEPA8260)	2800	-

Notes:
1. ESLs Urban Residential and public open space (mg/kg) coarse grained soils.
2. Values for F1 C6-C9 are obtained by subtracting BTEX (Sum) from laboratory result for C6-C9 TRH.
3. EILs will be derived using site specific data using NEPC 2013 methodology, using the EIL calculator.

Where there were no NSW EPA endorsed thresholds the laboratory LOR was adopted as an initial screening value for the purposes of this assessment.

EILs for some metals were derived using site specific data reported for pH, cation exchange capacity (CEC), and clay content, consistent with NEPC (2013) guidelines.

The results of asbestos analysis were assessed in general accordance with NEPC (2013) including DOH (2009) guidance.

To derive EILs for selected inorganic COPCs, the pH, cation exchange capacity (CEC) and percent clay content for soils at the site were obtained. A total of three samples were collected for analysis from three different portions of the investigation area. For the purposes of deriving appropriate EILs, the average of the three samples was used. Based on this information the following criteria for copper, nickel, chromium and zinc in **Table 6.3** were derived for urban residential and public open space land use scenarios with access to soil using the EIL spreadsheet provided in the NEPC 2013. Additionally, NEPC 2013 provides generic EILs for lead, arsenic, DDT and naphthalene, as shown in **Table A (Appendix A)**.

Table 6.3: Derived EIL criteria for urban residential and public open space land use

pH	CEC (meq/100g)	Clay Content (%)	Cu (mg/kg)	Ni (mg/kg)	Zn (mg/kg)	Cr (mg/kg)
6	5	>10	100	35	210	460

6.3 Groundwater Assessment Criteria Selection

The assessment criteria provided in **Table 6.4** have been adopted from the following guidelines:

- NEPC (2013) criteria for the protection of marine water;
- Primary Contact Recreation (PCR) criteria derived in accordance with NHMRC (2008) and NHMRC (2011, as amended 2017); and
- Vapour intrusion based HSLs provided in the 2013 ASC NEPM.

It is considered that due to the presence of a reticulated water system, the extraction of groundwater for drinking purposes is considered unlikely.

Table 6.4: Groundwater Criteria (all units in mg /L unless otherwise shown)

	Limit of Reporting	Laboratory Method	Recreation Criteria[1]	Aquatic Ecosystem Criteria[2]	Health Screening Levels Residential Sand (NEPC 2013)[3]	Adopted GAC
Metals						
Arsenic (As V)	0.001	ICP-AES (USEPA 200.8)	0.1[6]	0.013[8]	-	0.013
Cadmium	0.001	ICP-AES (USEPA 200.8)	0.02	0.0007	-	0.0007
Chromium (Cr VI)	0.001	ICP-AES (USEPA 200.8)	-	0.0044	-	0.0044
Copper	0.001	ICP-AES (USEPA 200.8)	20	0.0013	-	0.0013
Lead	0.001	ICP-AES (USEPA 200.8)	0.1	0.0044	-	0.0044
Nickel	0.001	ICP-AES (USEPA 200.8)	0.2	0.007	-	0.007
Zinc	0.001	ICP-AES (USEPA 200.8)	-	0.015	-	0.015
Mercury	0.0001	ICP-AES (USEPA 200.8)	0.01	0.00001	-	0.00001
TRH						
F1 C_6-C_{10}	0.2	P&T GC/MS (USEPA 8020A, 8000)	-	-	1	1
F2 >C_{10}-C_{16}	0.05	P&T GC/MS (USEPA 8020A, 8000)	-	-	1	1
BTEX						
Benzene	0.001	P&T GC/MS (USEPA 8020A)	0.01	0.5	0.8	0.001
Toluene	0.001	P&T GC/MS (USEPA 8020A)	8	0.18[5]	NL	0.18
Ethylbenzene	0.001	P&T GC/MS (USEPA 8020A)	3	0.005[5]	NL	0.005
m-Xylene	0.001	P&T GC/MS (USEPA 8020A)	6	0.075[4]	NL	0.075
p-Xylene	0.001	P&T GC/MS (USEPA 8020A)		0.2[4]	NL	0.2
o-Xylene	0.001	P&T GC/MS (USEPA 8020A)		0.35[4]	NL	0.35
PAHs						
Naphthalene	0.0001	GCMS (USEPA8270)	-	0.016	NL	0.016
Fluoranthene	0.0001	GCMS (USEPA8270)	-	0.001	-	0.001
Phenanthrene	0.0001	GCMS (USEPA8270)	-	0.0006	-	0.0006
Benzo(a)pyrene	0.0001	GCMS (USEPA8270)	0.0001	0.00001[4]	-	0.00001

Notes:

[1]. Drinking Water NHMRC (2017) by a factor of 10

[2]. Freshwater criteria adopted where no marine water criteria available

[3]. NEPC (2013) B1 – Table 1A(4) HSL A & B low-high density residential health screening values for vapour intrusion – sandy soils 4-8 m+ as the most representative potential criterion. NL: Non limiting

[4]. Trigger values – protection level for 99 % species

[5]. Low reliability trigger value (ANZECC/ARMCANZ 2000)

[6]. Arsenic in drinking water criteria threshold is based on arsenic (total), not arsenic V.

[8] Freshwater Criteria adopted where no marine water criteria available

7. Quality Assurance / Quality Control

A discussion of the quality control results is discussed in **Appendix I**. It is considered that results of the field and laboratory QA/QC program indicate the data obtained from the sampling and analysis are of suitable quality to achieve the objectives of the investigation.

8. Discussion of Investigation Results

8.1 Soil Observations

Soil encountered at the site during the field works is summarised below. Test pit logs, bore logs and groundwater monitoring well logs are included in **Appendix E**.

The ground surface was predominantly covered in buildings, hardstand or grass. Evidence of filling was observed in the near foreshore areas of the proposed development and on Peat Island. Fill material use on Peat Island consisted of building rubble, concrete, bricks, road base and large sandstone boulders. Fill material used in the foreshore area of Portion 11 (southern portion of the site) generally consisted of large sandstone boulders and possible dredging or beach sands due to the presence of shells. These filling areas were generally associated with reclamation of land.

Fill material identified at other portions of the site generally consisted of silty sand or sandy silt. The fill material identified is likely to have been sourced locally and was potentially reworked natural material. Inclusions within the fill material were generally limited to sandstone gravels with the occasional minor anthropogenic material. Where significant filling has occurred on the mainland (Portion 4 and southern area of Portion 11), the fill material appeared to generally consist of sandstone. It was noted that from historical aerial photographs, these areas appeared to be filled/reclaimed during the construction of the M1 Motorway which was cut into the sandstone during construction. As such, it is considered the sandstone fill material was likely sourced from the cuttings of the sandstone associated with the construction of the M1 Motorway and are not considered to pose a significant environmental risk. Fill material identified at the northern and southern portions of Peat Island (Portion 3)

The underlying natural soil generally consisted of silty sand, clayey and or sand overlying weathered sandstone. The depth to sandstone generally depended on the topography of the site with sandstone generally identified at shallower depth in the highest elevation areas of the site.

Fragments of ACM were observed on the surface of the site at Portion 1 and Portion 3. The ACM fragments appeared to be associated with dilapidated buildings within the near vicinity. During the investigation ACM was observed within fill at one sample location (SS03). Large ACM sheets were observed approximately 0.4m below the surface. Building rubble was also observed within the test pit indicating that a previous site building may have been used as fill material at this location. Test pits completed within the vicinity of SS03 did not identify the presence of ACM.

General rubbish was observed at some locations across the site, however it is considered unlikely that the general rubbish would have chemically impacted the site.

An inspection of the construction material for the causeway between Peat Island (Portion 3) and the Mainland (Portion 2) was completed. The material appeared to be predominantly sandstone. It is understood that the causeway was originally constructed circa 1900's and completed circa 1957. On the basis of the sandstone material observed, it was considered that the causeway was unlikely to present a significant risk and investigation of the causeway was not required.

Field works completed on Peat Island (Portion 3) where the USTs were previously indicated did not identify any evidence of USTs at these locations, which was considered consistent with the results of the GPR survey and site observations.

Selected locations were assessed within the field for the presence of acid sulfate soils or potential acid sulfate soils (ASS/PASS). The results of the field screening indicated that PASS may occur below the depth of groundwater in the northern and southern areas of Peat Island, however due to the collapsing material, representative samples could not be collected for laboratory analysis.

8.2 Soil Analytical Results

The soil sampling locations are shown in **Figure 3** and summarised laboratory results and assessment criteria are presented in **Table A** (**Appendix A**). The soil analytical results are discussed in the following sections.

8.2.1 Heavy Metals

8.2.1.1 Portion 1

Heavy metals were reported either below the laboratory LOR or the adopted site criteria (human health and ecological) in all samples selected for analysis.

8.2.1.2 Portion 2

Heavy metals were generally reported either below the laboratory LOR or the adopted site criteria (human health and ecological) in samples selected for analysis. Sample SS15 0-0.1 located within the surface soil identified a lead concentration of 380mg/kg, above the HSL of 300mg/kg for a residential land use. In addition, sample SS15 0-0.1 identified a zinc concentration of 260mg/kg above the EIL of 210mg/kg.

8.2.1.3 Portion 3

Heavy metals were reported either below the laboratory LOR or the adopted site criteria in all samples selected for analysis, with the exception of exceedances of ecological criteria by nickel (SS02 0-0.1 and SS02 0.5-0.6) and zinc (SS07 0-0.1 and SS30 0-0.1).

8.2.1.4 Portions 4 to 7

Heavy metals were reported either below the laboratory LOR or the adopted site criteria (human health and ecological) in all samples selected for analysis.

8.2.1.5 Portion 8

Heavy metals were reported either below the laboratory LOR or the adopted site criteria in all samples selected for analysis except one sample (SS64 0-0.1) with a nickel concentration of 36mg/kg marginally above the adopted ecological criteria of 35mg/kg.

8.2.1.6 Portion 9

Heavy metals were reported either below the laboratory LOR or the adopted site criteria in all samples selected for analysis, except as follows. One sample (SS44 0-0.1) identified a zinc concentration of 450mg/kg above the adopted ecological criteria of 210mg/kg.

8.2.1.7 Portion 10

Heavy metals were reported either below the laboratory LOR or the adopted site criteria (human health and ecological) in all samples selected for analysis.

8.2.1.8 Portion 11

Heavy metals were reported either below the laboratory LOR or the adopted site criteria (human health and ecological) in all samples selected for analysis.

8.2.1.9 Portion 12

Heavy metals were generally reported either below the laboratory LOR or the adopted site criteria in all samples selected for analysis, except as follows. A lead concentration of 530mg/kg was identified within sample SS50 0-0.1 above the adopted HSL of 300mg/kg. All reported concentrations were below the adopted ecological criteria.

8.2.1.10 Portion 13

Heavy metals were reported either below the laboratory LOR or the adopted site criteria (human health and ecological) in all samples selected for analysis.

8.2.1.11 Heavy Metal Statistical Analysis

Lead was identified within two samples above the adopted HSL, although no single lead concentration was reported above 250% of the adopted investigation level. A statistical assessment of the lead data was completed by the calculation of the 95% upper confidence limit of the mean concentration (95% UCL). The standard deviation of the lead samples was reported as 81.16. The 95% UCL was then compared to the adopted site criterion, i.e. residential land use.

The results of the statistical assessment identified that the 95% UCL value was 88.4mg/kg which is below the adopted lead HSL of 300mg/kg.

This approach is considered appropriate based on the scale of the redevelopment and the likely scope of the bulk earthworks to obtain development levels.

It is also noted that two samples exceeded the initial screening criteria for a residential land use, however, the two locations (SS15 and SS50) are within areas proposed to be used for open space and commercial/industrial respectively. Considering the locations of the samples, the proposed use of these areas and the statistical assessment of the site overall, the reported lead concentrations are not considered to pose a significant risk to the proposed development as provided in **Appendix B**.

8.2.2 Petroleum Hydrocarbons (TRH and BTEX)

Petroleum hydrocarbon concentrations were all reported below the laboratory LOR and the adopted site criteria in all samples selected for analysis.

8.2.3 PAHs

PAHs including carcinogenic PAHs (as benzo(a)pyrene TEQ), benzo(a)pyrene and naphthalene were reported below the laboratory LOR and the adopted site criteria in all samples selected for analysis, except for sample SS47 0-0.1 (located in Portion 9) with a benzo(a)pyrene concentration of 1.2mg/kg marginally above the EIL of 0.7mg/kg. It should be noted that NEPC 2013indicates that some PAHs including BaP are not readily available for plant uptake.

8.2.4 PCBs

PCBs were all reported below the laboratory LOR and the adopted site criteria in all samples selected for analysis.

8.2.5 OCPs

PCBs were all reported below the laboratory LOR and the adopted site criteria in all samples selected for analysis.

8.2.6 PFAS

All PFAS concentrations were below the laboratory LOR and the adopted site criteria for all samples submitted for analysis.

8.2.7 Asbestos

Fragments of ACM were observed on the site surface within Portion 1 and Portion 3 associated with adjacent buildings.

The fragments identified within Portion 1 appeared to be limited to a small area (approximately 5m^2) and were associated with broken eaves from the former residence building. It was estimated that fragments consisted of a total of 2m^2.

Buried asbestos cement sheets were identified at location SS03 (northern part of Portion 3) at approximately 0.4 to 0.6m bgs. Due to the presence of building rubble within the test pit, it is believed that the ACM was associated with the historical use of an onsite building as fill material. Numerous ACM fragments were identified within the test pit and generally consisted of fragments approximately 10cm^2.

Soil samples were collected across the site to assess the presence of asbestos fibres. One sample (SS03 0-5-0.6) which was associated with visual ACM as stated above, identified the presence of asbestos fibres within the soil sample. The asbestos fibres were reported above the adopted site criteria. All other samples analysed did not identify asbestos fibres above the laboratory LOR or adopted criteria.

8.3 Groundwater Observations

Three previously installed groundwater monitoring wells and five additional groundwater monitoring wells were sampled for this investigation. The location of the groundwater wells was considered appropriate to assess the groundwater for the COCs generally associated with or suspected underground infrastructure. It was noted that the groundwater was generally fresh within the exception of MW04 and MW05 located on Peat Island which were saline. The wells were slightly reducing to oxidising. A summary of the groundwater field parameter is provided in **Table 8.1**.

Table 8.1. Groundwater Field Parameters

	DO (ppm)	Temp (°C)	pH (units)	EC (µS/cm)	ORP (mV)	Comment
MW01	3.0	21.6	3.90	448	122	Turbid
MW02	0.26	21.2	4.05	415	42	Clear
MW03	0.59	19.0	3.54	398	126	Clear
GW01	1.28	19.7	5.58	760	-29	Clear
GW02	4.7	17.8	4.10	269	93	Slightly turbid
GW03	2.97	20.0	4.87	606	17.3	Slightly turbid
GW04	1.85	17.8	5.33	30869	-33	Clear
GW05	1.17	17.5	5.38	38491	-17	Turbid

The SWL reported at the four groundwater wells sampled at the former service station was reported above the screen interval. During the installation of groundwater well MW03, it was noted that the groundwater strike was approximately 7m bgs. This was also reported on the three previously installed well logs. Considering this, it is considered that the screen intervals of the groundwater wells are appropriate to identify LNAPL and dissolved phase TRH potential present on or in the groundwater. Considering the measured depth to the SWL compared to the groundwater strike, the groundwater is considered to be semi-confined.

It is considered the screening depths of all groundwater wells at the site are appropriate to assess the COCs within groundwater and are acceptable for this investigation.

8.4 Groundwater Analytical Results

The groundwater monitoring well locations are shown in **Figure 3** and summarised laboratory results and assessment criteria are presented in **Table B** (**Appendix A**). The groundwater analytical results are discussed in the following sections.

8.4.1 Heavy Metals

Concentrations of copper (all samples), lead (MW_02), nickel (GW_01, GW_02, GW_03, GW_04 and MW_02) and zinc (all samples) were identified above the adopted ecological criteria. All other heavy metal concentrations were below the adopted ecological and primary contract recreational criteria.

As the heavy metal concentrations (excluding the lead concentration at MW_02) were generally consistent between all groundwater monitoring wells (which were located at various locations

across the site), and there were no widespread sources of these metals in soil identified by the investigation, it is considered that the elevated copper, nickel and zinc concentrations are consistent with background concentrations, and not a result of any specific contaminating activities at the site. Further evidence of this is that concentrations of copper, nickel and zinc within groundwater wells collected from Portion 7 (which field parameters indicate is freshwater) and concentrations collected from Peat Island (which field parameters indicate is saline water) were generally consistent indicating that the heavy metals concentrations are likely associated with the underlying geology rather than associated with specific source locations at the site.

8.4.2 Petroleum Hydrocarbons

Petroleum hydrocarbon concentrations were all reported below the laboratory LOR and the adopted site criteria in all samples selected for analysis.

8.4.3 PAHs

PAHs were all reported below the laboratory LOR and the adopted site criteria in all samples selected for analysis.

8.4.4 Volatile Organic Compounds

Volatile organic compounds (VOCs) were all reported below the laboratory LOR and the adopted site criteria in all samples selected for analysis.

9. Site Characterisation

Based on the decision-making process for assessing urban redevelopment sites detailed in NSW EPA (2017) and discussed in **Section 5.1.2**, the decisions required to be made are discussed below.

9.1 Potential Risks to Future Onsite Receptors

COPC concentrations for the site were generally below the adopted health based site criteria. The presence of ACM in bonded and friable form within the soil at one location exceeded the adopted health-based HSL criterion. In addition, ACM identified on the surface soils within Portion 1 and Portion 3 present a potential risk to human health.

Lead concentrations reported across the site are not considered to be statistically significant to human health and as such, is not considered to require remediation and/or management.

Nickel and zinc in a small number of samples were identified above the adopted ecological criteria. While no vegetation was observed to be under stress due to the presence of nickel and zinc, these concentrations may require to be remediated and/or managed during construction works to minimise future potential risk to ecological receptors.

While no soil or groundwater impact was identified directly associated with the underground storage tanks (USTs), the USTs will require removal and validation prior to the development of the site.

The results of the groundwater assessment did not identify any potential risk to the site users, provided that the extraction of the groundwater does not occur for drinking or primary contact recreation purposes.

9.2 Background Soil Concentrations

All samples collected from the natural soils were below the adopted site assessment criteria or the laboratory LOR, and consistent with published background concentrations reported by NEPC 2013.

9.3 Chemical Mixtures

There were no potential chemical mixtures identified during the investigation that may pose a contamination issue at the site.

9.4 Aesthetic Issues

No odours were identified at the site surface that may pose an aesthetic issue at the site.

Fragments of ACM were identified on the surface within Portion 1 and Portion 3. In addition, ACM was also observed within one test pit (northern portion of Portion 3) associated with the presence of fill material. These present an aesthetic risk to the proposed development which requires management and/or remediation.

9.5 Potential Migration of Contaminants

There is low potential for contaminants to migrate from the site based on the absence of significant contamination identified at the site. As the majority of the site was sealed or covered in grass, it is considered that migration through wind generated dust would be low. While some elevated heavy metals were identified within the groundwater, it is considered that the concentrations are likely background and do not present an increased risk via groundwater migration.

9.6 Site Management Strategy

Based on the current investigation, there are potential human health and ecological risks relating to typically isolated and minor soil contamination at the site requiring management prior or during redevelopment works.

It is considered that the ACM impacts on the ground and in surface soils will require remediation prior to use of the site for the proposed development. In addition, the presence of friable asbestos and ACM within the northern part of Portion 3 will require remediation and/or management. An Asbestos Management Plan should be prepared to include all asbestos present at the site.

Prior to the redevelopment of the site, the USTs identified should be removed and validated to ensure no potential risks to the proposed development.

10. Conclusions and Recommendations

Based on the findings of this investigation and subject to the limitations in **Section 11**, the following conclusions are made:

- The site can be readily made suitable for the proposed land use, subject to removal and validation of the USTs and remediation and/or management of the surficial ACM, buried asbestos and heavy metals identified above the ecological criteria.

The following recommendations are made:

- Prior to the demolition of the structures at the site, a destructive hazardous materials survey should be completed to ensure all hazardous materials are identified and appropriately managed prior to demolition to prevent soil impact during demolition works;
- Due to the presence of asbestos fines and ACM at the site, an Asbestos Management Plan is required to manage the presence of asbestos at the site prior to remediation/development;
- As per the *Protection of the Environment Operations (Underground Petroleum Storage System) Regulations 2019*, as the USTs are currently not in use, the USTs should be removed and the tank excavation appropriately validated;
- Following the approval of the proposed development plans, a remediation action plan (RAP) should be prepared for the removal of the USTs, ASTs and any remediation works associated with asbestos (if required) associated with the proposed land uses; and
- Prior to the redevelopment of the site, an Unexpected Finds Protocol should be prepared. This should include the potential for additional COCs to be identified including ACM and the potential for the USTs to be present on Peat Island.

11. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief and nominated Site Auditor only and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquiries.

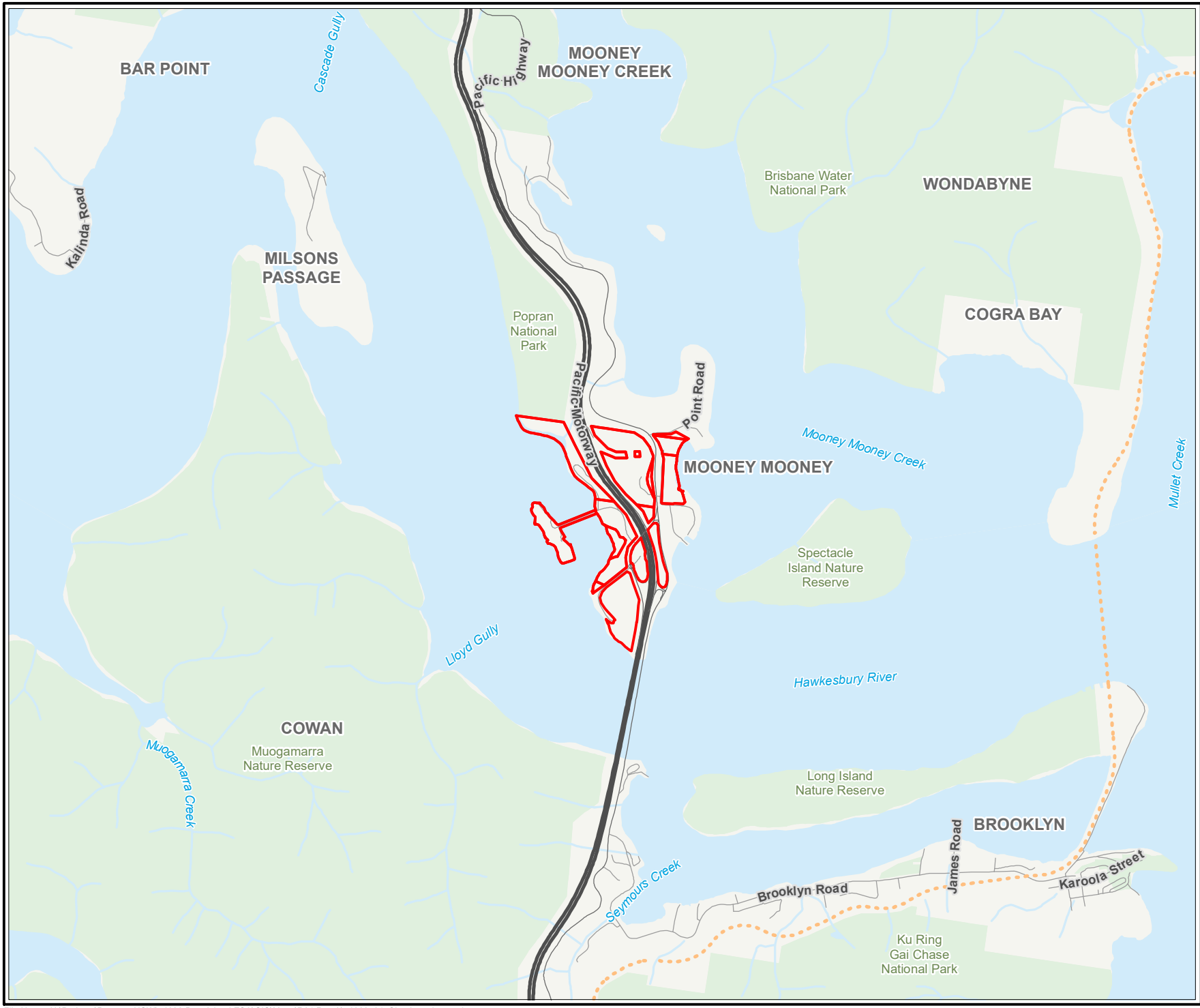
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Figures



Legend:

- Site Boundary
- Parks and reserves
- Waterbody area
- Waterway
- Train Line
- Motorway
- PrimaryRoad
- LocalRoad

JBS&G

Job No: 54933	
Client: Property NSW	
Version: R02	Date 18/10/2018
Drawn By: FH	Checked By: SB

Scale 1:30,000

0 500 1,000
metres

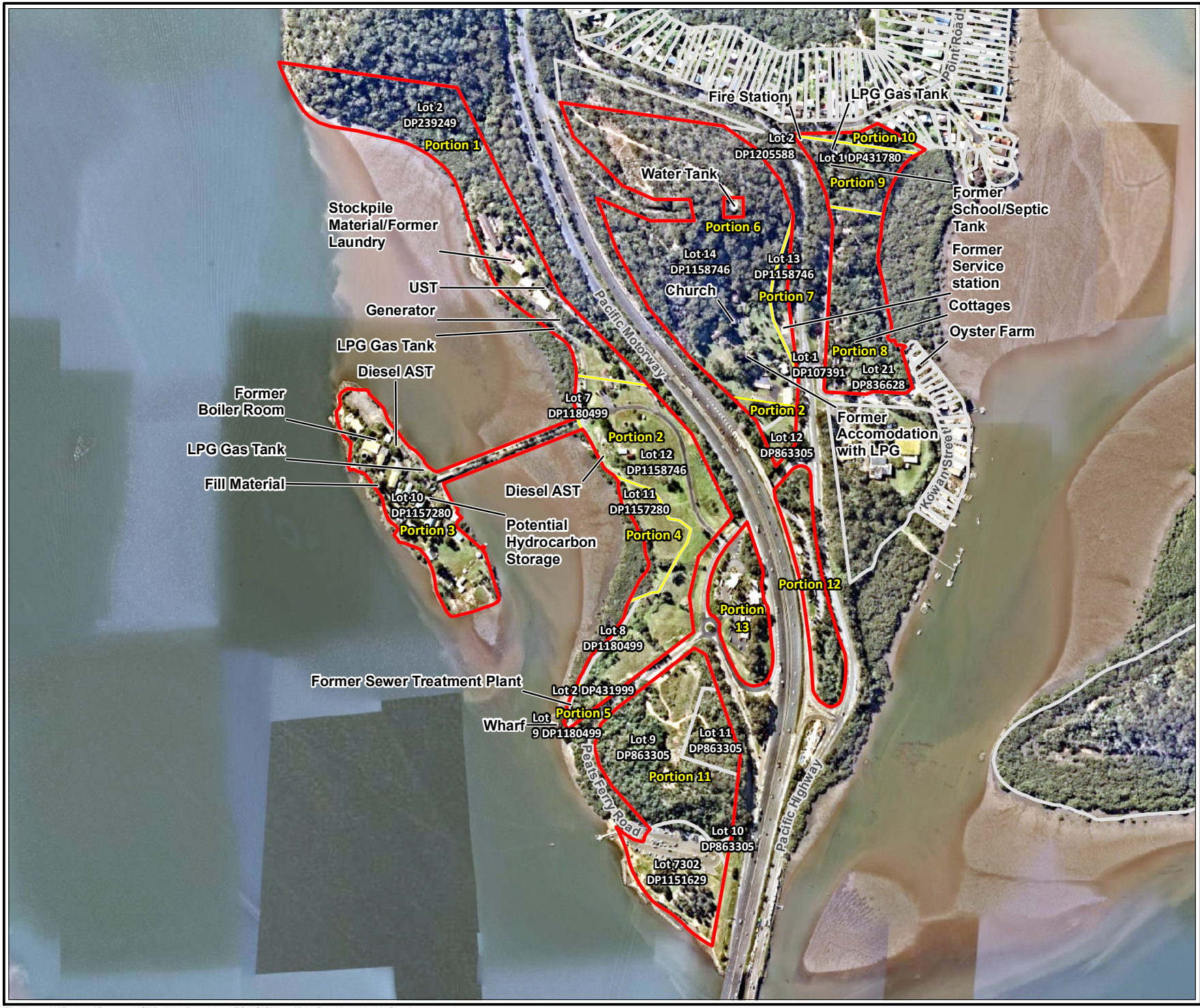
Coord. Sys. GDA 1994 MGA Zone 56

Peat Island
Mooney Mooney, NSW

SITE LOCATION

FIGURE 1

File Name: N:\Projects\Property NSW\54933 Peat Island ESA\GIS\Maps\R01 Rev A\54933_01_Site_Location.mxd
Reference: SIXmaps



Legend:

- Site Boundary
- Portion Boundary

JBS&G

Job No: 54933	
Client: Property NSW	
Version: R02	Date 30/10/2018
Drawn By: FH	Checked By: SB
Scale 1:8,000	

0 100 200
metres

Coord. Sys. GDA 1994 MGA Zone 56

Peat Island
Mooney Mooney, NSW

SITE LAYOUT

FIGURE 2

File Name: N:\Projects\Property NSW\54933 Peat Island ESA\GIS\Maps\R02 Rev A\54933_02_Site_Layout.mxd
Reference: Nearmap Imagery - 12/04/2018

Legend:

- Site Boundary
- Portion Boundary
- Cadastral Boundary
- Ground Water Monitoring Well
- Shallow Soil Sample

JBS&G

Job No: 54933	
Client: Property NSW	
Version: R02	Date 30/10/2018
Drawn By: FH	Checked By: SB
Scale 1:3,000	

0 30 60
metres

Coord. Sys. GDA 1994 MGA Zone 56

Peat Island
Mooney Mooney, NSW

SAMPLING LOCATIONS

FIGURE 3A

File Name: N:\Projects\Property NSW\54933 Peat Island ESA\GIS\Maps\R02 Rev A\54933_03_DDP_Sampling_Locations.mxd
Reference: Nearmap Imagery - 12/04/2018

Legend:

- Site Boundary
- Portion Boundary
- Cadastral Boundary
- Ground Water Monitoring Well
- Shallow Soil Sample

JBS&G

Job No: 54933	
Client: Property NSW	
Version: R02	Date 30/10/2018
Drawn By: FH	Checked By: SB
Scale 1:2,200	

0 25 50
metres

Coord. Sys. GDA 1994 MGA Zone 56

Peat Island
Mooney Mooney, NSW

SAMPLING LOCATIONS

FIGURE 3B

File Name: N:\Projects\Property NSW\54933 Peat Island ESA\GIS\Maps\R02 Rev A\54933_03_DDP_Sampling_Locations.mxd
Reference: Nearmap Imagery - 12/04/2018

Legend:

- Site Boundary
- Portion Boundary
- Cadastral Boundary
- Ground Water Monitoring Well
- Shallow Soil Sample

JBS&G

Job No: 54933	
Client: Property NSW	
Version: R02	Date 30/10/2018
Drawn By: FH	Checked By: SB
Scale 1:3,200	

0 30 60
metres

Coord. Sys. GDA 1994 MGA Zone 56

Peat Island
Mooney Mooney, NSW

SAMPLING LOCATIONS

FIGURE 3C

File Name: N:\Projects\Property NSW\54933 Peat Island ESA\GIS\Maps\R02 Rev A\54933_03_DDP_Sampling_Locations.mxd
Reference: Nearmap Imagery - 12/04/2018

Legend:

- Site Boundary
- Portion Boundary
- Cadastral Boundary
- Shallow Soil Sample

JBS&G

Job No: 54933	
Client: Property NSW	
Version: R02	Date 30/10/2018
Drawn By: FH	Checked By: SB
Scale 1:2,500	

0 30 60
metres

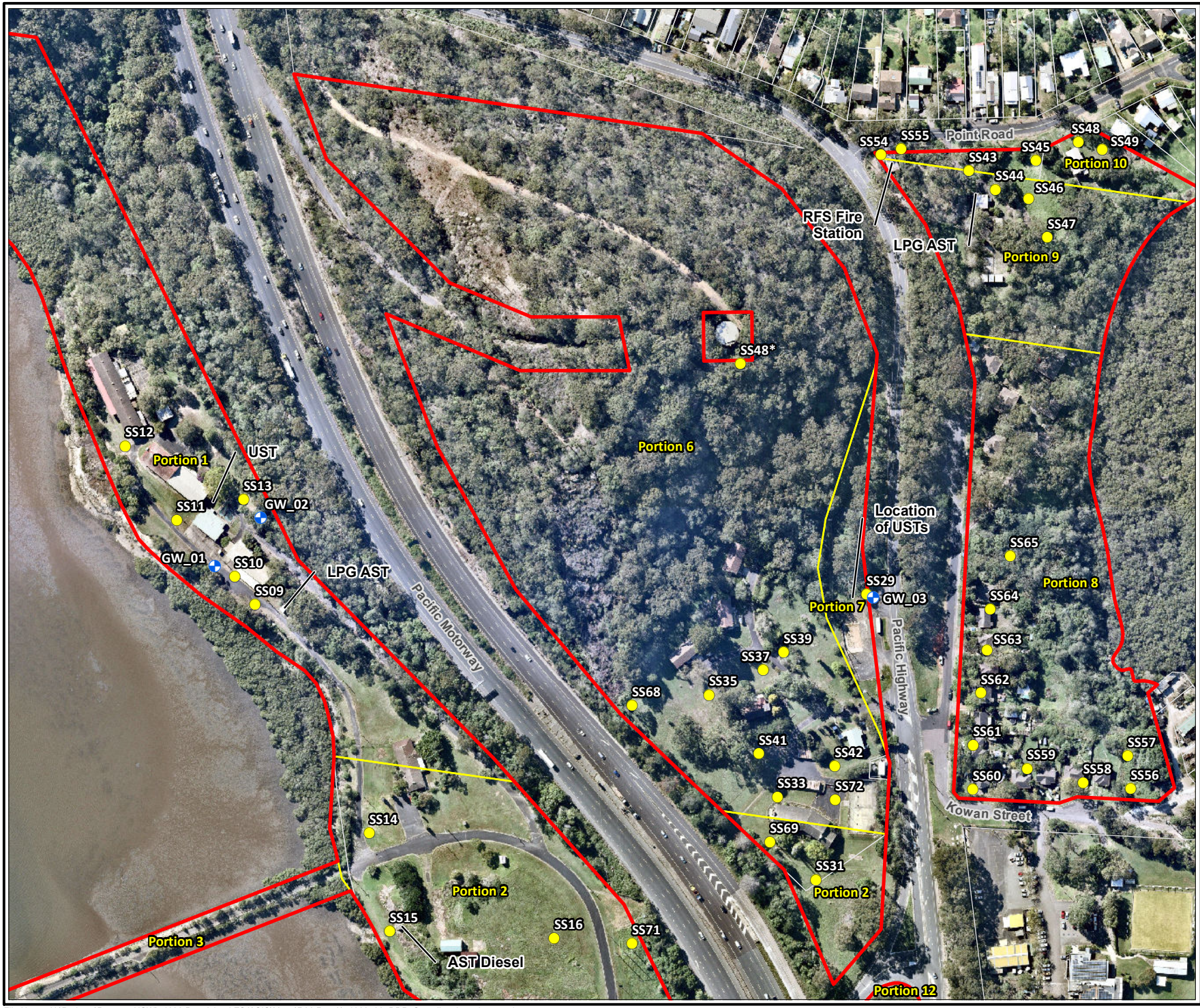
Coord. Sys. GDA 1994 MGA Zone 56

Peat Island
Mooney Mooney, NSW

SAMPLING LOCATIONS

FIGURE 3D

File Name: N:\Projects\Property NSW\54933 Peat Island ESA\GIS\Maps\R02 Rev A\54933_03_DDP_Sampling_Locations.mxd
Reference: Nearmap Imagery - 12/04/2018



Legend:

- Site Boundary
- Portion Boundary
- Cadastral Boundary
- Ground Water Monitoring Well
- Shallow Soil Sample

JBS&G

Job No: 54933	
Client: Property NSW	
Version: R02	Date 30/10/2018
Drawn By: FH	Checked By: SB
Scale 1:3,200	

0 30 60
metres

Coord. Sys. GDA 1994 MGA Zone 56

Peat Island
Mooney Mooney, NSW

SAMPLING LOCATIONS

FIGURE 3E

File Name: N:\Projects\Property NSW\54933 Peat Island ESA\GIS\Maps\R02 Rev A\54933_03_DDP_Sampling_Locations.mxd
Reference: Nearmap Imagery - 12/04/2018

Legend:

- Site Boundary
- Portion Boundary
- Cadastral Boundary
- Ground Water Monitoring Well
- Shallow Soil Sample

JBS&G

Job No: 54933	
Client: Property NSW	
Version: R02	Date 30/10/2018
Drawn By: FH	Checked By: SB
Scale 1:2,500	

0 30 60
metres

Coord. Sys. GDA 1994 MGA Zone 56

Peat Island
Mooney Mooney, NSW

SAMPLING LOCATIONS

FIGURE 3F

File Name: N:\Projects\Property NSW\54933 Peat Island ESA\GIS\Maps\R02 Rev A\54933_03_DDP_Sampling_Locations.mxd
Reference: Nearmap Imagery - 12/04/2018

Legend:

- Site Boundary
- Portion Boundary
- Cadastral Boundary
- Shallow Soil Sample

JBS&G

Job No: 54933	
Client: Property NSW	
Version: R02	Date 30/10/2018
Drawn By: FH	Checked By: SB
Scale 1:2,200	

0 25 50
metres

Coord. Sys. GDA 1994 MGA Zone 56

Peat Island
Mooney Mooney, NSW

SAMPLING LOCATIONS

FIGURE 3G

File Name: N:\Projects\Property NSW\54933 Peat Island ESA\GIS\Maps\R02 Rev A\54933_03_DDP_Sampling_Locations.mxd
Reference: Nearmap Imagery - 12/04/2018

Legend:

- Site Boundary
- Portion Boundary
- Cadastral Boundary
- Ground Water Monitoring Well
- Shallow Soil Sample
- Decommissioned UST (Concrete)
- Former Building
- UST Location

Previous Sampling Locations (Greencap)

- Bore Hole
- Monitoring Well
- Test Pit
- UST Fill Points

JBS&G

Job No: 54933	
Client: Property NSW	
Version: R02	Date 19/10/2018
Drawn By: FH	Checked By: SB
Scale 1:300	

0 5 10
metres

Coord. Sys. GDA 1994 MGA Zone 56

Peat Island
Mooney Mooney, NSW

FORMER SERVICE STATION LAYOUT

FIGURE 4

File Name: N:\Projects\Property NSW\54933 Peat Island ESA\GIS\Maps\R02 Rev A\54933_04_Former_Service_Station_Layout.mxd
Reference: Nearmap Imagery - 12/04/2018

SAMPLE ID	Depth (m)	CONTAMINANT	CONCENTRATION (%w/w)	CRITERIA
SS03	0.5-0.6	Asbestos	0.03%	AF/FA HSL

SAMPLE ID	Depth (m)	CONTAMINANT	CONCENTRATION (mg/kg)	CRITERIA
SS02	0-0.1	Nickel	45	EIL
	0.5-0.6	Nickel	0.15	EIL

SAMPLE ID	Depth (m)	CONTAMINANT	CONCENTRATION (mg/kg)	CRITERIA
SS07	0-0.1	Zinc	600	EIL

SAMPLE ID	Depth (m)	CONTAMINANT	CONCENTRATION (mg/kg)	CRITERIA
SS30	0-0.1	Zinc	520	EIL

SAMPLE ID	CONTAMINANT	CONCENTRATION (mg/L)	CRITERIA
GW04	Copper	0.021	GIL
	Nickel	0.007	GIL
	Zinc	0.7	GIL

SAMPLE ID	CONTAMINANT	CONCENTRATION (mg/L)	CRITERIA
GW05	Copper	0.004	GIL
	Zinc	0.056	GIL

Legend:

- Site Boundary
- Portion Boundary
- Cadastral Boundary
- Ground Water Monitoring Well
- Shallow Soil Sample

JBS&G

Job No: 54933

Client: Property NSW

Version: R02 | Date 30/10/2018

Drawn By: FH | Checked By: SB

Scale 1:2,000

0 20 40
metres

Coord. Sys. GDA 1994 MGA Zone 56

Peat Island
Mooney Mooney, NSW

EXCEEDANCES

FIGURE 5A

File Name: N:\Projects\Property NSW\54933 Peat Island ESA\GIS\Maps\R02 Rev A\54933_05A_Exceedances.mxd
Reference: Nearmap Imagery - 12/04/2018

SAMPLE ID	CONTAMINANT	CONCENTRATION (mg/L)	CRITERIA
GW02	Copper	0.013	GIL
	Nickel	0.016	GIL
	Zinc	0.11	GIL

SAMPLE ID	CONTAMINANT	CONCENTRATION (mg/L)	CRITERIA
GW01	Copper	0.012	GIL
	Nickel	0.012	GIL
	Zinc	0.22	GIL

Legend:

- Site Boundary
- Portion Boundary
- Cadastral Boundary
- Ground Water Monitoring Well
- Shallow Soil Sample

JBS&G

Job No: 54933

Client: Property NSW

Version: R02 | Date 30/10/2018

Drawn By: FH | Checked By: SB

Scale 1:1,000

0 10 20
metres

Coord. Sys. GDA 1994 MGA Zone 56

Peat Island
Mooney Mooney, NSW

EXCEEDANCES

FIGURE 5B

File Name: N:\Projects\Property NSW\54933 Peat Island ESA\GIS\Maps\R02 Rev A\54933_05B_Exceedances.mxd
Reference: Nearmap Imagery - 12/04/2018

SAMPLE ID	Depth (m)	CONTAMINANT	CONCENTRATION (mg/kg)	CRITERIA
SS18	0-0.1	Lead	380	HIL
	0-0.1	Zinc	260	EIL

Legend:

- Site Boundary
- Portion Boundary
- Cadastral Boundary
- Shallow Soil Sample

JBS&G

Job No: 54933

Client: Property NSW

Version: R02 | Date 18/10/2018

Drawn By: FH | Checked By: SB

Scale 1:1,000

0 10 20

metres

Coord. Sys. GDA 1994 MGA Zone 56

Peat Island
Mooney Mooney, NSW

EXCEEDANCES

FIGURE 5C

File Name: N:\Projects\Property NSW\54933 Peat Island ESA\GIS\Maps\R01 Rev A\54933_05C_Exceedances.mxd
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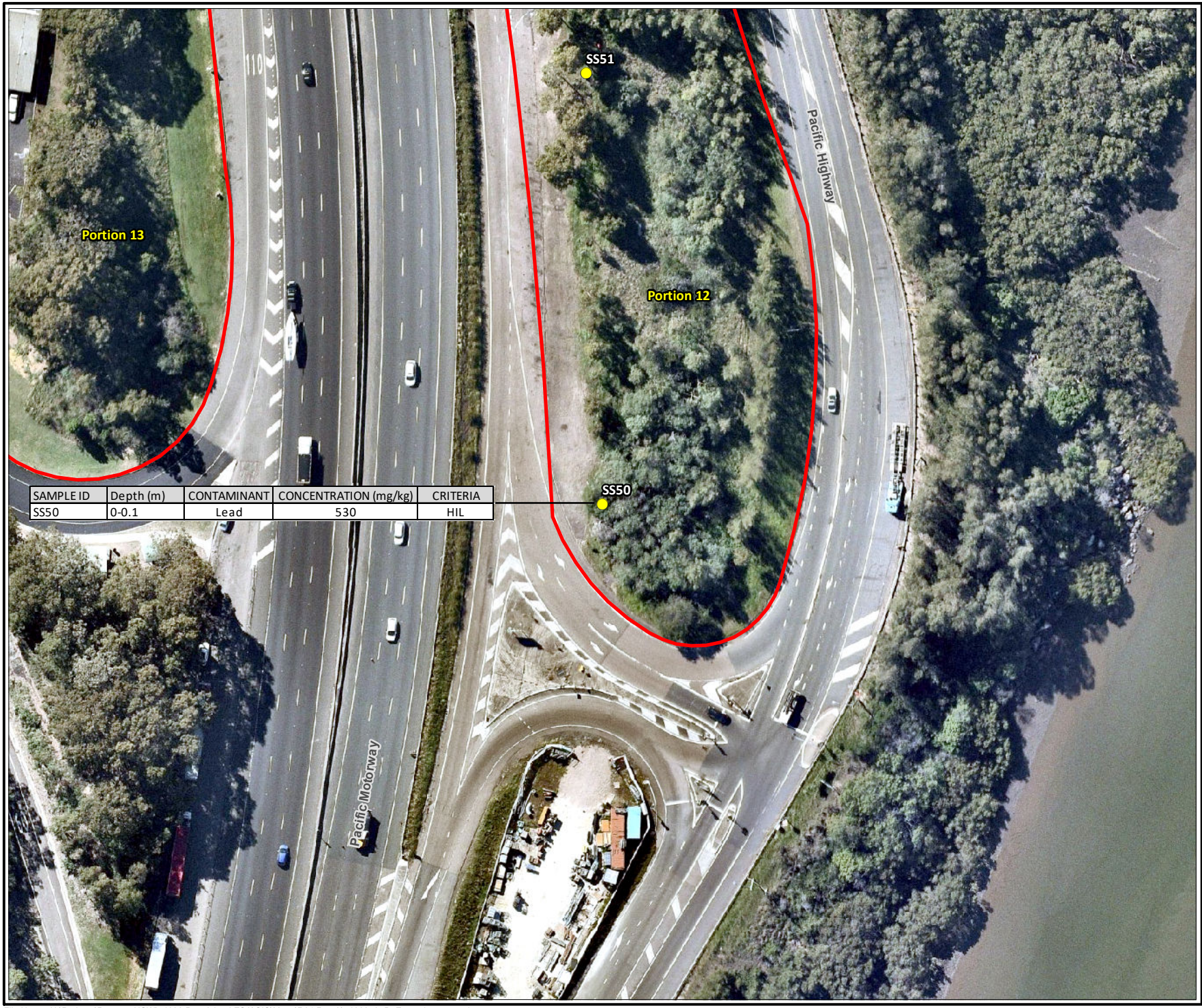


SAMPLE ID	Depth (m)	CONTAMINANT	CONCENTRATION (mg/kg)	CRITERIA
SS50	0-0.1	Lead	530	HIL

Legend:

- Site Boundary
- Shallow Soil Sample

JBS&G

Job No: 54933

Client: Property NSW

Version: R02 | Date 18/10/2018

Drawn By: FH | Checked By: SB

Scale 1:1,000

0 10 20

metres

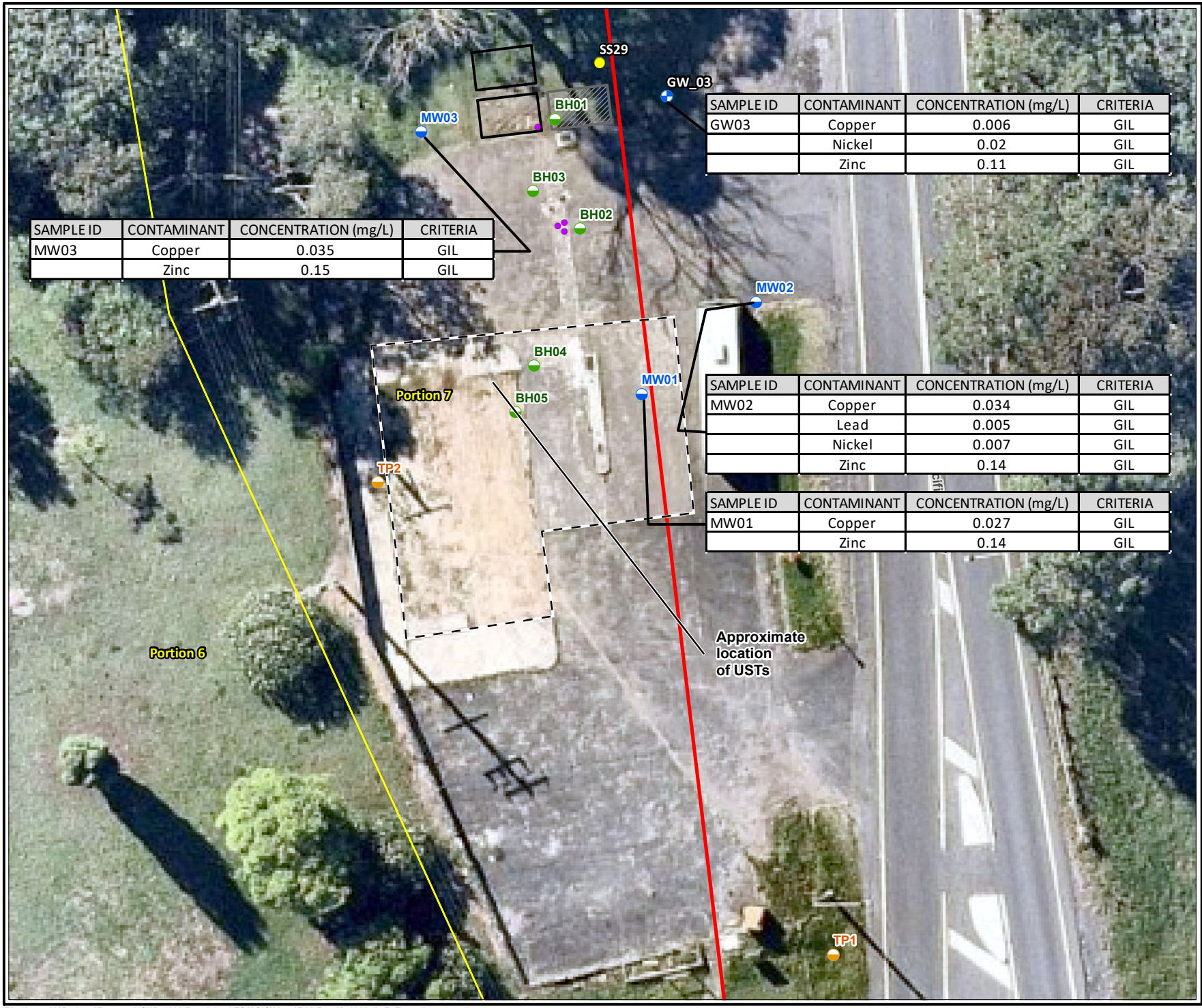
Coord. Sys. GDA 1994 MGA Zone 56

Peat Island
Mooney Mooney, NSW

EXCEEDANCES

FIGURE 5D

File Name: N:\Projects\Property NSW\54933 Peat Island ESA\GIS\Maps\R01 Rev A\54933_05D_Exceedances.mxd
Reference: Nearmap Imagery - 12/04/2018



SAMPLE ID	CONTAMINANT	CONCENTRATION (mg/L)	CRITERIA
GW03	Copper	0.006	GIL
	Nickel	0.02	GIL
	Zinc	0.11	GIL

SAMPLE ID	CONTAMINANT	CONCENTRATION (mg/L)	CRITERIA
MW03	Copper	0.035	GIL
	Zinc	0.15	GIL

SAMPLE ID	CONTAMINANT	CONCENTRATION (mg/L)	CRITERIA
MW02	Copper	0.034	GIL
	Lead	0.005	GIL
	Nickel	0.007	GIL
	Zinc	0.14	GIL

SAMPLE ID	CONTAMINANT	CONCENTRATION (mg/L)	CRITERIA
MW01	Copper	0.027	GIL
	Zinc	0.14	GIL

Legend:

- Site Boundary
- Portion Boundary
- Cadastral Boundary
- Decommissioned UST (Concrete)
- Former Building
- Approximate UST Location
- Ground Water Monitoring Well
- Shallow Soil Sample

Previous Sampling Locations (Greencap)

- Bore Hole
- Monitoring Well
- Test Pit
- UST Fill Points

JBS&G

Job No: 54933

Client: Property NSW

Version: R02 | Date 19/10/2018

Drawn By: FH | Checked By: SB

Scale 1:300

0 5 10
metres

Coord. Sys. GDA 1994 MGA Zone 56

Peat Island
Mooney Mooney, NSW

EXCEEDANCES

FIGURE 5F

File Name: N:\Projects\Property NSW\54933 Peat Island ESA\GIS\Maps\R02 Rev A\54933_05F_Exceedances.mxd
Reference: Nearmap Imagery - 12/04/2018

Appendix A Summary Tables

Table A: Soil Analytical Results
Project Number: 54933
Project Name: Peat Island ESA

						Metals & Metalloids											
						Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Molybdenum	Nickel	Selenium (Total)	Silver	Tin (Inorganic, Sn IV)	Zinc
						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						2.00	0.40	1.00	1.00	1.00	0.10	5.00	1.00	2.00	0.20	10.00	1.00
NEPC 2013 EIL, EILs Aged Sediment - Urban Residential/Public Open Space						100		460	100	1100			35				210
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																	
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A																	
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																	
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																	
NEPM 2013 Soil HIL A						100	20	100	6000	300	40		400	200			7400
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m																	
Field_ID	LocCode	Sample_Depth_Range	Sampled_Date-Time	Location	Lab_Report_Number												
GW01_0.0-0.1	GW01	0-0.1	19/09/2018	Portion 1	619071	<2	<0.4	16	18	7.6	<0.1	-	27	-	-	-	19
GW02_0.0-0.1	GW02	0-0.1	19/09/2018	Portion 1	619071	<2	<0.4	7.9	<5	9.9	<0.1	-	<5	-	-	-	6.3
SS09 0-0.1	SS09	0-0.1	18/09/2018	Portion 1	618500	<2	<0.4	11	<5	10	<0.1	-	<5	-	-	-	<5
SS10 0-0.1	SS10	0-0.1	18/09/2018	Portion 1	618500	<2	<0.4	8.7	<5	10	<0.1	-	<5	-	-	-	8.2
SS11 0-0.1	SS11	0-0.1	18/09/2018	Portion 1	618500	<2	<0.4	10	<5	10	<0.1	-	<5	-	-	-	<5
SS12 0-0.1	SS12	0-0.1	18/09/2018	Portion 1	618500	<2	<0.4	6.5	9.1	14	<0.1	-	8.3	-	-	-	13
SS13 0-0.1	SS13	0-0.1	18/09/2018	Portion 1	620797	4.1	<0.4	15	<5	13	<0.1	-	<5	-	-	-	<5
SS_69_0.0-0.1	SS69	0.0-0.1	28/09/2018	Portion 2	620448	-	-	-	-	-	-	-	-	-	-	-	-
SS_71_0.0-0.1	SS71	0.0-0.1	28/09/2018	Portion 2	620448	-	-	-	-	-	-	-	-	-	-	-	-
SS14 0-0.1	SS14	0-0.1	18/09/2018	Portion 2	618500	3.2	<0.4	79	<5	19	<0.1	-	<5	-	-	-	8.4
SS15 0-0.1	SS15	0-0.1	18/09/2018	Portion 2	618500	2.8	<0.4	12	22	380	<0.1	-	11	-	-	-	260
SS16 0-0.1	SS16	0-0.1	18/09/2018	Portion 2	618500	<2	<0.4	6.5	<5	22	<0.1	-	<5	-	-	-	21
SS16 0-0.1	SS16	0-0.1	18/09/2018	Portion 2	620797	-	-	-	-	-	-	-	-	-	-	-	-
SS-18_0-0.1	SS-18	0-0.1	19/09/2018	Portion 2	619070	3.5	<0.4	17	<5	10	<0.1	<5	<5	<2	<0.2	<10	<5
SS-19_0-0.1	SS-19	0-0.1	19/09/2018	Portion 2	619070	<2	<0.4	7.3	<5	20	<0.1	<5	<5	<2	<0.2	<10	<5
SS-23_0-0.1	SS-23	0-0.1	19/09/2018	Portion 2	619070	<2	<0.4	<5	<5	6.7	<0.1	<5	<5	<2	<0.2	<10	<5
SS-24_0.2-0.3	SS-24	0.2-0.3	19/09/2018	Portion 2	619070	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<2	<0.2	<10	<5
SS-31_0.2-0.3	SS-31	0.2-0.3	20/09/2018	Portion 2	618880	<2	<0.4	23	<5	9.9	<0.1	-	<5	-	-	-	<5
GW04_0.0-0.1	GW04	0-0.1	19/09/2018	Portion 3	619071	2.4	<0.4	7.9	19	130	0.1	-	<5	-	-	-	170
GW05 0.4-0.5	GW05	0.4-0.5	19/09/2018	Portion 3	622153	7.9	<0.4	8.2	40	76	0.2	-	<5	-	-	-	140
SS_73_0.0-0.1	SS73	0.0-0.1	28/09/2018	Portion 3	620448	4.1	<0.4	11	8	86	<0.1	-	<5	-	-	-	78
SS01 0.5-0.6	SS01	0.5-0.6	18/09/2018	Portion 3	618500	4	<0.4	14	<5	15	<0.1	-	<5	-	-	-	8.7
SS02 0.3-0.4	SS02	0.3-0.4	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-	-	-
SS02 0.5-0.6	SS02	0.5-0.6	18/09/2018	Portion 3	620797	<2	<0.4	30	32	180	<0.1	-	50	-	-	-	41
SS02 0-0.1	SS02	0-0.1	18/09/2018	Portion 3	618500	<2	<0.4	22	26	160	<0.1	-	45	-	-	-	40
SS03 0.5-0.6	SS03	0.5-0.6	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-	-	-
SS03 0-0.1	SS03	0-0.1	18/09/2018	Portion 3	620797	-	-	-	-	-	-	-	-	-	-	-	-
SS03 FRAG	SS03	0.5-0.6	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-	-	-
SS04 0.3-0.4	SS04	0.3-0.4	18/09/2018	Portion 3	618500	3.5	<0.4	8.3	35	89	<0.1	-	<5	-	-	-	140
SS05 0.5-0.6	SS05	0.5-0.6	18/09/2018	Portion 3	620797	-	-	-	-	-	-	-	-	-	-	-	-
SS05 0-0.1	SS05	0-0.1	18/09/2018	Portion 3	618500	<2	<0.4	7	<5	20	<0.1	-	<5	-	-	-	24
SS06 0-0.1	SS06	0-0.1	18/09/2018	Portion 3	618500	<2	<0.4	5.9	<5	20	<0.1	-	<5	-	-	-	8.7
SS07 0.9-1.0	SS07	0.9-1	18/09/2018	Portion 3	620797	2.3	<0.4	6.8	7.2	52	<0.1	-	<5	-	-	-	180
SS07 0-0.1	SS07	0-0.1	18/09/2018	Portion 3	618500	<2	<0.4	7.6	21	230	<0.1	-	<5	-	-	-	600
SS08 0-0.1	SS08	0-0.1	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-	-	-
SS-27_0.2-0.3	SS-27	0.2-0.3	19/09/2018	Portion 3	619070	2.2	<0.4	8.2	<5	16	<0.1	<5	<5	<2	<0.2	<10	21
SS-27_0.9-1.0	SS-27	0.9-1	19/09/2018	Portion 3	619070	6.6	<0.4	9.6	11	63	<0.1	<5	<5	<2	<0.2	<10	150
SS28 0.2-0.3	SS28	0.2-0.3	19/09/2018	Portion 3	622153	2.5	<0.4	6.2	<5	12	<0.1	-	<5	-	-	-	9.5
SS28 0-0.1	SS28	0-0.1	19/09/2018	Portion 3	622153	5.5	<0.4	11	15	110	<0.1	-	11	-	-	-	37
SS30 0-0.1	SS30	0-0.1	20/09/2018	Portion 3	620797	3.8	<0.4	9.1	30	110	<0.1	-	<5	-	-	-	350
SS-30_0.0-0.1	SS-30	0-0.1	20/09/2018	Portion 3	618880	4.9	<0.4	11	48	150	<0.1	-	<5	-	-	-	520
SS-25_0-0.1	SS-25	0-0.1	19/09/2018	Portion 4	619070	2.7	<0.4	6	<5	10	<0.1	<5	<5	<2	<0.2	<10	32
SS-26_0.2-0.3	SS-26	0.2-0.3	19/09/2018	Portion 4	619070	<2	<0.4	8.5	<5	8.4	<0.1	<5	<5	<2	<0.2	<10	8
SS-17_0-0.1	SS-17	0-0.1	19/09/2018	Portion 5	619070	2.2	<0.4	82	<5	8.6	<0.1	<5	<5	<2	<0.2	<10	9.9
SS40 0-0.1	SS40	0-0.1	20/09/2018	Portion 5	620797	8.4	<0.4	94	15	27	<0.1	-	6.2	-	-	-	37
SS-40_0.0-0.1	SS-40	0-0.1	20/09/2018	Portion 5	618880	7.9	<0.4	18	7.4	19	<0.1	-	<5	-	-	-	17
GW05_0.4-0.5	GW05	0.4-0.5	19/09/2018	Portion 6	619071	5.7	<0.4	6.4	22	68	0.1	-	<5	-	-	-	88
SS37 0-0.1	SS37	0-0.1	20/09/2018	Portion 6	620797	<2	<0.4	5.3	<5	13	<0.1	-	<5	-	-	-	6.7
SS41 0.2-0.3	SS41	0.2-0.3	20/09/2018	Portion 6	620797	-	-	-	-	-	-	-	-	-	-	-	-
SS-41_0.2-0.3	SS-41	0.2-0.3	20/09/2018	Portion 6	618880	<2	<0.4	23	<5	12	<0.1	-	<5	-	-	-	<5
SS-42_0.0-0.1	SS-42	0-0.1	20/09/2018	Portion 6	618880	<2	<0.4	17	<5	19	<0.1	-	<5	-	-	-	26
SS48* 0-0.1	SS48	0-0.1	21/09/2018	Portion 6	618949	<2	<0.4	13	<5	9.1	<0.1	-	8.1	-	-	-	17
SS_68_0.0-0.1	SS68	0.0-0.1	28/09/2018	Portion 6	620448	-	-	-	-	-	-	-	-	-	-	-	-
SS_72_0.0-0.1	SS72	0.0-0.1	28/09/2018	Portion 6	620448	4	<0.4	18	38	140	<0.1	-	15	-	-	-	110
SS-33_0.0-0.1	SS-33	0-0.1	20/09/2018	Portion 6	618880	<2	<0.4	11	9.9	40	<0.1	-	<5	-	-	-	49
SS-35_0.2-0.3	SS-35	0.2-0.3	20/09/2018	Portion 6	618880	<2	<0.4	18	<5	26	<0.1	-	<5	-	-	-	7.2
SS-37_0.2-0.3	SS-37	0.2-0.3	20/09/2018	Portion 6	618880	<2	<0.4	17	<5	13	<0.1	-	<5	-	-	-	<5
SS39 0-0.1	SS39	0-0.1	20/09/2018	Portion 6	620797	-	-	-	-	-	-	-	-	-	-	-	-
GW03 1.9-2.0	GW03	1.9-2.0	19/09/2018	Portion 7	622153	2.8	<0.4	30	5.8	21	<0.1	-	<5	-	-	-	7.8
GW03 3.4-3.5	GW03	3.4-3.5	19/09/2018	Portion 7	622153	3.8	<0.4	23	7.4	29	<0.1	-	<5	-	-	-	15
GW03_3.4-3.4	GW03	3.4-3.4	19/09/2018	Portion 7	619071	6.3	<0.4	40	<5	19	<0.1	-	<5	-	-	-	11

	TPHs (NEPC 1999)					TRHs (NEPC 2013)							BTEX					
Field_ID	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C40 Fraction (Total)	>C10-C16 less Naphthalene (F2)	C6-C10 Fraction	C6-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	20.00	20.00	50.00	50.00	50.00	50.00	100.00	100.00	100.00	50.00	20.00	20.00	0.10	0.10	0.10	0.10	0.20	0.30
NEPC 2013 EIL, EILs Aged Sediment - Urban Residential/Public Open Space																		
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil							300	2800		120		180	50	70	85			105
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A																		
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																		
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse						1000	2500	10000			700							
NEPM 2013 Soil HIL A															160			
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m										110		45	0.5	55	160			40
GW01_0.0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
GW02_0.0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS09 0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS10 0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS11 0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS12 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS13 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_69_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_71_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS14 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS15 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS16 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS16 0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS-18_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-19_0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS-23_0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS-24_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-31_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW04_0.0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
GW05 0.4-0.5	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS_73_0.0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS01 0.5-0.6	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS02 0.3-0.4	<20	<20	<50	110	110	<50	120	<100	120	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS02 0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS02 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03 0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03 FRAG	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS04 0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS05 0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS05 0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS06 0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS07 0.9-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS07 0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS08 0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS-27_0.2-0.3	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS-27_0.9-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS28 0.2-0.3	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS28 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS30 0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS-30_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-25_0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS-26_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-17_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS40 0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS-40_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW05_0.4-0.5	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS37 0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS41 0.2-0.3	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS-41_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-42_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS48* 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_68_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_72_0.0-0.1	<20	<20	<50	76	76	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS-33_0.0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
SS-35_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-37_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS39 0-0.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
GW03 1.9-2.0	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
GW03 3.4-3.5	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
GW03_3.4-3.4	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3

	Polycyclic Aromatic Hydrocarbons																					Chlorinated Benzenes
Field_ID	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Carcinogenic PAHs as B(a)P TEQ	Phenanthrene	Pyrene	PAHs (Total)	Hexachlorobenzene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50	0.50	0.05
NEPC 2013 EIL, EILs Aged Sediment - Urban Residential/Public Open Space																	170					
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil					0.7																	
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A																						
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																						
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																						
NEPM 2013 Soil HIL A						3	3	3										3			300	10
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m																	3					
GW01_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-
GW02_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-
SS09 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-
SS10 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-
SS11 0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.05
SS12 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS13 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_69_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_71_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS14 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS15 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS16 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS16 0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.05
SS-18_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-19_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	<0.05
SS-23_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-
SS-24_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-31_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW04_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-
GW05 0.4-0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-
SS_73_0.0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.05
SS01 0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-
SS02 0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-
SS02 0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS02 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03 0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03 FRAG	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS04 0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS05 0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS05 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-
SS06 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-
SS07 0.9-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS07 0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.05
SS08 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-
SS-27_0.2-0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	-
SS-27_0.9-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS28 0.2-0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-
SS28 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS30 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-
SS-30_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-25_0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.05
SS-26_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-17_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS40 0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.05
SS-40_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW05_0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-
SS37 0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.05
SS41 0.2-0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	-
SS-41_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-42_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS48* 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_68_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_72_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-
SS-33_0.0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.05
SS-35_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-37_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS39 0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.05
GW03 1.9-2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-
GW03 3.4-3.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-
GW03_3.4-3.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	-

Table A: Soil Analytical Results
Project Number: 54933
Project Name: Pest Island ESA

JBS&G

	Metals & Metalloids												TPHs (NEPC 1999)				TRHs (NEPC 2013)						BTEX					Polycyclic Aromatic Hydrocarbons																	Chlorinated Benzenes
	Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Molybdenum	Nickel	Selenium (Total)	Silver	Tin (Inorganic, as Sn)	Zinc	>C6-C10 Fraction	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C40 Fraction (Total)	>C6-C10 less BTEX (F1)	>C10-C16 less Naphthalene (F2)	>C16-C34 Fraction	>C34-C40 Fraction	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(b)+Benzo(j)fluoranthene	Benzo(b)pyrene TEQ (medium bound)*	Benzo(b)pyrene TEQ (upper bound)*	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Carcinogenic PAHs as BaP* TEQ	Phenanthrene	Pyrene	PAHs (Total)	Hexachlorobenzene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SSL	4.00	0.40	1.00	5.00	1.00	0.30	5.00	1.00	4.00	6.00	50.00	1.00	65.00	65.00	500.00	500.00	500.00	50.00	65.00	65.00	500.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.05
NEPM 2013 HIL A(a) Aged Sediment – Urban Residential/Public Open Space	300		400	300	1100			95				250																																		
NEPM 2013 HIL A Urban Residential and Public Open Space, Coarse Soil																	300	2800		120		160	50	70	85		105						0.7														
NEPM 2013 HIL Asbestos in Soil - Bonded ACM / Residential - HIL A																																													
NEPM 2013 HIL Asbestos in Soil - FA & AF - HIL																																													
NEPM 2013 Mgmt Limits - Residential, Parkland and Public Open Space, Coarse													3500	2500	10000					700																											
NEPM 2013 Soil HIL A	100	20	100	6000	300	40		600	200			7400								130	45	0.5	55	140			40						3		3									3			800	10
NEPM 2013 Soil HIL A & HIL B for Vapour Intrusion - Sand 0 to <1m																																													

Field_ID	LocCode	Sample_Depth_Range	Sampled_Date-Time	Location	Lab_Report_Number																																											
SS-29_0.0-0.1	SS-29	0-0.1	25/09/2018	Portion 7	610883	<2	<0.4	6.9	9.0	4.9	<0.1	-	16	-	-	-	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-29_2.0-2.7	SS-29	2.0-2.7	25/09/2018	Portion 7	610883	<2	<0.4	8.9	<5	1.0	<0.1	-	<5	-	-	-	<5	<20	<20	<50	<50	<50	<50	<100	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.21	<0.5	<0.5	<0.5	-
SS_56_0.0-0.1	SS56	0.0-0.1	26/09/2018	Portion 8	610918	<2	<0.4	8.4	<5	1.1	<0.1	-	<5	-	-	-	58	<20	<20	<50	<50	<50	<50	<100	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	<0.05
SS_56_2.0-2.5	SS56	2.0-2.5	26/09/2018	Portion 8	610918	<2	<0.4	7.6	<5	0.2	<0.1	-	<5	-	-	-	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_57_0.0-0.1	SS57	0.0-0.1	26/09/2018	Portion 8	610918	<2	<0.4	11	11	110	<0.1	-	7.2	-	-	-	183	<20	<20	<50	<50	<50	<50	<100	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.21	<0.5	<0.5	<0.5	<0.5
SS_58_0.0-0.1	SS58	0.0-0.1	26/09/2018	Portion 8	610918	<2	<0.4	7.2	<5	0.1	<0.1	-	<5	-	-	-	83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_59_0.0-0.1	SS59	0.0-0.1	26/09/2018	Portion 8	610918	<2	<0.4	12	12	3.0	<0.1	-	<5	-	-	-	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_60_0.0-0.1	SS60	0.0-0.1	26/09/2018	Portion 8	610918	<2	<0.4	11	15	1.2	<0.1	-	9.4	-	-	-	86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_61_0.0-0.1	SS61	0.0-0.1	26/09/2018	Portion 8	610918	<2	<0.4	10	<5	1.9	<0.1	-	<5	-	-	-	20	<20	<20	<50	<50	<50	<50	<100	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	<0.05
SS_62_0.2-0.3	SS62	0.2-0.3	26/09/2018	Portion 8	610918	<2	<0.4	80	<5	9.4	<0.1	-	<5	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_63_0.0-0.1	SS63	0.0-0.1	26/09/2018	Portion 8	610918	<2	<0.4	20	9.1	21	<0.1	-	<5	-	-	-	63	<20	<20	170	95	265	<50	230	<100	230	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-
SS_64_0.2-0.3	SS64	0.2-0.3	26/09/2018	Portion 8	610918	<2	<0.4	69	22	3.9	<0.1	-	31	-	-	-	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_65_0.0-0.1	SS65	0.0-0.1	26/09/2018	Portion 8	610918	<2	<0.4	<5	8.5	<5	<0.1	-	<5	-	-	-	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05
SS61-0.2-0.3	SS61	0.2-0.3	26/09/2018	Portion 8	610919	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-56_0.0-0.1	SS-56	0-0.1	25/09/2018	Portion 9	610883	<2	<0.4	15	7.4	1.5	<0.1	-	10	-	-	-	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-63_0.0-0.1	SS-63	0-0.1	25/09/2018	Portion 9	610883	<2	<0.4	11	8.1	29	<0.1	-	8.2	-	-	-	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5663-0-0.1	5663	0-0.1	25/09/2018	Portion 9	610797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05
SS-56_0.0-0.1	SS-56	0-0.1	25/09/2018	Portion 9	610883	<2	<0.4	24	58	58	<0.1	-	6.8	-	-	-	450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5667-0-0.1	5667	0-0.1	25/09/2018	Portion 9	610797	-	-	-	-	-	-	-	-	-	-	-	-	<20	<20	110	120	230	<50	210	<100	210	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.5	<0.5	0.9	1.4	1.2	1.6	1.8	2.1	0.9	0.6	1.1	1.5	<0.5	0.5	<0.5	<0.5	1.826	1.9	3.5	16.2	<0.05
SS-67_0.0-0.1	SS-67	0-0.1	25/09/2018	Portion 9	610883	3.5	<0.4	12	23	38	<0.1	-	5.8	-	-	-	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-55_0.0-0.1	SS-55	0-0.1	25/09/2018	Portion 10	610883	<2	<0.4	1.5	9.2	2.5	<0.1	-	6.6	-	-	-	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-68_0.2-0.3	SS-68	0.2-0.3	25/09/2018	Portion 10	610883	<2	<0.4	16	<5	7.3	<0.1	-	<5	-	-	-	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-69_0.2-0.3	SS-69	0.2-0.3	25/09/2018	Portion 10	610883	<2	<0.4	<5	<5	<5	<0.1	-	<5	-	-	-	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5664-0-0.1	5664	0-0.1	21/09/2018	Portion 10	610919	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5665-0-0.1	5665	0-0.1	21/09/2018	Portion 10	610919	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5662-0-0.1	5662	0-0.1	25/09/2018	Portion 11	610797	5.2	<0.4	25	25	3.6	<0.1	-	15	-	-	-	100	<20	<20	78	203	278	<50	200	<100	203	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.21	<0.5	<0.5	<0.5	<0.05
5663-0-0.1	5663	0-0.1	25/09/2018	Portion 11	610797	8.7	<0.4	12	11	2.2	<0.1	-	8.2	-	-	-	60	<20	<20	<50	78	78	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-
SS-39_0.2-0.3	SS-39	0.2-0.3	26/09/2018	Portion 11	610870	<2	<0.4	<5	<5	5.7	<0.1	<5	<5	<2	<0.2	<10	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-31_0-0.1	SS-31	0-0.1	26/09/2018	Portion 11	610870	5.4	<0.4	21	<5	1.9	<0.1	<5	<5	<2	<0.2	<10	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5622-0-0.1	5622	0 -0.1	26/09/2018	Portion 11	621319	4.3	<0.4	1.5	<5	1.2	<0.1	-	<5	-	-	-	<5	<20	<20	<50	<50	<50	<50	<100	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	<0.05
SS-32_0.2-0.3	SS-32	0.2-0.3	26/09/2018	Portion 11	610870	3.6	<0.4	20	<5	1.2	<0.1	<5	<5	<2	<0.2	<10	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-32_0.0-0.1	SS-32	0-0.1	26/09/2018	Portion 11	610883	6.8	<0.4	1.5	20	2.7	<0.1	-	10	-	-	-	71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-34_0.0-0.1	SS-34	0-0.1	25/09/2018	Portion 11	610883	<2	<0.4	1.2	1.2	2.1	<0.1	-	6.3	-	-	-	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-36_0.0-0.1	SS-36	0-0.1	25/09/2018	Portion 11	610883	5.2	<0.4	1.5	16	1.7	<0.1	-	13	-	-	-	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_70_0.0-0.1	5570	0.0-0.1	26/09/2018	Portion 12	610918	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-50_0.0-0.1	SS-50	0-0.1	25/09/2018	Portion 12	610883	<2	<0.4	21	44	540	<0.1	-	31	-	-	-	160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-51_0.0-0.1	SS-51	0-0.1	25/09/2018	Portion 12	610883	<2	<0.4	<5	16	160	<0.1	-	12	-	-	-	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-52_0.0-0.1	SS-52	0-0.1	25/09/2018	Portion 12	610883	<2	<0.4	7.7	9.6	37	<0.1	-	<5	-	-	-	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05
SS-53_0.0-0.1	SS-53	0-0.1	25/09/2018	Portion 12	610883	<2	<0.4	1.2	8.5	37	<0.1	-	5.2	-	-	-	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_66_0.0-0.1	5566	0.0-0.1	26/09/2018	Portion 13	610918	<2	<0.4	8.2	5.7	21	<0.1	-	7.6	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_66_0.4-0.6	5566	0.4-0.6	26/09/2018	Portion 13	610918	<2	<0.4	<5	<5	5.3	<0.1	-	<5	-	-	-	6.3	<20	<20	<50	<50	<50	<50	<100	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.21	<0.5	<0.5	<0.5	<0.05
SS_67_0.0-0.1	5567	0.0-0.1	26/09/2018	Portion 13	610918	7.1	<0.4	1.1	21	4.6	<0.1	-	27	-	-	-	44	<20	<20	<50	<50	<50	<50	<100	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.21	<0.5	<0.5	<0.5	-

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Polychlorinated Biphenyls / Organochlorine Pesticides

Field_ID	LocCode	Sample_Depth_Range	Sampled_Date-Time	Location	Lab_Report_Number	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	4,4-DDE	Aldrin	Aldrin + Dieldrin (Sum of Total)	alpha-BHC	beta-BHC	Chlordane	Dieldrin	DDD	DDT	DDT+DDE+DDD (Sum of Total)	delta-BHC	Endosulfan alpha	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.05	0.05	0.05	0.05	0.05	0.10	0.05	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	1.00
NEPC 2013 EIL, EILs Aged Sediment - Urban Residential/Public Open Space																						180													
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																																			
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A																																			
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																			
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																																			
NEPM 2013 Soil HIL A													1			6			50				240					10			6			300	20
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m																																			
GW01_0.0-0.1	GW01	0-0.1	19/09/2018	Portion 1	619071	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW02_0.0-0.1	GW02	0-0.1	19/09/2018	Portion 1	619071	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS09 0-0.1	SS09	0-0.1	18/09/2018	Portion 1	618500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS10 0-0.1	SS10	0-0.1	18/09/2018	Portion 1	618500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS11 0-0.1	SS11	0-0.1	18/09/2018	Portion 1	618500	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS12 0-0.1	SS12	0-0.1	18/09/2018	Portion 1	618500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS13 0-0.1	SS13	0-0.1	18/09/2018	Portion 1	620797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_69_0.0-0.1	SS69	0.0-0.1	28/09/2018	Portion 2	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_71_0.0-0.1	SS71	0.0-0.1	28/09/2018	Portion 2	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS14 0-0.1	SS14	0-0.1	18/09/2018	Portion 2	618500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS15 0-0.1	SS15	0-0.1	18/09/2018	Portion 2	618500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS16 0-0.1	SS16	0-0.1	18/09/2018	Portion 2	618500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS16 0-0.1	SS16	0-0.1	18/09/2018	Portion 2	620797	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS-18_0-0.1	SS-18	0-0.1	19/09/2018	Portion 2	619070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-19_0-0.1	SS-19	0-0.1	19/09/2018	Portion 2	619070	-	-	-	-	-	-	-	-	<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	<1
SS-23_0-0.1	SS-23	0-0.1	19/09/2018	Portion 2	619070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-24_0.2-0.3	SS-24	0.2-0.3	19/09/2018	Portion 2	619070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-31_0.2-0.3	SS-31	0.2-0.3	20/09/2018	Portion 2	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW04_0.0-0.1	GW04	0-0.1	19/09/2018	Portion 3	619071	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW05 0.4-0.5	GW05	0.4-0.5	19/09/2018	Portion 3	622153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_73_0.0-0.1	SS73	0.0-0.1	28/09/2018	Portion 3	620448	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS01 0.5-0.6	SS01	0.5-0.6	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS02 0.3-0.4	SS02	0.3-0.4	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS02 0.5-0.6	SS02	0.5-0.6	18/09/2018	Portion 3	620797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS02 0-0.1	SS02	0-0.1	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03 0.5-0.6	SS03	0.5-0.6	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03 0-0.1	SS03	0-0.1	18/09/2018	Portion 3	620797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03 FRAG	SS03	0.5-0.6	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS04 0.3-0.4	SS04	0.3-0.4	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS05 0.5-0.6	SS05	0.5-0.6	18/09/2018	Portion 3	620797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS05 0-0.1	SS05	0-0.1	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS06 0-0.1	SS06	0-0.1	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS07 0.9-1.0	SS07	0.9-1	18/09/2018	Portion 3	620797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS07 0-0.1	SS07	0-0.1	18/09/2018	Portion 3	618500	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS08 0-0.1	SS08	0-0.1	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-27_0.2-0.3	SS-27	0.2-0.3	19/09/2018	Portion 3	619070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-27_0.9-1.0	SS-27	0.9-1	19/09/2018	Portion 3	619070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS28 0.2-0.3	SS28	0.2-0.3	19/09/2018	Portion 3	622153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS28 0-0.1	SS28	0-0.1	19/09/2018	Portion 3	622153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS30 0-0.1	SS30	0-0.1	20/09/2018	Portion 3	620797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-30_0.0-0.1	SS-30	0-0.1	20/09/2018	Portion 3	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-25_0-0.1	SS-25	0-0.1	19/09/2018	Portion 4	619070	-	-	-	-	-	-	-	-	<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	<1
SS-26_0.2-0.3	SS-26	0.2-0.3	19/09/2018	Portion 4	619070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-17_0-0.1	SS-17	0-0.1	19/09/2018	Portion 5	619070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS40 0-0.1	SS40	0-0.1	20/09/2018	Portion 5	620797	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS-40_0.0-0.1	SS-40	0-0.1	20/09/2018	Portion 5	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW05_0.4-0.5	GW05	0.4-0.5	19/09/2018	Portion 6	619071	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS37 0-0.1	SS37	0-0.1	20/09/2018	Portion 6	620797	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS41 0.2-0.3	SS41	0.2-0.3	20/09/2018	Portion 6	620797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-41_0.2-0.3	SS-41	0.2-0.3	20/09/2018	Portion 6	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-42_0.0-0.1	SS-42	0-0.1	20/09/2018	Portion 6	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS48* 0-0.1	SS48	0-0.1	21/09/2018	Portion 6	618949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_68_0.0-0.1	SS68	0.0-0.1	28/09/2018	Portion 6	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_72_0.0-0.1	SS72	0.0-0.1	28/09/2018	Portion 6	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-33_0.0-0.1	SS-33	0-0.1	20/09/2018	Portion 6	618880	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS-35_0.2-0.3	SS-35	0.2-0.3	20/09/2018	Portion 6	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-37_0.2-0.3	SS-37	0.2-0.3	20/09/2018	Portion 6	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS39 0-0.1	SS39	0-0.1	20/09/2018	Portion 6	620797	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
GW03 1.9-2.0	GW03	1.9-2.0	19/09/2018	Portion 7	622153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW03 3.4-3.5	GW03	3.4-3.5	19/09/2018	Portion 7	622153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW03_3.4-3.4	GW03	3.4-3.4	19/09/2018	Portion 7	619071	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Organophosphorus Pesticides

Field_ID	Azinphos methyl	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprophos	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Mevinphos	Monocrotophos	Naled	Omethoate	Parathion	Parathion methyl	Phorate	Pirimiphos methyl	Pyrazophos	Ronnel	Sulprofos	Terbufos	Tetrachlorvinphos	Tokuthion	Trichloronate
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	0.20	0.20	0.20	0.20	2.00	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	2.00	0.20	2.00	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
NEPC 2013 EIL, EILs Aged Sediment - Urban Residential/Public Open Space																																		
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																																		
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A																																		
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																		
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																																		
NEPM 2013 Soil HIL A			160																															
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m																																		
GW01_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW02_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS09 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS10 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS11 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS12 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS13 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_69_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_71_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS14 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS15 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS16 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS16 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-18_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-19_0-0.1	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
SS-23_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-24_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-31_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW04_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW05 0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_73_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS01 0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS02 0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS02 0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS02 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03 0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03 FRAG	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS04 0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS05 0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS05 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS06 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS07 0.9-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS07 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS08 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-27_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-27_0.9-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS28 0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS28 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS30 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-30_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-25_0-0.1	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
SS-26_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-17_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS40 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-40_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW05_0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS37 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS41 0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-41_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-42_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS48* 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_68_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_72_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-33_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-35_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-37_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS39 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW03 1.9-2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW03 3.4-3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW03_3.4-3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Ionic Balance

Field_ID	Cation Exchange Capacity	EC 1:5 soil:water	pH 1:5 soil:water
	meq/100g	µS/cm	ph Units
EQL	0.05	10.00	0.10
NEPC 2013 EIL, EILs Aged Sediment - Urban Residential/Public Open Space			
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil			
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A			
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL			
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse			
NEPM 2013 Soil HIL A			
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m			
GW01_0.0-0.1	-	-	-
GW02_0.0-0.1	-	-	-
SS09 0-0.1	-	-	-
SS10 0-0.1	-	-	-
SS11 0-0.1	-	-	-
SS12 0-0.1	-	-	-
SS13 0-0.1	-	-	-
SS_69_0.0-0.1	-	-	-
SS_71_0.0-0.1	-	-	-
SS14 0-0.1	-	-	-
SS15 0-0.1	-	-	-
SS16 0-0.1	-	-	-
SS16 0-0.1	-	-	-
SS-18_0-0.1	-	-	-
SS-19_0-0.1	-	-	-
SS-23_0-0.1	-	-	-
SS-24_0.2-0.3	-	-	-
SS-31_0.2-0.3	-	-	-
GW04_0.0-0.1	-	-	-
GW05 0.4-0.5	-	-	-
SS_73_0.0-0.1	-	-	-
SS01 0.5-0.6	7.5	39	7.7
SS02 0.3-0.4	-	-	-
SS02 0.5-0.6	-	-	-
SS02 0-0.1	-	-	-
SS03 0.5-0.6	-	-	-
SS03 0-0.1	-	-	-
SS03 FRAG	-	-	-
SS04 0.3-0.4	-	-	-
SS05 0.5-0.6	-	-	-
SS05 0-0.1	-	-	-
SS06 0-0.1	-	-	-
SS07 0.9-1.0	-	-	-
SS07 0-0.1	-	-	-
SS08 0-0.1	-	-	-
SS-27_0.2-0.3	-	-	-
SS-27_0.9-1.0	-	-	-
SS28 0.2-0.3	-	-	-
SS28 0-0.1	-	-	-
SS30 0-0.1	-	-	-
SS-30_0.0-0.1	-	-	-
SS-25_0-0.1	-	-	-
SS-26_0.2-0.3	-	-	-
SS-17_0-0.1	-	-	-
SS40 0-0.1	-	-	-
SS-40_0.0-0.1	-	-	-
GW05_0.4-0.5	-	-	-
SS37 0-0.1	-	-	-
SS41 0.2-0.3	-	-	-
SS-41_0.2-0.3	-	-	-
SS-42_0.0-0.1	-	-	-
SS48* 0-0.1	-	-	-
SS_68_0.0-0.1	-	-	-
SS_72_0.0-0.1	-	-	-
SS-33_0.0-0.1	-	-	-
SS-35_0.2-0.3	2.5	47	5
SS-37_0.2-0.3	-	-	-
SS39 0-0.1	-	-	-
GW03 1.9-2.0	-	-	-
GW03 3.4-3.5	-	-	-
GW03_3.4-3.4	-	-	-

Table A: Soil Analytical Results
Project Number: 54933
Project Name: Peat Island ESA

JBS&G

Field_ID	LocCode	Sample_Depth_Range	Sampled_Date-Time	Location	Lab_Report_Number	Polychlorinated Biphenyls								Organochlorine Pesticides																					
						Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	4,4-DDE	Aldrin	Aldrin + Dieldrin (Sum of Total)	alpha-BHC	beta-BHC	Chlordane	Dieldrin	DDD	DDT	DDT+DDE+DDD (Sum of Total)	delta-BHC	Endosulfan alpha	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.05	0.05	0.05	0.05	0.05	0.10	0.05	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	1.00
NEPC 2013 EIL, EILs Aged Sediment - Urban Residential/Public Open Space																						180													
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																																			
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A																																			
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																			
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																																			
NEPM 2013 Soil HIL A													1			6			50				240					10			6			300	20
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m																																			
SS-29_0.0-0.1	SS-29	0-0.1	20/09/2018	Portion 7	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-29_2.6-2.7	SS-29	2.6-2.7	20/09/2018	Portion 7	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_56_0.0-0.1	SS56	0.0-0.1	28/09/2018	Portion 8	620448	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS_56_0.2-0.3	SS56	0.2-0.3	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_57_0.0-0.1	SS57	0.0-0.1	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_58_0.0-0.1	SS58	0.0-0.1	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_59_0.0-0.1	SS59	0.0-0.1	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_60_0.0-0.1	SS60	0.0-0.1	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_61_0.0-0.1	SS61	0.0-0.1	28/09/2018	Portion 8	620448	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS_62_0.2-0.3	SS62	0.2-0.3	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_63_0.0-0.1	SS63	0.0-0.1	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_64_0.2-0.3	SS64	0.2-0.3	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_65_0.0-0.1	SS65	0.0-0.1	28/09/2018	Portion 8	620448	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS61 0.2-0.3	SS61	0.2-0.3	28/09/2018	Portion 8	622153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-46_0.0-0.1	SS-46	0-0.1	20/09/2018	Portion 9	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-43_0.0-0.1	SS-43	0-0.1	20/09/2018	Portion 9	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS44 0-0.1	SS44	0-0.1	20/09/2018	Portion 9	620797	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS-44_0.0-0.1	SS-44	0-0.1	20/09/2018	Portion 9	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS47 0-0.1	SS47	0-0.1	20/09/2018	Portion 9	620797	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS-47_0.0-0.1	SS-47	0-0.1	20/09/2018	Portion 9	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-45_0.0-0.1	SS-45	0-0.1	20/09/2018	Portion 10	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-48_0.2-0.3	SS-48	0.2-0.3	20/09/2018	Portion 10	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-49_0.2-0.3	SS-49	0.2-0.3	20/09/2018	Portion 10	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS54 0-0.1	SS54	0-0.1	21/09/2018	Portion 10	618949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS55 0-0.1	SS55	0-0.1	21/09/2018	Portion 10	618949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS32 0-0.1	SS32	0-0.1	20/09/2018	Portion 11	620797	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS34 0-0.1	SS34	0-0.1	20/09/2018	Portion 11	620797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-20_0.2-0.3	SS-20	0.2-0.3	19/09/2018	Portion 11	619070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-21_0-0.1	SS-21	0-0.1	19/09/2018	Portion 11	619070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS22 0-0.1	SS22	0.-0.1	19/09/2018	Portion 11	622153	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS-22_0.2-0.3	SS-22	0.2-0.3	19/09/2018	Portion 11	619070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-32_0.0-0.1	SS-32	0-0.1	20/09/2018	Portion 11	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-34_0.0-0.1	SS-34	0-0.1	20/09/2018	Portion 11	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-36_0.0-0.1	SS-36	0-0.1	20/09/2018	Portion 11	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_70_0.0-0.1	SS70	0.0-0.1	28/09/2018	Portion 12	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-50_0.0-0.1	SS-50	0-0.1	20/09/2018	Portion 12	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-51_0.0-0.1	SS-51	0-0.1	20/09/2018	Portion 12	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-52_0.0-0.1	SS-52	0-0.1	20/09/2018	Portion 12	618880	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS-53_0.0-0.1	SS-53	0-0.1	20/09/2018	Portion 12	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_66_0.0-0.1	SS66	0.0-0.1	28/09/2018	Portion 13	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_66_0.5-0.6	SS66	0.5-0.6	28/09/2018	Portion 13	620448	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<1
SS_67_0.0-0.1	SS67	0.0-0.1	28/09/2018	Portion 13	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Field_ID	Organophosphorus Pesticides																																		Ionic Balance		
	Azinphos methyl	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprophos	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Mevinphos	Monocrotophos	Naled	Omethoate	Parathion	Parathion methyl	Phorate	Pirimiphos methyl	Pyrazophos	Ronnel	Sulprofos	Terbufos	Tetrachlorvinphos	Tokuthion	Trichloronate	Cation Exchange Capacity	EC 1:5 soil:water	pH 1:5 soil:water
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	meq/100g	µS/cm	ph Units
EQL	0.20	0.20	0.20	0.20	2.00	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	2.00	0.20	2.00	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.05	10.00	0.10
NEPC 2013 EIL, EILs Aged Sediment - Urban Residential/Public Open Space																																					
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																																					
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A																																					
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																																					
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																																					
NEPM 2013 Soil HIL A			160																																		
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m																																					
SS-29_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-29_2.6-2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_56_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_56_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_57_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_58_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_59_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_60_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_61_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_62_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_63_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_64_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_65_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS61 0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.1	21	6.9
SS-46_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-43_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS44 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-44_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS47 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-47_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-45_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-48_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-49_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS54 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS55 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS32 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS34 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-20_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-21_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS22 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-22_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-32_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	140	6.4
SS-34_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-36_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_70_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-50_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-51_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-52_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-53_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_66_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_66_0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_67_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A: Soil Analytical Results
Project Number: 54933
Project Name: Peat Island ESA

Field_ID	LocCode	Sample_Depth_Range	Sampled_Date-Time	Location	Lab_Report_Number	Approx. Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF
						Asbestos									
						g	%w/w	%w/w	g	g	g	g	g	g	g
EQL															
NEPC 2013 EIL, EILs Aged Sediment - Urban Residential/Public Open Space															
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil															
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A							0.01								
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL								0.001							
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse															
NEPM 2013 Soil HIL A															
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m															
GW01_0.0-0.1	GW01	0-0.1	19/09/2018	Portion 1	619071	-	-	-	-	-	-	-	-	-	-
GW02_0.0-0.1	GW02	0-0.1	19/09/2018	Portion 1	619071	-	-	-	-	-	-	-	-	-	-
SS09 0-0.1	SS09	0-0.1	18/09/2018	Portion 1	618500	-	-	-	-	-	-	-	-	-	-
SS10 0-0.1	SS10	0-0.1	18/09/2018	Portion 1	618500	-	-	-	-	-	-	-	-	-	-
SS11 0-0.1	SS11	0-0.1	18/09/2018	Portion 1	618500	-	-	-	-	-	-	-	-	-	-
SS12 0-0.1	SS12	0-0.1	18/09/2018	Portion 1	618500	-	-	-	-	-	-	-	-	-	-
SS13 0-0.1	SS13	0-0.1	18/09/2018	Portion 1	620797	-	-	-	-	-	-	-	-	-	-
SS_69_0.0-0.1	SS69	0.0-0.1	28/09/2018	Portion 2	620448	-	-	-	-	-	-	-	-	-	-
SS_71_0.0-0.1	SS71	0.0-0.1	28/09/2018	Portion 2	620448	-	-	-	-	-	-	-	-	-	-
SS14 0-0.1	SS14	0-0.1	18/09/2018	Portion 2	618500	-	-	-	-	-	-	-	-	-	-
SS15 0-0.1	SS15	0-0.1	18/09/2018	Portion 2	618500	-	-	-	-	-	-	-	-	-	-
SS16 0-0.1	SS16	0-0.1	18/09/2018	Portion 2	618500	-	-	-	-	-	-	-	-	-	-
SS16 0-0.1	SS16	0-0.1	18/09/2018	Portion 2	620797	-	-	-	-	-	-	-	-	-	-
SS-18_0-0.1	SS-18	0-0.1	19/09/2018	Portion 2	619070	-	-	-	-	-	-	-	-	-	-
SS-19_0-0.1	SS-19	0-0.1	19/09/2018	Portion 2	619070	-	-	-	-	-	-	-	-	-	-
SS-23_0-0.1	SS-23	0-0.1	19/09/2018	Portion 2	619070	-	-	-	-	-	-	-	-	-	-
SS-24_0.2-0.3	SS-24	0.2-0.3	19/09/2018	Portion 2	619070	-	-	-	-	-	-	-	-	-	-
SS-31_0.2-0.3	SS-31	0.2-0.3	20/09/2018	Portion 2	618880	-	-	-	-	-	-	-	-	-	-
GW04_0.0-0.1	GW04	0-0.1	19/09/2018	Portion 3	619071	-	-	-	-	-	-	-	-	-	-
GW05 0.4-0.5	GW05	0.4-0.5	19/09/2018	Portion 3	622153	-	-	-	-	-	-	-	-	-	-
SS_73_0.0-0.1	SS73	0.0-0.1	28/09/2018	Portion 3	620448	679	0	0	0	0	0	0	0	0	0
SS01 0.5-0.6	SS01	0.5-0.6	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-
SS02 0.3-0.4	SS02	0.3-0.4	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-
SS02 0.5-0.6	SS02	0.5-0.6	18/09/2018	Portion 3	620797	-	-	-	-	-	-	-	-	-	-
SS02 0-0.1	SS02	0-0.1	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-
SS03 0.5-0.6	SS03	0.5-0.6	18/09/2018	Portion 3	618500	796	0	0.0268	0	0	1.067	0.2134	0	0	0.2134
SS03 0-0.1	SS03	0-0.1	18/09/2018	Portion 3	620797	256	0	0	0	0	0	0	0	0	0
SS03 FRAG	SS03	0.5-0.6	18/09/2018	Portion 3	618500	182	0	0	0	0	0	0	0	0	0
SS04 0.3-0.4	SS04	0.3-0.4	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-
SS05 0.5-0.6	SS05	0.5-0.6	18/09/2018	Portion 3	620797	298	0	0	0	0	0	0	0	0	0
SS05 0-0.1	SS05	0-0.1	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-
SS06 0-0.1	SS06	0-0.1	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-
SS07 0.9-1.0	SS07	0.9-1	18/09/2018	Portion 3	620797	-	-	-	-	-	-	-	-	-	-
SS07 0-0.1	SS07	0-0.1	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-
SS08 0-0.1	SS08	0-0.1	18/09/2018	Portion 3	618500	-	-	-	-	-	-	-	-	-	-
SS-27_0.2-0.3	SS-27	0.2-0.3	19/09/2018	Portion 3	619070	662	0	0	0	0	0	0	0	0	0
SS-27_0.9-1.0	SS-27	0.9-1	19/09/2018	Portion 3	619070	687	0	0	0	0	0	0	0	0	0
SS28 0.2-0.3	SS28	0.2-0.3	19/09/2018	Portion 3	622153	-	-	-	-	-	-	-	-	-	-
SS28 0-0.1	SS28	0-0.1	19/09/2018	Portion 3	622153	-	-	-	-	-	-	-	-	-	-
SS30 0-0.1	SS30	0-0.1	20/09/2018	Portion 3	620797	-	-	-	-	-	-	-	-	-	-
SS-30_0.0-0.1	SS-30	0-0.1	20/09/2018	Portion 3	618880	601	0	0	0	0	0	0	0	0	0
SS-25_0-0.1	SS-25	0-0.1	19/09/2018	Portion 4	619070	522	0	0	0	0	0	0	0	0	0
SS-26_0.2-0.3	SS-26	0.2-0.3	19/09/2018	Portion 4	619070	-	-	-	-	-	-	-	-	-	-
SS-17_0-0.1	SS-17	0-0.1	19/09/2018	Portion 5	619070	-	-	-	-	-	-	-	-	-	-
SS40 0-0.1	SS40	0-0.1	20/09/2018	Portion 5	620797	-	-	-	-	-	-	-	-	-	-
SS-40_0.0-0.1	SS-40	0-0.1	20/09/2018	Portion 5	618880	-	-	-	-	-	-	-	-	-	-
GW05_0.4-0.5	GW05	0.4-0.5	19/09/2018	Portion 6	619071	-	-	-	-	-	-	-	-	-	-
SS37 0-0.1	SS37	0-0.1	20/09/2018	Portion 6	620797	-	-	-	-	-	-	-	-	-	-
SS41 0.2-0.3	SS41	0.2-0.3	20/09/2018	Portion 6	620797	-	-	-	-	-	-	-	-	-	-
SS-41_0.2-0.3	SS-41	0.2-0.3	20/09/2018	Portion 6	618880	-	-	-	-	-	-	-	-	-	-
SS-42_0.0-0.1	SS-42	0-0.1	20/09/2018	Portion 6	618880	-	-	-	-	-	-	-	-	-	-
SS48* 0-0.1	SS48	0-0.1	21/09/2018	Portion 6	618949	-	-	-	-	-	-	-	-	-	-
SS_68_0.0-0.1	SS68	0.0-0.1	28/09/2018	Portion 6	620448	-	-	-	-	-	-	-	-	-	-
SS_72_0.0-0.1	SS72	0.0-0.1	28/09/2018	Portion 6	620448	687	0	0	0	0	0	0	0	0	0
SS-33_0.0-0.1	SS-33	0-0.1	20/09/2018	Portion 6	618880	535	0	0	0	0	0	0	0	0	0
SS-35_0.2-0.3	SS-35	0.2-0.3	20/09/2018	Portion 6	618880	-	-	-	-	-	-	-	-	-	-
SS-37_0.2-0.3	SS-37	0.2-0.3	20/09/2018	Portion 6	618880	-	-	-	-	-	-	-	-	-	-
SS39 0-0.1	SS39	0-0.1	20/09/2018	Portion 6	620797	-	-	-	-	-	-	-	-	-	-
GW03 1.9-2.0	GW03	1.9-2.0	19/09/2018	Portion 7	622153	-	-	-	-	-	-	-	-	-	-
GW03 3.4-3.5	GW03	3.4-3.5	19/09/2018	Portion 7	622153	-	-	-	-	-	-	-	-	-	-
GW03_3.4-3.4	GW03	3.4-3.4	19/09/2018	Portion 7	619071	-	-	-	-	-	-	-	-	-	-

Field_ID	Asbestos Reported Result	Asbestos Sample Dimensions	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment	Synthetic Fibres - Comment
	Asbestos		Asbestos - Trace Analysis					
	Comment	Comment	Comment	Comment	Comment	Comment	Comment	Comment
GW01_0.0-0.1	-	-	-	-	-	-	-	-
GW02_0.0-0.1	-	-	-	-	-	-	-	-
SS09 0-0.1	-	-	-	-	-	-	-	-
SS10 0-0.1	-	-	-	-	-	-	-	-
SS11 0-0.1	-	-	-	-	-	-	-	-
SS12 0-0.1	-	-	-	-	-	-	-	-
SS13 0-0.1	-	-	-	-	-	-	-	-
SS_69_0.0-0.1	-	-	-	-	-	-	-	-
SS_71_0.0-0.1	-	-	-	-	-	-	-	-
SS14 0-0.1	-	-	-	-	-	-	-	-
SS15 0-0.1	-	-	-	-	-	-	-	-
SS16 0-0.1	-	-	-	-	-	-	-	-
SS16 0-0.1	-	-	-	-	-	-	-	-
SS-18_0-0.1	-	-	-	-	-	-	-	-
SS-19_0-0.1	-	-	-	-	-	-	-	-
SS-23_0-0.1	-	-	-	-	-	-	-	-
SS-24_0.2-0.3	-	-	-	-	-	-	-	-
SS-31_0.2-0.3	-	-	-	-	-	-	-	-
GW04_0.0-0.1	-	-	-	-	-	-	-	-
GW05 0.4-0.5	-	-	-	-	-	-	-	-
SS_73_0.0-0.1	No asbestos detected at the reporting limit of 0.001% w/w.*	-	Nil	Nil	Nil	Organic fibres detected.	No respirable fibres detected.	Nil
SS01 0.5-0.6	-	-	-	-	-	-	-	-
SS02 0.3-0.4	-	-	-	-	-	-	-	-
SS02 0.5-0.6	-	-	-	-	-	-	-	-
SS02 0-0.1	-	-	-	-	-	-	-	-
SS03 0.5-0.6	FA:Chrysotile and crocidolite asbestos detected in weathered fibre cement fragments.	-	Nil	Nil	FA:Chrysotile and crocidolite asbestos detected in weathered fibre cement fragments.	Organic fibres detected.	No respirable fibres detected.	Nil
SS03 0-0.1	No asbestos detected at the reporting limit of 0.001% w/w.*	-	Nil	Nil	Nil	Organic fibres detected.	No respirable fibres detected.	Nil
SS03 FRAG	ACM:Chrysotile; amosite and crocidolite asbestos detected.	200x90x5	Nil	Nil	Nil	Nil	Nil	Nil
SS04 0.3-0.4	-	-	-	-	-	-	-	-
SS05 0.5-0.6	No asbestos detected at the reporting limit of 0.001% w/w.*	-	Nil	Nil	Nil	Organic fibres detected.	No respirable fibres detected.	Nil
SS05 0-0.1	-	-	-	-	-	-	-	-
SS06 0-0.1	-	-	-	-	-	-	-	-
SS07 0.9-1.0	-	-	-	-	-	-	-	-
SS07 0-0.1	-	-	-	-	-	-	-	-
SS08 0-0.1	-	-	-	-	-	-	-	-
SS-27_0.2-0.3	No asbestos detected at the reporting limit of 0.001% w/w.*	-	Nil	Nil	Nil	Organic fibres detected.	No respirable fibres detected.	Nil
SS-27_0.9-1.0	No asbestos detected at the reporting limit of 0.001% w/w.*	-	Nil	Nil	Nil	Organic fibres detected.	No respirable fibres detected.	Nil
SS28 0.2-0.3	-	-	-	-	-	-	-	-
SS28 0-0.1	-	-	-	-	-	-	-	-
SS30 0-0.1	-	-	-	-	-	-	-	-
SS-30_0.0-0.1	No asbestos detected at the reporting limit of 0.001% w/w.*	-	Nil	Nil	Nil	Organic fibres detected.	No respirable fibres detected.	Nil
SS-25_0-0.1	No asbestos detected at the reporting limit of 0.001% w/w.*	-	Nil	Nil	Nil	Organic fibres detected.	No respirable fibres detected.	Nil
SS-26_0.2-0.3	-	-	-	-	-	-	-	-
SS-17_0-0.1	-	-	-	-	-	-	-	-
SS40 0-0.1	-	-	-	-	-	-	-	-
SS-40_0.0-0.1	-	-	-	-	-	-	-	-
GW05_0.4-0.5	-	-	-	-	-	-	-	-
SS37 0-0.1	-	-	-	-	-	-	-	-
SS41 0.2-0.3	-	-	-	-	-	-	-	-
SS-41_0.2-0.3	-	-	-	-	-	-	-	-
SS-42_0.0-0.1	-	-	-	-	-	-	-	-
SS48* 0-0.1	-	-	-	-	-	-	-	-
SS_68_0.0-0.1	-	-	-	-	-	-	-	-
SS_72_0.0-0.1	No asbestos detected at the reporting limit of 0.001% w/w.*	-	Nil	Nil	Nil	Organic fibres detected.	No respirable fibres detected.	Nil
SS-33_0.0-0.1	No asbestos detected at the reporting limit of 0.001% w/w.*	-	Nil	Nil	Nil	Organic fibres detected.	No respirable fibres detected.	Nil
SS-35_0.2-0.3	-	-	-	-	-	-	-	-
SS-37_0.2-0.3	-	-	-	-	-	-	-	-
SS39 0-0.1	-	-	-	-	-	-	-	-
GW03 1.9-2.0	-	-	-	-	-	-	-	-
GW03 3.4-3.5	-	-	-	-	-	-	-	-
GW03_3.4-3.4	-	-	-	-	-	-	-	-

Field_ID	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol	2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTS)	1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTS)	1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTS)	1H.1H.2H.2H-perfluorododecanesulfonic acid	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnA)	Perfluorododecanoic acid (PFDoA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctanesulfonamide (FOSA)	N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	N-ethyl-perfluorooctanesulfonamidoacetic acid	N-methyl-perfluorooctanesulfonamidoacetic acid	Perfluorobutanesulfonic acid (PFBS)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	Sum of PFHxS and PFOS	Sum of PFASs (n=28)	Sum of WA DER PFAS (n=10)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
	PFAS																																
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	0.01	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	0.05	0.01	0.01	0.01
GW01_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW02_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS09 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS10 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS11 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS12 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS13 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_69_0.0-0.1	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005
SS_71_0.0-0.1	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005
SS14 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS15 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS16 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS16 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-18_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-19_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-23_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-24_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-31_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW04_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW05 0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_73_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS01 0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS02 0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS02 0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS02 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03 0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03 FRAG	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS04 0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS05 0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS05 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS06 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS07 0.9-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS07 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS08 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-27_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-27_0.9-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS28 0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS28 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS30 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-30_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-25_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-26_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-17_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS40 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-40_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW05_0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS37 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS41 0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-41_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-42_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS48* 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_68_0.0-0.1	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005
SS_72_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-33_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-35_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-37_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS39 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW03 1.9-2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW03 3.4-3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW03_3.4-3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A: Soil Analytical Results
Project Number: 54933
Project Name: Peat Island ESA

						Asbestos										Asbestos		Asbestos - Trace Analysis					
						Approx. Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos Reported Result	Asbestos Sample Dimensions	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment	Synthetic Fibres - Comment
						g	%w/w	%w/w	g	g	g	g	g	g	g	Comment	Comment	Comment	Comment	Comment	Comment	Comment	Comment
EQL																							
NEPC 2013 EIL, EILs Aged Sediment - Urban Residential/Public Open Space																							
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																							
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A							0.01																
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL								0.001															
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																							
NEPM 2013 Soil HIL A																							
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m																							
Field_ID	**LocCode**	**Sample_Depth_Range**	**Sampled_Date-Time**	**Location**	**Lab_Report_Number**																		
SS-29_0.0-0.1	SS-29	0-0.1	20/09/2018	Portion 7	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-29_2.6-2.7	SS-29	2.6-2.7	20/09/2018	Portion 7	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_56_0.0-0.1	SS56	0.0-0.1	28/09/2018	Portion 8	620448	658	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	-	Nil	Nil	Nil	Organic fibres detected.	No respirable fibres detected.	Nil
SS_56_0.2-0.3	SS56	0.2-0.3	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_57_0.0-0.1	SS57	0.0-0.1	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_58_0.0-0.1	SS58	0.0-0.1	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_59_0.0-0.1	SS59	0.0-0.1	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_60_0.0-0.1	SS60	0.0-0.1	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_61_0.0-0.1	SS61	0.0-0.1	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_62_0.2-0.3	SS62	0.2-0.3	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_63_0.0-0.1	SS63	0.0-0.1	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_64_0.2-0.3	SS64	0.2-0.3	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_65_0.0-0.1	SS65	0.0-0.1	28/09/2018	Portion 8	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS61 0.2-0.3	SS61	0.2-0.3	28/09/2018	Portion 8	622153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-46_0.0-0.1	SS-46	0-0.1	20/09/2018	Portion 9	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-43_0.0-0.1	SS-43	0-0.1	20/09/2018	Portion 9	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS44 0-0.1	SS44	0-0.1	20/09/2018	Portion 9	620797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-44_0.0-0.1	SS-44	0-0.1	20/09/2018	Portion 9	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS47 0-0.1	SS47	0-0.1	20/09/2018	Portion 9	620797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-47_0.0-0.1	SS-47	0-0.1	20/09/2018	Portion 9	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-45_0.0-0.1	SS-45	0-0.1	20/09/2018	Portion 10	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-48_0.2-0.3	SS-48	0.2-0.3	20/09/2018	Portion 10	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-49_0.2-0.3	SS-49	0.2-0.3	20/09/2018	Portion 10	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS54 0-0.1	SS54	0-0.1	21/09/2018	Portion 10	618949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS55 0-0.1	SS55	0-0.1	21/09/2018	Portion 10	618949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS32 0-0.1	SS32	0-0.1	20/09/2018	Portion 11	620797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS34 0-0.1	SS34	0-0.1	20/09/2018	Portion 11	620797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-20_0.2-0.3	SS-20	0.2-0.3	19/09/2018	Portion 11	619070	706	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	-	Nil	Nil	Nil	Organic fibres detected.	No respirable fibres detected.	Nil
SS-21_0-0.1	SS-21	0-0.1	19/09/2018	Portion 11	619070	495	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	-	Nil	Nil	Nil	Organic fibres detected.	No respirable fibres detected.	Nil
SS22 0-0.1	SS22	0.-0.1	19/09/2018	Portion 11	622153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-22_0.2-0.3	SS-22	0.2-0.3	19/09/2018	Portion 11	619070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-32_0.0-0.1	SS-32	0-0.1	20/09/2018	Portion 11	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-34_0.0-0.1	SS-34	0-0.1	20/09/2018	Portion 11	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-36_0.0-0.1	SS-36	0-0.1	20/09/2018	Portion 11	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_70_0.0-0.1	SS70	0.0-0.1	28/09/2018	Portion 12	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-50_0.0-0.1	SS-50	0-0.1	20/09/2018	Portion 12	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-51_0.0-0.1	SS-51	0-0.1	20/09/2018	Portion 12	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-52_0.0-0.1	SS-52	0-0.1	20/09/2018	Portion 12	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-53_0.0-0.1	SS-53	0-0.1	20/09/2018	Portion 12	618880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_66_0.0-0.1	SS66	0.0-0.1	28/09/2018	Portion 13	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_66_0.5-0.6	SS66	0.5-0.6	28/09/2018	Portion 13	620448	891	0	0	0	0	0	0	0	0	0	No asbestos detected at the reporting limit of 0.001% w/w.*	-	Nil	Nil	Nil	Organic fibres detected.	No respirable fibres detected.	Nil
SS_67_0.0-0.1	SS67	0.0-0.1	28/09/2018	Portion 13	620448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	PFAS																																
Field_ID	2-(N-methylperfluoro-1-octane sulfonamido)-ethanol	2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol	1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTS)	1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTS)	1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTS)	1H.1H.2H.2H-perfluorododecanesulfonic acid	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnA)	Perfluorododecanoic acid (PFDoA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctanesulfonamide (FOSA)	N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	N-ethyl-perfluorooctanesulfonamidoacetic acid	N-methyl-perfluorooctanesulfonamidoacetic acid	Perfluorobutanesulfonic acid (PFBS)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	Sum of PFHxS and PFOS	Sum of PFASs (n=28)	Sum of WA DER PFAS (n=10)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	0.01	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	0.05	0.01	0.01	0.01
SS-29_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-29_2.6-2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_56_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_56_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_57_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_58_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_59_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_60_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_61_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_62_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_63_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_64_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_65_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS61 0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-46_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-43_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS44 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-44_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS47 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-47_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-45_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-48_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-49_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS54 0-0.1	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	0.0054	<0.005	0.0054	<0.05	<0.01	0.0054	0.0054
SS55 0-0.1	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005
SS32 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS34 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-20_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-21_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS22 0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-22_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-32_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-34_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-36_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_70_0.0-0.1	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.01	<0.005	<0.005
SS-50_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-51_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-52_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-53_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_66_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_66_0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS_67_0.0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table B: Groundwater Analytical Results
Project Number: 54933
Project Name: Peat Island ESA

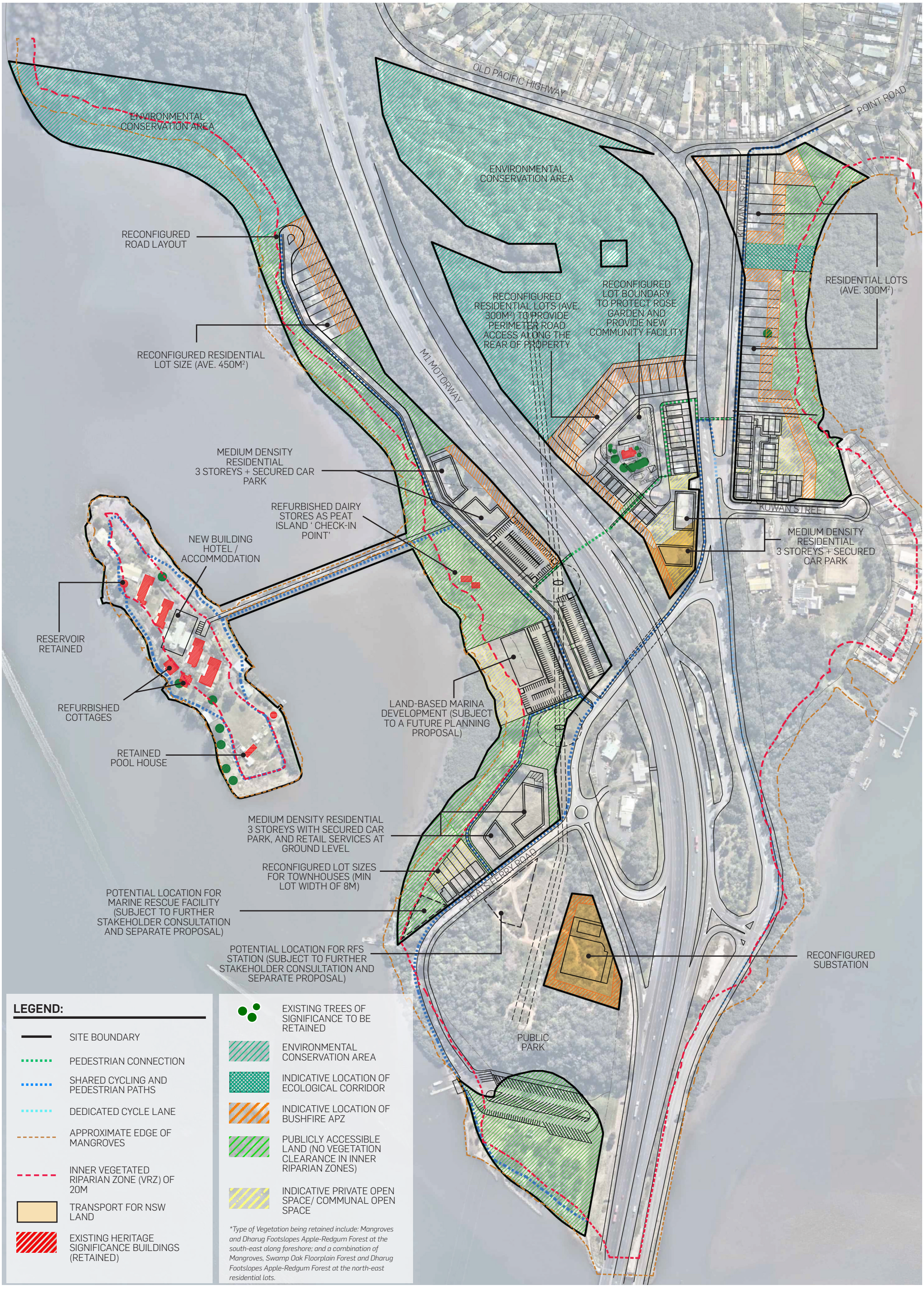
	Metals & Metalloids								Chlorinated Alkanes																Chlorinated Alkenes										Trihalomethanes				TPHs (NEPC 1999)					TRHs (NEPC 2013)						
	Arsenic (Total) (Filtered)	Cadmium (Filtered)	Chromium (Total) (Filtered)	Copper (Filtered)	Lead (Filtered)	Mercury (Inorganic) (Filtered)	Nickel (Filtered)	Zinc (Filtered)	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	Bromochloromethane	Carbon tetrachloride	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane	1,1-dichloroethene	3-chloropropene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	Bromodichloromethane	Chloroform	Dibromochloromethane	Tribromomethane	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C40 Fraction (Total)	>C10-C16 less Naphthalene (F2)	C6-C10 Fraction	C6-C10 less BTEX (F1)
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.001	0.0002	0.001	0.001	0.001	0.0001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.02	0.05	0.10	0.10	0.10	0.05	0.10	0.10	0.10	0.05	0.02	0.02
NEPM 2013 GIL - Marine Waters		0.0007		0.0013	0.0044	0.0001	0.007	0.015				1.9																																					
NEPM 2013 Groundwater HSL A & HSL B for Vapour Intrusion																																																	
NHMRC (2011) (as amended Oct 2017 Health) Factor 10 Applied to Recreational	0.1	0.02		20	0.1	0.01	0.2								0.03					0.03				0.04		0.3					0.5			0.2	0.003	2.5	2.5	2.5	2.5		0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9		

Field_ID	LocCode	WellCode	Sampled_Date-Time																																																	
GW_01	GW	GW	28/09/2018	<0.001	<0.0002	<0.001	0.012	<0.001	<0.0001	0.012	0.22	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.02	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.02	<0.02
GW_02	GW	GW	28/09/2018	0.002	0.0002	<0.001	0.013	0.003	<0.0001	0.016	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.02	<0.02
GW_03	GW	GW	28/09/2018	<0.001	0.0006	<0.001	0.006	<0.001	<0.0001	0.02	0.11	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.02	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.02	<0.02
GW_04	GW	GW	28/09/2018	<0.001	0.0005	<0.001	0.021	0.002	<0.0001	0.007	0.17	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.02	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.02	<0.02
GW_05	GW	GW	28/09/2018	<0.001	<0.0002	0.001	0.004	0.001	<0.0001	0.003	0.056	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.02	<0.02
MW_01	MW	MW	1/08/2013	-	-	-	-	<0.0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	<0.05	<0.1	<0.1	<0.	<0.05	<0.1	<0.1	-	<0.05	<0.02	<0.02
MW_01	MW	MW	28/09/2018	<0.001	<0.0002	<0.001	0.027	0.004	<0.0001	0.005	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.02	<0.02
MW_02	MW	MW	1/08/2013	-	-	-	-	<0.0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	-	<0.05	<0.02	<0.02
MW_02	MW	MW	28/09/2018	<0.001	<0.0002	<0.001	0.034	0.005	<0.0001	0.007	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.02	<0.02
MW_03	MW	MW	1/08/2013	-	-	-	-	<0.0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	-	<0.05	<0.02	<0.02
MW_03	MW	MW	28/09/2018	<0.001	<0.0002	<0.001	0.035	0.004	<0.0001	0.006	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.02	<0.02

Table B: Groundwater Analytical Results
Project Number: 54933
Project Name: Peat Island ESA

	BTEX						Polycyclic Aromatic Hydrocarbons																	Monocyclic Aromatic Hydrocarbons					Miscellaneous Hydrocarbons						Chlorinated Benzenes				Solvents	Organic Sulfur Compounds
	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	Bromobenzene	Isopropylbenzene	Styrene	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromomethane	Dibromomethane	Iodomethane	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	2-Propanone (Acetone)	Carbon disulfide
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L
EQL	0.001	0.001	0.001	0.001	0.002	0.003	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	1.00	0.001
NEPM 2013 GIL - Marine Waters	0.5																			0.05																			
NEPM 2013 Groundwater HSL A & HSL B for Vapour Intrusion	0.8	NL	NL			NL														NL																			
NHMRC (2011) (as amended Oct 2017 Health) Factor 10 Applied to Recreational	0.01	3	8			6					0.0001																0.3	0.01			0.01			15		0.4	3	140000	
Field_ID	LocCode	WellCode	Sampled_Date-Time																																					
GW_01	GW	GW	28/09/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<1	<0.001
GW_02	GW	GW	28/09/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW_03	GW	GW	28/09/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<1	<0.001
GW_04	GW	GW	28/09/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<1	<0.001
GW_05	GW	GW	28/09/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW_01	MW	MW	1/08/2013	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW_01	MW	MW	28/09/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW_02	MW	MW	1/08/2013	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW_02	MW	MW	28/09/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW_03	MW	MW	1/08/2013	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW_03	MW	MW	28/09/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix B Concept Plan



LEGEND:

- SITE BOUNDARY
- PEDESTRIAN CONNECTION
- SHARED CYCLING AND PEDESTRIAN PATHS
- DEDICATED CYCLE LANE
- APPROXIMATE EDGE OF MANGROVES
- INNER VEGETATED RIPARIAN ZONE (VRZ) OF 20M
- TRANSPORT FOR NSW LAND
- EXISTING HERITAGE SIGNIFICANCE BUILDINGS (RETAINED)
- EXISTING TREES OF SIGNIFICANCE TO BE RETAINED
- ENVIRONMENTAL CONSERVATION AREA
- INDICATIVE LOCATION OF ECOLOGICAL CORRIDOR
- INDICATIVE LOCATION OF BUSHFIRE APZ
- PUBLICLY ACCESSIBLE LAND (NO VEGETATION CLEARANCE IN INNER RIPARIAN ZONES)
- INDICATIVE PRIVATE OPEN SPACE/ COMMUNAL OPEN SPACE

**Type of Vegetation being retained include: Mangroves and Dharug Footslopes Apple-Redgum Forest at the south-east along foreshore; and a combination of Mangroves, Swamp Oak Floorplain Forest and Dharug Footslopes Apple-Redgum Forest at the north-east residential lots.*

URBIS

MOONEY MOONEY & PEAT ISLAND
FINAL CONCEPT PLAN

1:4000 @ A3

0 50 100 150 200

DATE: 28.07.2021
JOB NO: P0020554
DWG NO: PP01
REV: K

Appendix C Previous Site History Information

WORKCOVER
NEW SOUTH WALES

Our Ref: D13/008322
Your Ref: Tom Harding

5 February 2013

Attention: Tom Harding
JBS Environmental
Level 1,
50 Margaret St
Sydney NSW 2000

Dear Mr Harding,

RE SITE: Pacific Hwy Moonee Moonee NSW

I refer to your site search request received by WorkCover NSW on 23 January 2013 requesting information on licences to keep dangerous goods for the above site.

A search of the Stored Chemical Information Database (SCID) and the microfiche records held by WorkCover NSW has not located any records pertaining to the above mentioned premises.

If you have any further queries please contact the Dangerous Goods Licensing Team on (02) 4321 5500.

Yours Sincerely

Brent Jones
Senior Licensing Officer
Dangerous Goods Team

WorkCover
NEW SOUTH WALES

Our Ref: D13/008322
Your Ref: Tom Harding

05 February 2013

Attention: Tom Harding
JBS Environmental
Level 1,
50 Margaret St
Sydney NSW 2000

Dear Mr Harding,

RE SITE: Point Rd Moonee Moonee NSW

I refer to your site search request received by WorkCover NSW on 21 January 2012 requesting information on licences to keep dangerous goods for the above site.

Enclosed are copies of the documents that WorkCover NSW holds on Dangerous Goods Licences 35/005283 relating to the storage of dangerous goods at the above-mentioned premises, as listed on the Stored Chemical Information Database (SCID).

If you have any further queries please contact the Dangerous Goods Licensing Team on (02) 4321 5500.

Yours Sincerely

Brent Jones
Senior Licensing Officer
Dangerous Goods Notification Team

WorkCover New South Wales, 400 Kent Street, Sydney 2000. Tel: (02) 9370 5000 ALL MAIL TO LOCKED BAG 10. CLARENCE STREET, SYDNEY 2000
DX 13067, MARKET ST. SYDNEY

Reference

APPLICATION FOR RENEWAL
OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

WORKCOVER NEW SOUTH WALES

DECLARATION: *Please renew licence number 35/005283 to 1998. I confirm that all the licence details shown below are correct (amend if necessary).*

L A Cooper ..... LANCE COOPER 15/7/97

(Signature) *(Please print name)* *(Date signed)*

for: SCHOOL EDUCATION DEPARTMENT

*THIS **SIGNED** DECLARATION SHOULD BE **RETURNED TO:***

WorkCover New South Wales
Dangerous Goods Licensing Section (Level 3)
Locked Bag 10
P O CLARENCE STREET 2000

Enquiries: ph (02) 9370 5187
fax (02) 9370 6105

RECEIVED
24 JUL 1997
SCIENTIFIC SERVICES

Details of licence on 27 June 1997

Licence Number 35/005283 **Expiry Date** 07/08/97

Licensee SCHOOL EDUCATION DEPARTMENT
MOONEY MOONEY PUBLIC SCHOOL

Postal Address POINT RD, MOONEY MOONEY 2083

Licensee Contact ~~Dom Pirlo~~ LANCE COOPER Ph. 9985 9078 Fax. 9985 9326

Premises Licensed to Keep Dangerous Goods
POINT RD Public School
MOONEY MOONEY 2083

Nature of Site PRIMARY SCHOOLS **Major Supplier of Dangerous Goods** ELGAS

Emergency Contact for this Site ~~Dom Pirlo~~ LANCE COOPER ph. 9985 9078

Site staffing 7.5hrs 5days

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot	Qty
1	ABOVE-GROUND TANK	Class 2.1	1000 L
		UN 1075 Petroleum Gases, Liqui	1000 L

Form DG10

THE NEW SOUTH WALES GOVERNMENT
Putting people first by managing better

PART A

WorkCover Authority

LICENCE TO KEEP DANGEROUS GOODS

(Dangerous Goods Act 1975)

Application for new licence, amendment or transfer

Expiry: 7.8.94

1. Name of applicant: DEPARTMENT OF EDUCATION — ACN:

2. Site to be licensed
   No: — Street: POINT ROAD
   Suburb/Town: MOONEY MOONEY — Postcode: 2083

3. Previous licence number (if known): 005283

4. Nature of site: SCHOOL

SCIENTIFIC SERVICES BRANCH
-8 SEP 1993
DANGEROUS GOODS

5. Emergency contact on site:
   Phone: 02 9859078 — Name: IVAN CALDWELL (PRINCIPAL)

6. Site staffing: Hours per day: 7 1/2 — Days per week: 5 (M to F)

7. Major supplier of dangerous goods: ELGAS DURAL

8. If new site or significant modification
   Plan stamped by: — Accredited consultant's name: — Date stamped

DATA
14 SEP 1993
ENTERED

9. Number of dangerous goods depots at site: ONE

10. Trading name or occupier's name: MOONEY MOONEY PUBLIC SCHOOL

11. Postal address of applicant: Point Road — Suburb/Town: Mooney Mooney — Postcode: 2083

12. Contact for licence enquiries:
    Phone: 9859078 — Fax: 9859326 — Name: MR. IVAN CALDWELL

I certify that the details contained in this application (or the accompanying computer disk) are true and correct

13. Signature of applicant: IBaldwell — Date:

Please complete attached site sketch, depot listing and check sheet (if required) and return to WorkCover Authority in envelope provided.

PW15/9

Form DG1

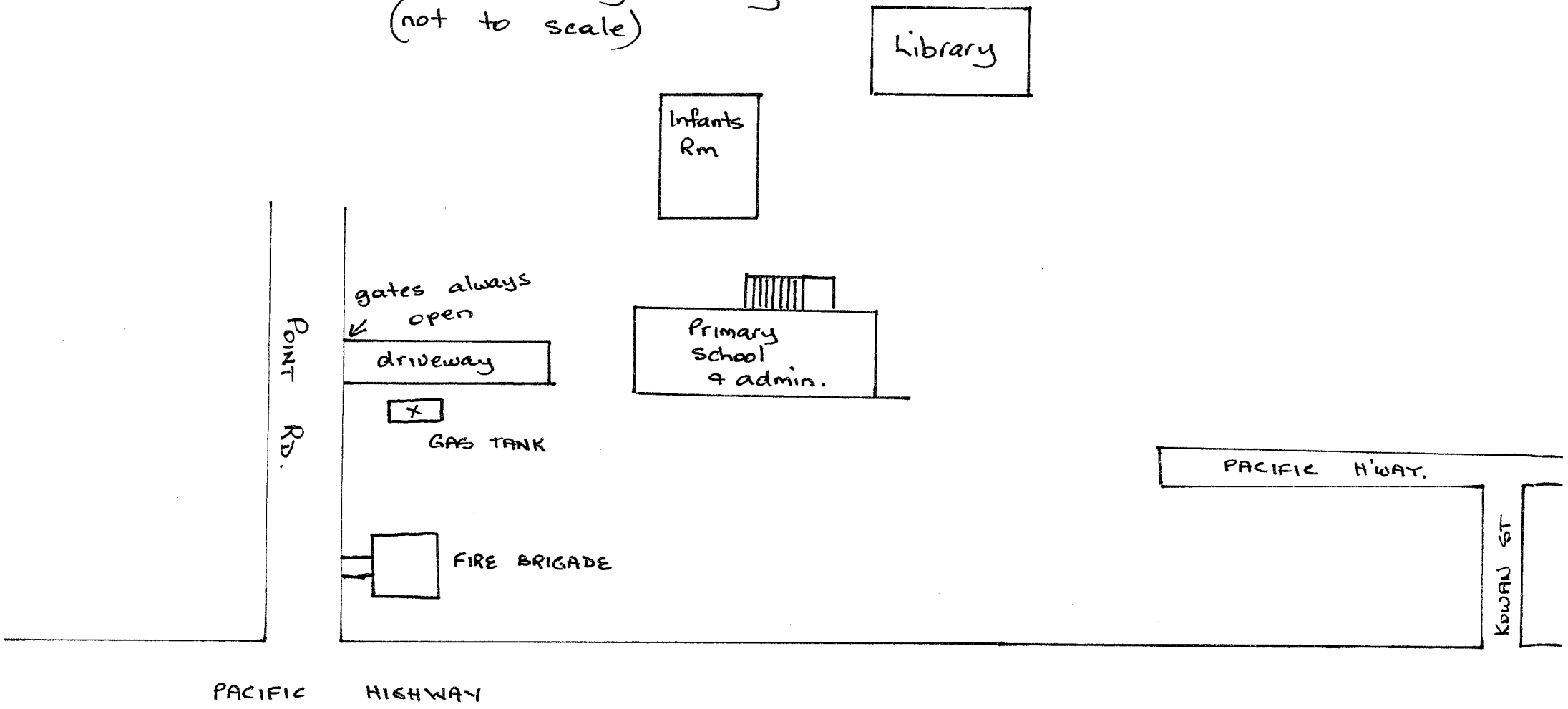
005283

35-005283

SITE PLAN

Mooney Mooney P.S.

(not to scale)



Note : Pacific H'way closed

35-005283

Complete 1 section per depot

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot number	Type of depot	Class	Licensed maximum storage capacity
1	PRESSURE VESSEL Registered Number:	21	1,000 litres

UN number	Shipping name	Class	Pkg. Group	EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³
	LPG						

Depot number	Type of depot	Class	Licensed maximum storage capacity

UN number	Shipping name	Class	Pkg. Group	EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³

Depot number	Type of depot	Class	Licensed maximum storage capacity

UN number	Shipping name	Class	Pkg. Group	EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³

Depot number	Type of depot	Class	Licensed maximum storage capacity

UN number	Shipping name	Class	Pkg. Group	EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³

Name of Occupier DEPT. OF EDUCATION
(Surname) (First Names)

Trading Name (if any) MOONEY MOONEY PUBLIC SCHOOL

Postal Address POINT ROAD MOONEY MOONEY Postcode 2254

Address of the premises in which the depot or depots are situated AS. ABOVE Postcode

Occupation

Nature of Premises SCHOOL BUILDINGS.

Particulars of construction of depots and maximum quantities of inflammable liquid and/or dangerous goods to be kept at any one time.

PLEASE SKETCH SITE ON BACK OR ATTACH PLAN

Depot No.	Construction of depots *			Inflammable Liquid		Dangerous Goods						
	Walls	Roof	Floor	Mineral spirit litres	Mineral oil litres	Class 1 litres	Class 2 litres	Class 3 kg	Class 4 m^3	Class 5A# litres	Class 5B# litres	Class 9 litres
1	ABOVE	GROUND	TANK							1-10 KL		
2												
3												
4												
5												
6												
7												
8												
9												
10												
TOTAL												

NO FEE
10·8·76
Rec No. 2835

* If kept in tanks describe depots as underground or aboveground tanks.

\# Insert water capacity of tanks or cylinders.

Name of Company supplying inflammable liquid PORTA GAS. P/LTD

Have premises previously been licensed? NO.

If known, state name of previous occupier

Signature of applicant Jackson Date 2.10.75

CERTIFICATE OF INSPECTION

I, George E. Brooks being an Inspector under the Inflammable Liquid Act, 1915, do hereby certify that the premises or store described above does comply with the requirements of that Act and regulations with regard to its situation and construction for the keeping of inflammable liquid and/or dangerous goods in quantity and nature specified.

Signature of Inspector G Brooks

Date 12-4-77

P.T.O.

INSPECTION RECORD

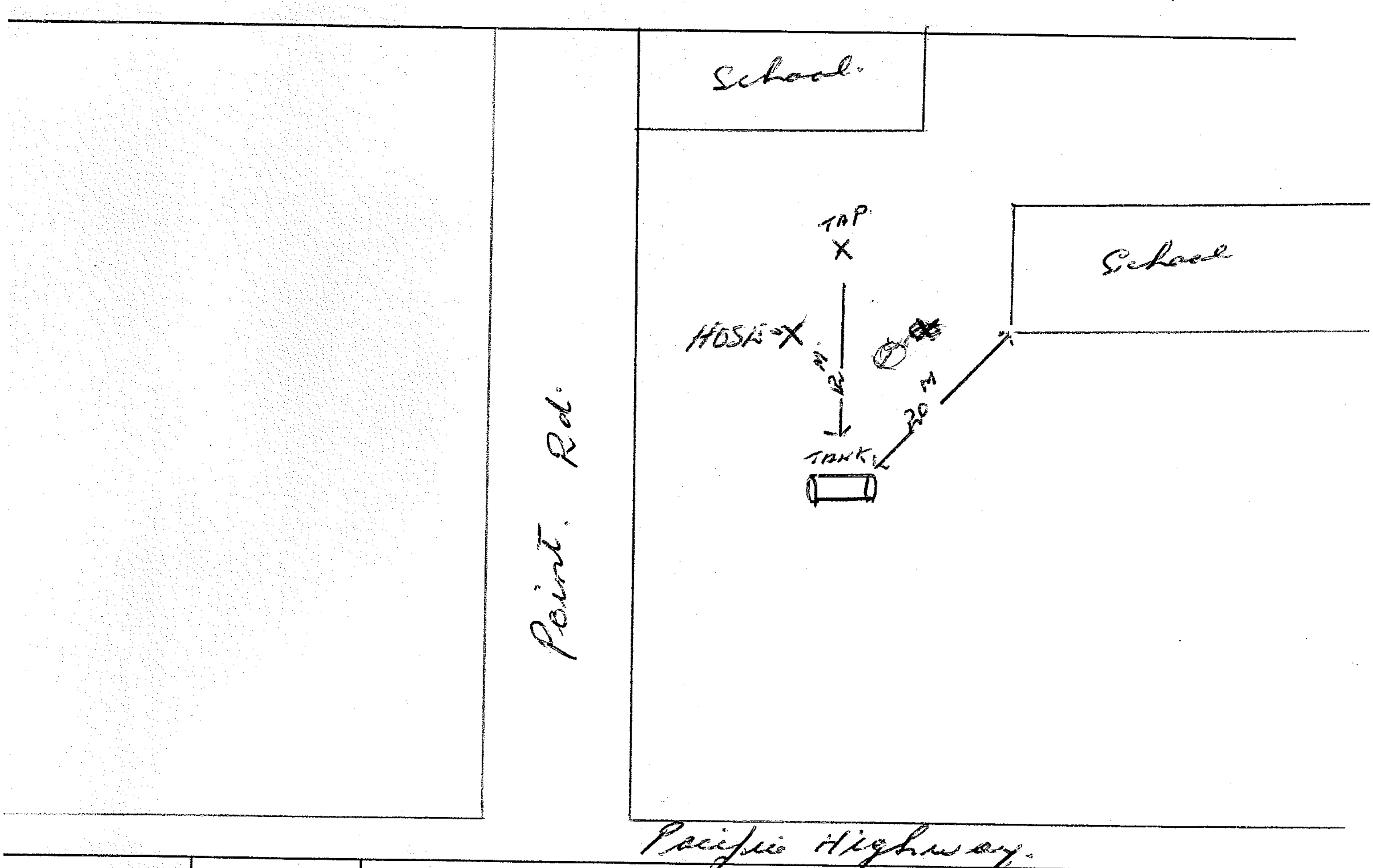
Licence No. 5283

Licensee: Department of Education
Public works dept.

Address: POINT. RD. MOONEY. MOONEY.

Storage licensed: L-P- gas. Tank. 1/1-10. K.L.

Sketch of Premises (Dimensions of depot and distance of same from adjoining "protected works" to be shown).



Inspected	Initials	Requisitions made or state of depot
30.3.76.	H. Conway	Red diamond Sign required
12.4-77	[illegible]	Sat.
8.8.78	[illegible]	Sat
12.5.78	[illegible]	Sat

WorkCover
NEW SOUTH WALES

Our Ref: D13/008322
Your Ref: Tom Harding

05 February 2013

Attention: Tom Harding
JBS Environmental
Level 1,
50 Margaret St
Sydney NSW 2000

Dear Mr Harding,

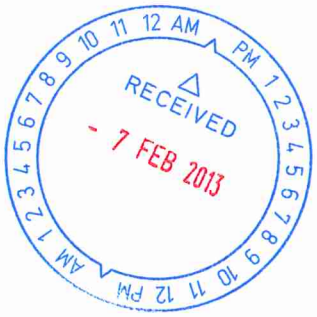
RE SITE: Peat Island NSW

I refer to your site search request received by WorkCover NSW on 21 January 2012 requesting information on licences to keep dangerous goods for the above site.

Enclosed are copies of the documents that WorkCover NSW holds on Dangerous Goods Licences 35/002836 & 35/009142 relating to the storage of dangerous goods at the above-mentioned premises, as listed on the Stored Chemical Information Database (SCID).

If you have any further queries please contact the Dangerous Goods Licensing Team on (02) 4321 5500.

Yours Sincerely



Brent Jones
Senior Licensing Officer
Dangerous Goods Notification Team

ngerous Goods

GB2

,cation for: New Licence ☐ Amendment ☒ Transfer ☐ Renewal of expired licence ☐

RT A - *Applicant and site information* (See page 2 of Guidance Notes)

Name of applicant | ACN

DEPARTMENT OF AGEING, DISABILITY AND HOME CARE

Postal Address of Applicant | Suburb/Town | Postcode

PEAT IS. CENTRE; C/- POST OFFICE; BROOKLYN NSW 2083

Trading Name or Site Occupier's Name

PEAT ISLAND CENTRE

Contact for Licence Inquiries

Phone | Fax | Name

99850111 | 99850133 | RON MCKELVIE (DIRECTOR OF NURSING)

Previous Licence Number (if known) 35/009142 & 35/002836

Previous Occupier (if known)

Site to be Licensed

Unit / No | Street | Suburb / Town

PACIFIC HIGHWAY | MOONEY MOONEY

Nearest Cross Street KOWAN ST

Main Business of Site DISABILITY ACCOMODATION SERVICE

Site staffing: Hours per day 24 Days per week 7

Site Emergency Contact

Phone | Name

99850109 DUTY ASSIST'T DIRECTOR OF NURSING

Major Supplier of Dangerous Goods VARIOUS

a new site or for amendments to depots - see page 4 of Guidance Notes.

Plans Stamped by: | Signature of Competent Person | Printed Name | Date stamped

R. W. McKenzie | R W MCKENZIE | 21/12/2005

fy that the details in this application (including any accompanying computer disk) are correct and cover all able quantities of dangerous goods kept on the premises.

Signature of Applicant | Printed Name

RON MCKELVIE

Please send your application marked Confidential to: Dangerous Goods Licensing, WorkCover NSW, Locked Bag 2906, LISAROW NSW 2252

Hotline (02) 4321 5500 Fax (02) 4927 5580

TC DANGEROUS GOODS STORAGE

DEPOT NO	Type of Depot	Depot Class	Maximum Storage Capacity
42	Above Ground Tank	2	1250 Litres

UN Number	Proper Shipping Name	Class	PG (I,II,III)	Product or Common Name	Typical Quantity	Unit. Eg. L,kg,m³
1075	Petroleum Gases Liquified	2.1		LPG	1000	L

Depot No	Type of Depot	Depot Class	Maximum Storage Capacity
43	Above Ground Tank	2	2200 Litres

UN Number	Proper Shipping Name	Class	PG (I,II,III)	Product or Common Name	Typical Quantity	Unit. Eg. L,kg,m³
1075	Petroleum Gases Liquified	2.1		LPG	2000	L

Depot No	Type of Depot	Depot Class	Maximum Storage Capacity
44a	Above Ground Tank	2	2800 Litres

UN Number	Proper Shipping Name	Class	PG (I,II,III)	Product or Common Name	Typical Quantity	Unit. Eg. L,kg,m³
1075	Petroleum Gases Liquified	2.1		LPG	2200	L

Depot No	Type of Depot	Depot Class	Maximum Storage Capacity
44b	Above Ground Tank	2	2200Litres

UN Number	Proper Shipping Name	Class	PG (I,II,III)	Product or Common Name	Typical Quantity	Unit. Eg. L,kg,m³
1075	Petroleum Gases Liquified	2.1		LPG	2000	L

Depot 45a is not in use. (WorkCover has been informed) Waiting for quotations to decommission the tank in accordance with WorkCover requirements.

Depot No	Type of Depot	Depot Class	Maximum Storage Capacity
45a	Underground Tank	3	5250 Litres

UN Number	Proper Shipping Name	Class	PG (I,II,III)	Product or Common Name	Typical Quantity	Unit. Eg. L,kg,m³
1203	Motor spirit	3	II	Petrol	2250	L

Depot 45b is not in use. (WorkCover has been informed) Waiting for quotations to decommission the tank in accordance with WorkCover requirements.

Depot No	Type of Depot	Depot Class	Maximum Storage Capacity
45b	Underground Tank	3	2250 Litres

UN Number	Proper Shipping Name	Class	PG (I,II,III)	Product or Common Name	Typical Quantity	Unit. Eg. L,kg,m³
1203	Motor spirit	3	II	Petrol	2250	L

Depot No	Type of Depot	Depot Class	Maximum Storage Capacity
23	Cylinders in use	2	140kg

UN Number	Proper Shipping Name	Class	PG (I,II,III)	Product or Common Name	Typical Quantity	Unit. Eg. L,kg,m³
1017	Chlorine	2.3		Compressed Chlorine Gas	140	kg

ARTC DANGEROUS GOODS STORAGE

Scid Reference only. Tank is to be decommissioned & removed from site

DEPOT NO	Type of Depot	Depot Class	Maximum Storage Capacity
4a	Above Ground tank	C1	4000 L

UN Number	Proper Shipping Name	Class	PG (I,II,III)	Product or Common Name	Typical Quantity	Unit. Eg. L,kg,m^3
1202	Diesel fuel	C1		Diesel Fuel	2000	L

Scid Reference only. Tank is to be decommissioned & removed from site

DEPOT NO	Type of Depot	Depot Class	Maximum Storage Capacity
A2 4	Above Ground tank	C1	500L

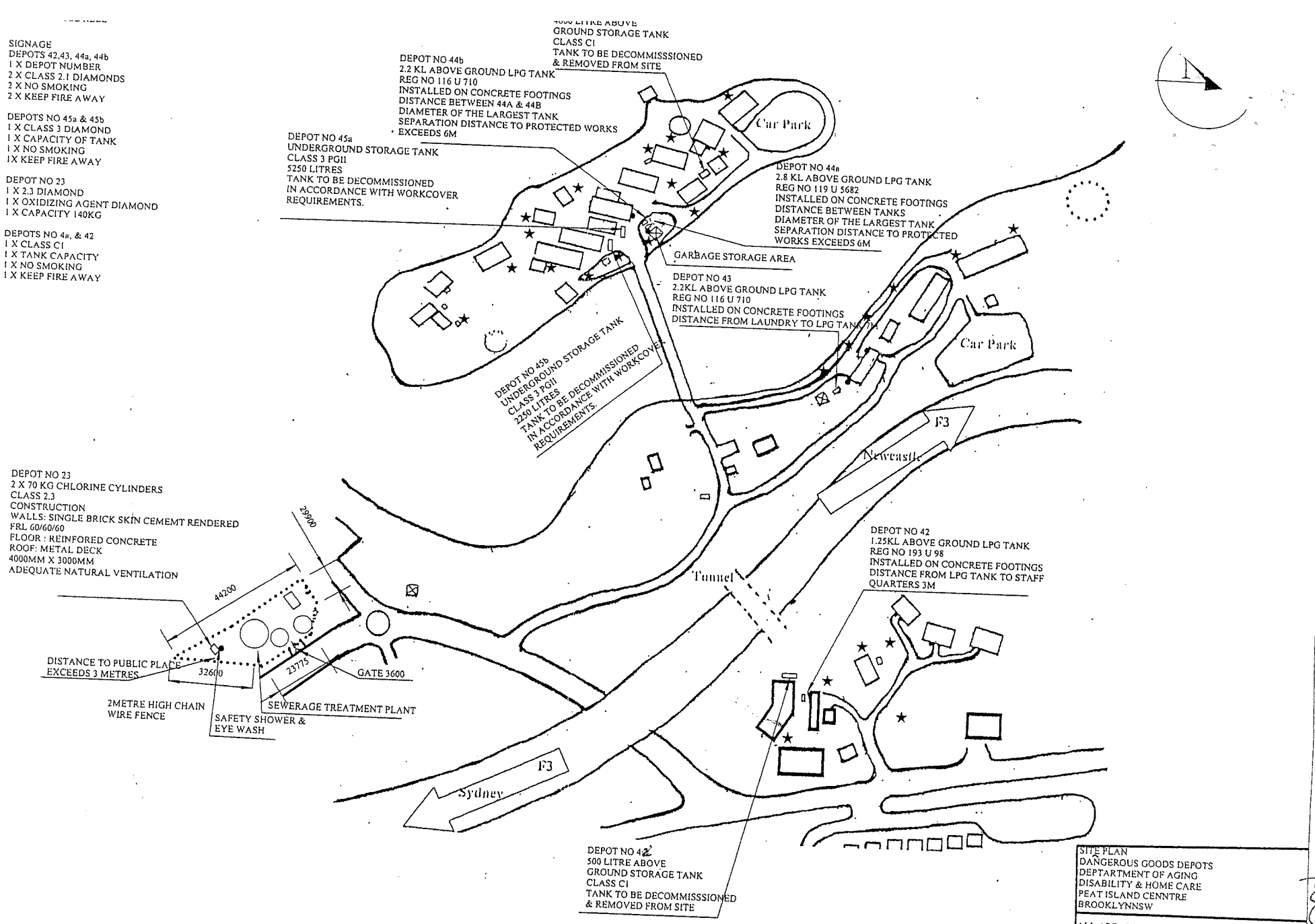
UN Number	Proper Shipping Name	Class	PG (I,II,III)	Product or Common Name	Typical Quantity	Unit. Eg. L,kg,m^3
1202	Above Ground Tank	C1		Heating Oil	500	L

SIGNAGE
DEPOTS 42,43, 44a, 44b
1 X DEPOT NUMBER
2 X CLASS 2.1 DIAMONDS
2 X NO SMOKING
2 X KEEP FIRE AWAY

DEPOTS NO 45a & 45b
1 X CLASS 3 DIAMOND
1 X CAPACITY OF TANK
1 X NO SMOKING
1X KEEP FIRE AWAY

DEPOT NO 23
1 X 2.3 DIAMOND
1 X OXIDIZING AGENT DIAMOND
1 X CAPACITY 140KG

DEPOTS NO 4a, & 42
1 X CLASS C1
1 X TANK CAPACITY
1 X NO SMOKING
1 X KEEP FIRE AWAY



SITE PLAN
DANGEROUS GOODS DEPOTS
DEPTARTMENT OF AGING
DISABILITY & HOME CARE
PEAT ISLAND CENNTRE
BROOKLYNNSW

ALL AREAS DANGEROUS GOODS CONSULTANTS
50 PLEASANT AVENUE
LINDFIELD NSW 2070
P O BOX 313 LINDFIELD NSW 2070
TEL 9415 8061 FAX 9415 8561

DRAWN R. W. MC KENZIE NTS 20/12/03

55/00942

35/002836
+ 35/009142

Department of Ageing, Disability & Home Care

WorkCover NSW
Dangerous Goods
Licencing

30th September 2003

Dear Sir/Madam,

Re: Peat Island Centre, Brooklyn; Application for Storage of Dangerous Goods on Site [lic. No. 35/002836].

Please find enclosed application as above.

The Centre has had an existing licence for the storage of LPG and petrol on site to date. However the underground petrol storage tanks are in the process of being decommissioned and the storage of liquid chlorine has not previously been identified.

This being the case, I am seeking to include the Liquid Chlorine Gas and maintain the LPG licence as previously. I have been guided through this process by Mr Graeme Aldred [A WorkCover Snr. Safety Inspector], who inspected the site and recommended all goods be identified under the licence No. 35/0028361 and delete 35/002836.

I trust this application meets the necessary requirements and look forward to your response.
Sincerely,

ph 4921. 2922

9/10/03

Ron McKelvie
[Acting] Director of Nursing
Peat Island Centre

ordered 35/002836/009142
29/10/03 3.30pm.

Peat Island Centre, Brooklyn NSW 2083 **Phone** (02) 99850111
Fax (02) 99850133 **DX** 99613

Licence No. 35/009142

APPLICATION FOR RENEWAL

OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

DECLARATION: Please renew licence number 35/009142 to 16/08/2004 . I confirm that all the licence details shown below are correct (amend if necessary).

Colleen Jupp (Signature) for: COMMUNITY SERVICES DEPT

COLLEEN JUPP (Please print name)

5-8-03 (Date signed)

*THIS **SIGNED** DECLARATION SHOULD BE **RETURNED TO:***

WorkCover New South Wales
Dangerous Goods Licensing Section
LOCKED BAG 2906
LISAROW NSW 2252

Enquiries:ph (02) 43215500
fax (02) 92875500

Details of licence on 4 July 2003

Licence Number 35/009142 **Expiry Date** 16/08/2003

Licensee COMMUNITY SERVICES DEPT PEAT ISLAND CTR

Postal Address: PEAT ISLAND CTR C/ POST OFFICE BROOKLYN NSW 2083

Licensee Contact COLLEEN JUPP Ph. 9985 0111 Fax. 9985 0133

Premises Licensed to Keep Dangerous Goods NURSES QUARTERS - EASTERN SIDE
COMMUNITY SERVICES DEPT PEAT ISLAND CTR
PACIFIC HWY MOONEY MOONEY 2083

Nature of Site PSYCHIATRIC HOSPITALS

Major Supplier of Dangerous Goods VARIOUS

Emergency Contact for this Site DIRECTOR OF NURSING Ph. 985 0111

Site staffing 24HRS 7DAYS

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot		Qty
41	**EXEMPT - STORAGE AREA**	**Class 3**	**205 L**	
	UN 1300 TURPENTINE SUBSTITUTE			205 L
42	**ABOVE-GROUND TANK**	**Class 2.1**	**1250 L**	
	UN 1075 PETROLEUM GASES, LIQUEFIED			1000 L

WorkCover New South Wales, 400 Kent Street. Sydney 2000. Tel: (02) 9370 5000 ALL MAIL TO LOCKED BAG 10. CLARENCE STREET, SYDNEY 2000

Reference 35/009142

DX 13067, MARKET ST. SYDNEY

WORKCOVER NEW SOUTH WALES

** REMINDER NOTICE **

APPLICATION FOR RENEWAL

OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

DECLARATION: *Please renew licence number 35/009142 to 1997/98. I confirm that all the licence details shown below are correct (amend if necessary).*

Colleen Jupp ..... COLLEEN JUPP 20-8-97

(Signature) *(Please print name)* *(Date signed)*

for: COMMUNITY SERVICES DEPT

*THIS **SIGNED** DECLARATION SHOULD BE **RETURNED TO:***

WorkCover New South Wales
Dangerous Goods Licensing Section (Level 3)
Locked Bag 10
P O CLARENCE STREET 2000

Enquiries: ph (02) 9370 5187
fax (02) 9370 6105

Please renew three

DATA
10 NOV 1997
ENTERED

Details of licence on 7 August 1997

Licence Number 35/009142 **Expiry Date** 17/08/96

Licensee COMMUNITY SERVICES DEPT
PEAT ISLAND CTR

Postal Address C/ POST OFFICE, BROOKLYN 2083

Licensee Contact Colleen Jupp Lance Cox Ph. 985 0111 Fax 985 0133

Premises Licensed to Keep Dangerous Goods
PACIFIC HWY Nurses Quarters - Eastern Side
MOONEY MOONEY 2083

Nature of Site PSYCHIATRIC HOSPITALS **Major Supplier of Dangerous Goods** VARIOUS

Emergency Contact for this Site Director of Nursing ph. 985 0111

Site staffing 24hrs 7days

Jenny 10/11/97

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot	Qty
41	Exempt - Storage area	Class 3 UN 1300 MINERAL TURPENTINE [AU	205 L 205 L
42	ABOVE-GROUND TANK	Class 2.1 UN 1075 PETROLEUM GASES, LIQUE	1250 L 1000 L

Form DG10

THE NEW SOUTH WALES GOVERNMENT
Putting people first by managing better

checked NT

SCIENTIFIC SERVICES BRANCH
17 AUG 1993
DANGEROUS GOODS

PART A

WORKCOVER AUTHORITY

LICENCE TO KEEP DANGEROUS GOODS

(Dangerous Goods Act 1975)

Application for new licence, amendment or transfer

Expiry: 17.8.95

1. Name of applicant: PEAT ISLAND CENTRE (DEPT OF COMMUNITY SERVICES)
   ACN: N/A

2. Site to be licensed
   No:
   Street: PACIFIC HIGHWAY
   Suburb/Town: MOONEY MOONEY
   Postcode: 2083

3. Previous licence number (if known): N/K. 35/009142 for no. 41 & 42 + 43 except

4. Nature of site: RESIDENTIAL FACILITY FOR INTELLECTUAL HANDICAPPED PERSON

   (35-00 2836 for others)

5. Emergency contact on site:
   Phone: 985.0111
   Name: DIRECTOR OF NURSING OR DUTY ASSIST DIRECTOR OF NURSING

6. Site staffing: Hours per day: 24 Days per week: 7

7. Major supplier of dangerous goods: VARIOUS

8. If new site or significant modification
   Plan stamped by: Accredited consultant's name: Date stamped:

DATA
17 JUL 1995
ENTERED

9. Number of dangerous goods depots at site:

10. Trading name or occupier's name: AS ABOVE

11. Postal address of applicant: POST OFFICE
    Suburb/Town: BROOKLYN
    Postcode: 2083

12. Contact for licence enquiries:
    Phone: 985.0111
    Fax: 985 0133
    Name: LANCE COX (SECRETARY)

I certify that the details contained in this application (or the accompanying computer disk) are true and correct

13. Signature of applicant: [signature]
    Date: 12/8/93

JUL 1995

Please complete attached site sketch, depot listing and check sheet (if required) and return to WorkCover Authority in envelope provided.

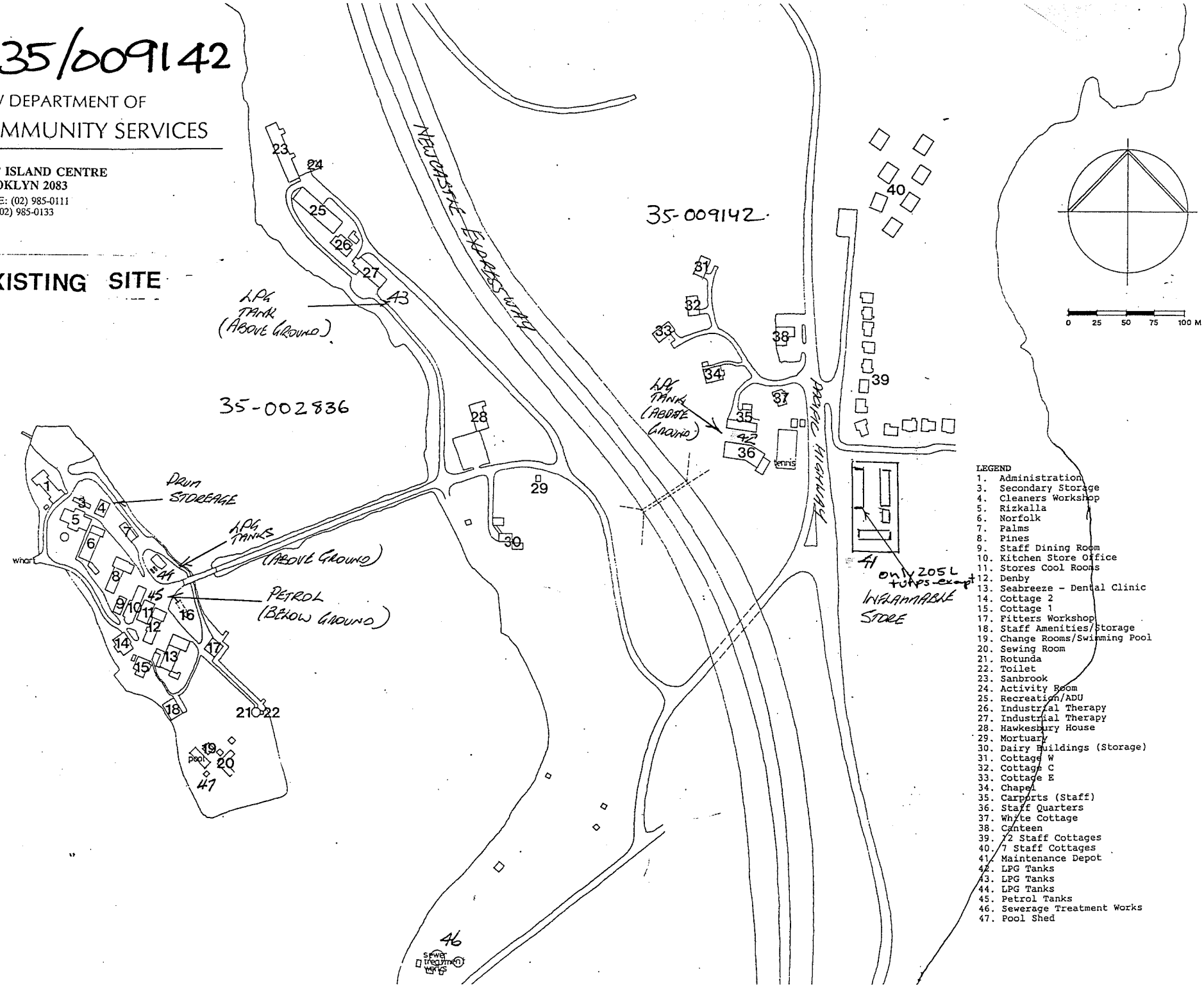
Form DG1

35/009142

NSW DEPARTMENT OF
COMMUNITY SERVICES

PEAT ISLAND CENTRE
BROOKLYN 2083
PHONE: (02) 985-0111
FAX: (02) 985-0133

EXISTING SITE



LEGEND
1. Administration
3. Secondary Storage
4. Cleaners Workshop
5. Rizkalla
6. Norfolk
7. Palms
8. Pines
9. Staff Dining Room
10. Kitchen Store Office
11. Stores Cool Rooms
12. Denby
13. Seabreeze - Dental Clinic
14. Cottage 2
15. Cottage 1
17. Fitters Workshop
18. Staff Amenities/Storage
19. Change Rooms/Swimming Pool
20. Sewing Room
21. Rotunda
22. Toilet
23. Sanbrook
24. Activity Room
25. Recreation/ADU
26. Industrial Therapy
27. Industrial Therapy
28. Hawkesbury House
29. Mortuary
30. Dairy Buildings (Storage)
31. Cottage W
32. Cottage C
33. Cottage E
34. Chapel
35. Carports (Staff)
36. Staff Quarters
37. White Cottage
38. Canteen
39. 12 Staff Cottages
40. 7 Staff Cottages
41. Maintenance Depot
42. LPG Tanks
43. LPG Tanks
44. LPG Tanks
45. Petrol Tanks
46. Sewerage Treatment Works
47. Pool Shed

Name of Occupier The Health Commission of N.S.W.
(Surname) (First Names)

Trading Name (if any) Peat Island Nurses Home

Postal Address Post Office
Brooklyn
Postcode 2253

Address of the premises in which the depot or depots are situated Pacific Hway
Mooney Mooney
Postcode

Occupation Govt Dept

Nature of Premises Nurses Home

Particulars of construction of depots and maximum quantities of inflammable liquid and/or dangerous goods to be kept at any one time.

PLEASE SKETCH SITE ON BACK OR ATTACH PLAN

Depot No.	Construction of depots *			Inflammable Liquid		Dangerous Goods						
	Walls	Roof	Floor	Mineral spirit litres	Mineral oil litres	Class 1 litres	Class 2 litres	Class 3 kg	Class 4 m^3	Class 5A# litres	Class 5B# litres	Class 9 litres
1	Aboveground Tank									1250		
2												
3												
4												
5												
6												
7												
8												
9												
10												
TOTAL												

PUBLIC REVENUE A/c
No Fee
1.3.76 (Date)
Receipt No. 4146

* If kept in tanks describe depots as underground or aboveground tanks.

\# Insert water capacity of tanks or cylinders.

Name of Company supplying inflammable liquid

Have premises previously been licensed?

If known, state name of previous occupier

Signature of applicant [signature] Date 20.2.76

CERTIFICATE OF INSPECTION

I, E. C. Charles Tawes being an Inspector under the Inflammable Liquid Act, 1915, do hereby certify that the premises or store described above does comply with the requirements of that Act and regulations with regard to its situation and construction for the keeping of inflammable liquid and/or dangerous goods in quantity and nature specified.

Signature of Inspector E. Tawes

Date 25.5.76

P.T.O.

80×65

WorkCover New South Wales, 400 Kent Street, Sydney 2000. Tel: 9370 5000 Fax: 9370 5999 ALL MAIL TO G.P.O. BOX 5364 SYDNEY 2001

Licence No: 35/002836

WorkCover NEW SOUTH WALES

APPLICATION FOR RENEWAL
OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

DECLARATION: Please renew licence number 35/002836 to 16/08/2001 . I confirm that all the licence details shown below are correct (amend if necessary).

W. Learmonth	N. LEARMOUTH	10/8/00
(Signature)	*(Please print name)*	*(Date signed)*

for: COMMUNITY SERVICES DEPT

*THIS **SIGNED** DECLARATION SHOULD BE **RETURNED** TO:* **(please do not fax)**

WorkCover New South Wales
Dangerous Goods Licensing Section
GPO BOX 5364
SYDNEY 2001

Enquiries: **ph (02) 9370 5187**
fax (02) 9370 6104

Details of licence on 27 June 2000

Licence Number 35/002836 **Expiry Date** 16/08/2000

Licensee COMMUNITY SERVICES DEPT
PEAT ISLAND CTR

Postal Address: PEAT ISLAND CTR C/ POST OFFICE BROOKLYN NSW 2083

Licensee Contact COLLEEN JUPP Ph. 9985 0111 Fax. 9985 0133

Premises Licensed to Keep Dangerous Goods PEAT ISLAND OFF HWY
COMMUNITY SERVICES DEPT PEAT ISLAND CTR
PACIFIC HWY BROOKLYN 2083

Nature of Site PSYCHIATRIC HOSPITALS

Major Supplier of Dangerous Goods NOT APPLICABLE

Emergency Contact for this Site DIRECTOR OF NURSING OR ASSIST. Ph. 985 0111

Site staffing 24HRS 7DAYS

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot	Qty
44a	**ABOVE-GROUND TANK**	**Class 2.1**	**2450 L**
		UN 1075 PETROLEUM GASES, LIQUEFIED	1000 L
44b	**ABOVE-GROUND TANK**	**Class 2.1**	**3125 L**
		UN 1075 PETROLEUM GASES, LIQUEFIED	1500 L
45a	**UNDERGROUND TANK**	**Class 3**	**5250 L**
		UN 1203 PETROL	5250 L
45b	**UNDERGROUND TANK**	**Class 3**	**2250 L**
		UN 1203 PETROL	2250 L
4a	**ROOFED STORE**	**Class 8**	**500 L**
		UN 1791 HYPOCHLORITE SOLUTION	250 L
		UN 1824 SODIUM HYDROXIDE SOLUTION	250 L

Form DG10

WorkCover New South Wales, 400 Kent Street, Sydney 2000. Tel: (02) 9370 5000 ALL MAIL TO LOCKED BAG 10, CLARENCE STREET, SYDNEY 2000
DX 13067, MARKET ST. SYDNEY

WORKCOVER NEW SOUTH WALES

Reference

APPLICATION FOR RENEWAL

OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

DECLARATION: *Please renew licence number 35/002836 to 1998. I confirm that all the licence details shown below are correct (amend if necessary).*

Colleen Jupp ..... COLLEEN JUPP 20-8-97

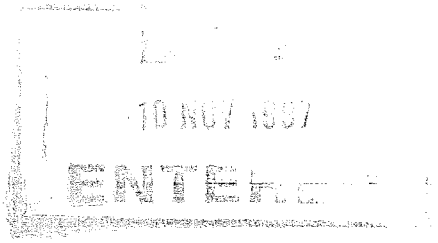
(Signature) *(Please print name)* *(Date signed)*

for: COMMUNITY SERVICES DEPT

*THIS **SIGNED** DECLARATION SHOULD BE **RETURNED TO:***

WorkCover New South Wales
Dangerous Goods Licensing Section (Level 3)
Locked Bag 10
P O CLARENCE STREET 2000

Enquiries: ph (02) 9370 5187
fax (02) 9370 6105



Details of licence on 11 July 1997

Licence Number 35/002836 **Expiry Date** 17/08/97

Licensee COMMUNITY SERVICES DEPT
PEAT ISLAND CTR

Postal Address C/ POST OFFICE, BROOKLYN 2083

Licensee Contact ~~Lance Cox Ph. 985 0111 Fax. 985 0133~~ Colleen Jupp 998-0111 9985-0133

Premises Licensed to Keep Dangerous Goods
PACIFIC HWY Peat Island off Hwy
BROOKLYN 2083

Nature of Site PSYCHIATRIC HOSPITALS **Major Supplier of Dangerous Goods** NOT APPLICABLE

Emergency Contact for this Site Director of Nursing or Assist. ph. 985 0111

Site staffing 24hrs 7days

10/11/97

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot	Qty
44a	ABOVE-GROUND TANK	Class 2.1	2450 L
		UN 1075 PETROLEUM GASES, LIQUE	1000 L
44b	ABOVE-GROUND TANK	Class 2.1	3125 L
		UN 1075 PETROLEUM GASES, LIQUE	1500 L
45a	UNDERGROUND TANK	Class 3	5250 L
		UN 1203 PETROL	5250 L
45b	UNDERGROUND TANK	Class 3	2250 L
		UN 1203 PETROL	2250 L
4a	ROOFED STORE	Class 8	500 L
		UN 1824 SODIUM HYDROXIDE SOLUT	250 L
		UN 1791 Sodium hypochlorite so	250 L

Application is hereby made for—
*a licence (or amendment of the licence)
*the transfer of the licence
for the keeping of dangerous goods in or on the premises described below.

(*delete whichever is not required)

FEE: $10.00 per Depot for new licence.
$10.00 for amendment or transfer.

Name of Applicant in full (see over)	HEALTH DEPT.
Trading name or occupier's name (if any)	
Postal address	"PEAT ISLAND HOSPITAL" BROOKLYN Postcode 2253
Address of the premises including street number (if any)	Postcode
Nature of premises (see over)	
Telephone number of applicant	STD Code 02 Number 45522911

Particulars of type of depots and maximum quantities of dangerous goods to be kept at any one time.

Depot number	Type of depot (see over)	Storage capacity	Dangerous goods: Product being stored	C & C Office use only
1	Roofed Package Store	650	3.1 3.2 3.3	
2	Underground Tank	5450	3.1 Petrol	
3	" "	2500	3.1 "	
4	Aboveground tank	3125	2.1 L.P.G	
5	" "	2450	2.1 "	
6	Cylinder Store	1400	2.3 Chlorine Gas	
7	Aboveground tank	2500	2.1 L.P.G	
8	~~Aboveground Tank~~	2x9	2.1 LPG	
9				
10		Tube amended		
11				
12				

19/7/84

Has site plan been approved? Yes / ~~No~~ If yes, no plans required. If no, please attach site plan.

Have premises previously been licensed? Yes / ~~No~~ If yes, state name of previous occupier. HEALTH DEPT.

Name of company supplying flammable liquid (if any) B.P

* Signature of applicant ..... Date 2/6/84

For external explosives magazine(s), please fill in side 2.

FOR OFFICE USE ONLY

CERTIFICATE OF INSPECTION

I, being an Inspector under the Dangerous Goods Act, 1975, do hereby certify that the premises described above do comply with the requirements of the Dangerous Goods Act, 1975, and the Dangerous Goods Regulation with regard to their situation and construction for the keeping of dangerous goods of the nature and in the quantity specified.

Signature of Inspector ..... Date .....

Licence No. 35-002836-4

premises described below. the transfer of the licence

(*delete whichever is not required)

FEE: $10.00 per Depot

Name of Applicant in full (see over)	Surname Health Commission of N.S.W. Given Names
Trading name or occupier's name (if any)	Peat Island Hospital
Postal address	P.O. Brooklyn Postcode 2253
Telephone number of applicant	STD Code Number
Address of the premises in or on which the depot or depots are situated (including street number, if any)	Peat Island. Mooney Mooney Postcode
Nature of premises (see over)	Hospital

PLEASE ATTACH SITE PLAN

Particulars of type of depots and maximum quantities of dangerous goods to be kept at any one time.

Depot number	Type of depot (see over)	Storage capacity	Dangerous goods: Product being stored	C & C Office use only
1	Package Store	650	P.G3.	6.020.72
2	Underground Tank	5450	✓	2.020.53
3	✓ ✓	2500	✓	2.020.33
4	Aboveground ✓	3125	L.P.G	1.100.33
5	✓ ✓	2450	✓	1.100.23
6	Cylinders	140 Kg	Chlorine	7.040.12
7				
8				
9				
10				
11				
12				

Name of company supplying flammable liquid (if any) B.P.

Have premises previously been licensed? Yes

If known, state name of previous occupier Licence No. 7836

Signature of applicant W. Murdoch Date 8.8.78

For external explosives magazine(s), please fill in side 2.

FOR OFFICE USE ONLY

CERTIFICATE OF INSPECTION

I, William A. Murdoch being an Inspector under the Dangerous Goods Ac 1975, do hereby certify that the premises described above do comply with the requirements of the Dangerous Goods Ac 1975, and the Dangerous Goods Regulation with regard to their situation and construction for the keeping of dangero goods of the nature and in the quantity specified.

3.5.79. Signature of Inspector W. Murdoch

	(Surname)	(First Names)
rading Name (if any)	Peat Island Hospital	
ɔstal Address	Brooklyn	Postcode 2253
ddress of the emises in which the pot or depots are tuated	Peat Island Brooklyn	2253 Postcode
ccupation	Mental Retard Hospital	
ature of Premises	Hospital.	

rticulars of construction of depots and maximum quantities of inflammable liquid and/or dangerous goods to be kept any one time.

~~PLEASE SKETCH SITE ON BACK OR ATTACH PLAN~~

ank or epot umber	Construction of depots *			Inflammable Liquid		Dangerous Goods						
	Walls	Roof	Floor	Mineral spirit litres	Mineral oil litres	Class 1 litres	Class 2 litres	Class 3 kg	Class 4 m^3	Class 5A# litres	Class 5B# litres	Class 9 litres
1	Brick	Concrete	Concrete		650							
2	Underground		Tank	5450								
3	✓		✓	2500								
4	Aboveground		✓							3125		
5	✓		✓							2450		
6	✓		✓							1250 (Cylinders)		No 9142
7												
8												
9												
10										NO	FEE	
	TOTAL									Date	2/11/77	

* If kept in tanks describe depots as underground or aboveground tanks. Receipt No. 1711

\# Insert water capacity of tanks or cylinders.

lame of Company supplying inflammable liquid _____

lave premises previously been licensed? Yes Licence No. 2836-?

known, state name of previous occupier _____

Signature of applicant M. A. Wilson
MAINT. SUPERVISOR Date 31-10-77

CERTIFICATE OF INSPECTION

William C. Macleod being an Inspector under the flammable Liquid Act, 1915, do hereby certify that the premises or store described above does comply with the quirements of that Act and regulations with regard to its situation and construction for the keeping of inflammable quid and/or dangerous goods in quantity and nature specified.

Signature of Inspector C. Macleod
Date 31-10-77

xplosives Branch,
89–193 Kent Street,
ydney.
Box R. 216, P.O., Royal Exchange,
ydney, N.S.W. 2000)

P.T.O.

FORM B. No Fee Register No. .....

INFLAMMABLE LIQUID ACT, 1915-1946.

Application for ~~Registration of Premises or Store License under Division~~ Store License A ..... or for the transfer, alteration or amendment of any such Registration or License, for the keeping of Inflammable Liquid and/or Dangerous Goods, in accordance with the provisions of the Inflammable Liquid Act, 1915-46, for the ensuing year.

EXPLANATORY.

Inflammable Liquid—

Mineral Oil—includes kerosene, mineral turpentine and white spirit (for cleaning), and compositions containing same.

Mineral Spirit—includes petrol, benzine, benzolene, benzol and naphtha, and compositions containing same.

Dangerous Goods—

Class 1.—Acetone, amyl acetate, butyl acetate, carbon bisulphide ; any combination of substances of an inflammable character suitable for use as an industrial solvent and having a true flashing point of less than 73 degrees Fahrenheit.

Class 2.—Nitro-cellulose (also known as "pyroxylin" and "collodion cotton") moistened with an alcohol, butyl alcohol (also known as "butanol"), methylated spirits, vegetable turpentine ; and any liquid or solid containing methylated spirits, having a true flashing point of less than 150 degrees Fahrenheit.

Class 3.—Nitro-cellulose product.

Class 4.—Compressed or dissolved acetylene contained in a porous substance.

DIRECTIONS.

1. Applications must be forwarded to the Chief Inspector of Inflammable Liquid, Explosives Department, Department of Mines, Bridge-street, Sydney, and must be accompanied by the prescribed fee, as set out hereunder :—

Registration of Premises (Fee, 10s. p.a.).—For quantities not exceeding 300 gallons of mineral oil and 100 gallons of mineral spirit, if kept together ; or 800 gallons of mineral oil and 100 gallons of mineral spirit, if kept in separate depots ; or 500 gallons of mineral spirit, if kept in an underground tank depot ; or 800 gallons of mineral oil and 500 gallons of mineral spirit, if mineral spirit is kept in an underground tank depot.

In addition to, or in lieu of the above, similar quantities of Dangerous Goods of Classes 1 and 2 may be kept under the like conditions ; reading Dangerous Goods of Class 1 for the words Mineral Spirit and Dangerous Goods of Class 2 for the words Mineral Oil.

Store License, Div. A (Fee, £1. p.a.).—For quantities in excess of those stated above, but not exceeding 4,000 gallons mineral oil and/or mineral spirit, and/or Dangerous Goods of Classes 1 and 2.

Store License, Div. B (Fee, £2. p.a.).—For quantities exceeding 4,000 gallons of mineral oil and/or mineral spirit, and/or dangerous goods of Classes 1 and 2, and/or dangerous goods of Class 3.

For the keeping of Dangerous Goods of Classes 3 and/or 4.

2. The certificate of inspection at foot hereof must be signed by an Inspector under the Inflammable Liquid Act, 1915–1946, or Police Officer, or other officer duly authorised in that behalf, and where the premises are situated outside the Metropolitan Area of Sydney, it is requested that such certificate be obtained prior to forwarding application.

1. Name in full of occupier ... ... Mental Hospital Pear and Milson Islands.

2. Occupation... ... ... Department of Public Health

3. Locality of the premises in which the depot or depots are situated... No. or Name .....
Street Pear Island.
Town Hawkesbury River

4. Nature of premises (Dwelling, Garage, Store, etc.) ... ... Mental Hospital

5. Will mineral spirit be kept in a prescribed underground tank depot ? Yes.

6. Particulars of construction of depots and maximum quantities of inflammable liquid and/or Dangerous Goods to be kept at any one time.

Depot No.	Construction of Depots.			Inflammable Liquid.		Dangerous Goods.			
	Walls.	Roof.	Floor.	Mineral Spirit. Gallons.	Mineral Oil. Gallons.	Class 1. Gallons.	Class 2. Gallons.	Class 3. lb.	Class 4. cub. ft.
	Underground Tank								
1	~~Concrete~~	~~Earth~~	Concrete	500					
2	~~and earth~~		~~and earth~~						
3	~~in a 500 gln. Steel~~								
4	~~tank underground.~~								
5	Iron	Iron	Concrete		650				
6									
7									
8									
9									
10									

Date of Application 25th July 1951

Signature of Applicant A Thompson Manager

Postal Address Pear & Milson Islands Mental Hospital Hawkesbury River

CERTIFICATE OF INSPECTION.

I, Frances Munro being an Inspector under the Inflammable Liquid Act, 1915–46, do hereby certify that the premises or store herein referred to and decribed is suitable with regard to its situation and construction for the safe keeping of inflammable liquid and/or dangerous goods in quantity and nature specified.

Place Brooklyn

Date 13.11.51

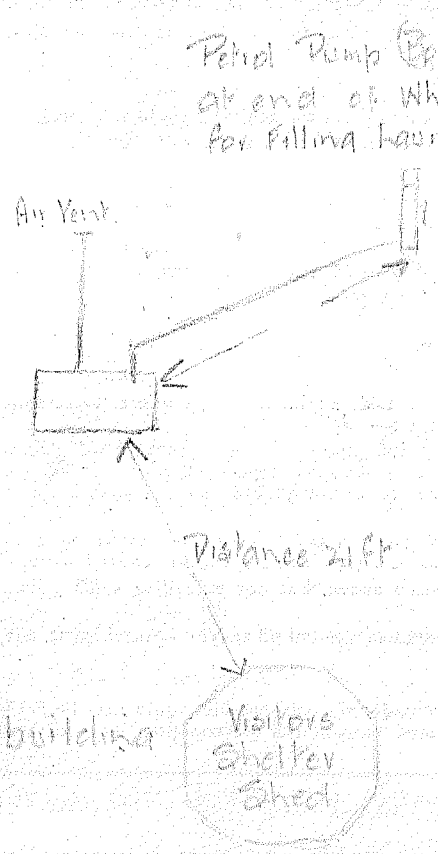
Signature of Inspector Frances Munro

[PLEASE TURN OVER

St 8130 T. H. TENNANT, GOVERNMENT PRINTER.

Make Rough Sketches showing—

Sketch showing position of depot or depots ... buildings, also distances separating depots and



Sketch of depot or depots showing provision made for ventilation also inside dimensions (length, width, and depth) of ... pit or lower portion, designed to prevent outflow.

This sketch is not required for underground tanks.

TABLES SHOWING DISTANCES WHICH UNDER LICENSE MUST SEPARATE PROTECTED WORKS FROM DEPOTS.

Table I.—Where Mineral Spirit and/or Dangerous Goods of Class 1 (with or without Mineral Oil and/or Dangerous Goods of Class 2) are kept or to be kept :—

In an underground Tank Depot, in quantity exceeding 500 gallons, but not exceeding—	In an aboveground Tank Depot or other Depot, separated from protected works by a screen wall, in quantity exceeding 100 gallons, but not exceeding—	In an aboveground Tank Depot or other Depot not separated from protected works by a screen wall, in quantity exceeding 100 gallons, but not exceeding—	Distance not less than—
Gallons.	Gallons.	Gallons.	Feet.
2,000	1,000	250	10
2,400	1,200	300	11
2,800	1,400	350	12
3,200	1,600	400	13
3,600	1,800	450	14
4,000	2,000	500	15
7,200	3,600	900	16
10,400	5,200	1,300	17
13,600	6,800	1,700	18
16,800	8,400	2,100	19
20,000	10,000	2,500	20

FORM B. Register No. 2836

INFLAMMABLE LIQUID ACT, 1915-1931.

APPLICATIONS for ~~Registration of Premises or~~ Store License under Division 17
for the keeping of Inflammable Liquid and/or Dangerous Goods, in accordance with the provisions of the Inflammable Liquid Act, 1915–31, for the year ending 30th June, 19 37

EXPLANATORY.

Inflammable Liquid—

Mineral Oil—includes kerosene, mineral turpentine and white spirit (for cleaning), and compositions containing same.

Mineral Spirit—includes petrol, benzine, benzolene, benzol and naphtha, and compositions containing same.

Dangerous Goods—

Class I.—Acetone, amylacetate, butylacetate, carbon bi-sulphide; any combination of substances of an inflammable character, other than ether alcohol, used as a solvent for nitro-cellulose or other cellulose compound, having a true flashing point of less than 73 degrees Fahrenheit.

Class II.—Nitro-cellulose, moistened with an alcohol, methylated spirits, vegetable turpentine and turpentine substitutes (other than inflammable liquid); any liquid or solid containing methylated spirits, having a true flashing point of less than 150 degrees Fahrenheit.

Class III.—Nitro-cellulose product and celluloid.

Class IV.—Compressed or dissolved acetylene contained in a porous substance.

DIRECTIONS.

1. Applications must be forwarded to the Chief Inspector of Inflammable Liquid, Explosives Department, Department of Mines, Bridge-street, Sydney, and must be accompanied by the statutory fee, as set out hereunder :—

REGISTRATION OF PREMISES (FEE, 10s.).—For quantities not exceeding 300 gallons of mineral oil and 100 gallons of mineral spirit, if kept together; or 800 gallons of mineral oil and 100 gallons of mineral spirit, if kept in separate depots; or 500 gallons of mineral spirit, if kept in an underground tank depot; or 800 gallons of mineral oil and 500 gallons of mineral spirit, if mineral spirit is kept in an underground tank depot.

In addition to, or in lieu of the above, similar quantities of Dangerous Goods of Classes 1 and 2 may be kept; reading Dangerous Goods of Class 1 for the words Mineral Spirit and Dangerous Goods of Class 2 for the words Mineral Oil.

STORE LICENSE, DIV. A (FEE, £1).—For quantities in excess of those stated above, but not exceeding 4,000 gallons mineral oil and/or mineral spirit, and/or Dangerous Goods of Classes 1 and 2.

STORE LICENSE, DIV. B (FEE, £2).—For quantities exceeding 4,000 gallons of mineral oil and/or mineral spirit, and/or dangerous goods of Classes 1 and 2, and/or dangerous goods of Class 3.
For the keeping of Dangerous Goods of Classes 3 and/or 4.

2. The certificate of inspection at foot hereof must be signed by an Inspector under the Inflammable Liquid Act, 1915–1931, or Police Officer, or other officer duly authorised in that behalf, and where the premises are situated outside the Metropolitan Area it is requested that such certificate be obtained prior to forwarding application.

1. Name in full of occupier	William J. F. McCoy on behalf of ~~Mental Hospital Rabbit Island~~
2. Occupation	Mental Hospital
3. Locality of the premises in which the depot or depots are situated	No. or Name Peat ~~Rabbit~~ Island
Hawkesbury River	Street
	Town ~~Brooklyn~~
4. Nature of premises (Dwelling, Garage, Store, etc.)	Mental Hospital
5. Will mineral spirit be kept in a prescribed underground tank depot?	No
6. Will mineral spirit in quantities exceeding 3 gallons be kept or used for any industrial purpose ? (State nature of industry.)	No

7. Particulars of construction of depots and maximum quantities of inflammable liquid and/or Dangerous Goods

STOCKPOTS (ELECTRIC)

TILTING BRATT PAN 65 MJ

25½

TING
VES

KITCHEN

2·75 kPa

25

2500 ABOVE FLOOR

25

BOILER ROOM

STORE ROOM

2·75 kPa

25

IN ROOF SPACE OR UNDER CEILING

SSR

32

32

40

EXISTING REGULATOR TO BE REMOVED

ON EXTERNAL WALL UNDER EAVES

40

2·75 kPa

40

20

140 kPa

TO EXISTING GAS
TANK POSITION •
INTERCONNECT V
EXISTING HIGH
PRESSURE GAS
LINE.

FORE SSR 140 kPa.
TER SSR 2·75 kPa.
BE COPPER.
PRESSURE LINE TO BE
D TO NEW REGULATOR

VING APPLIANCES TO
JAL CONTROL VALVES
UNITS.
LE: 1:2

LEGEND

NEW GAS PIPING

GAS PIPING TO BE REUSED

SSR RISER

8) HOSE COCK TO BE LOCATED WITHIN 8m OF GAS TANKS

SCALE: 1:5

80 100 120 140 160 0 100 200 300 400

DEPARTMENT OF PUBLIC WORKS N.S.W.

W. K. PILZ Director of Public Works

J. W. THOMSON Government Architect

Principal Engineer

2.5.77

G. C. CORKILL Deputy Chief Engineer
Govt. Architect's Branch

PEAT ISLAND HOSPITAL

L. P. GAS INSTALLATION
ADDITIONAL KITCHEN EQUIPMENT
EXTENSION OF EXISTING GAS SERVICE.

PLAN RM. No. MH6-15/2

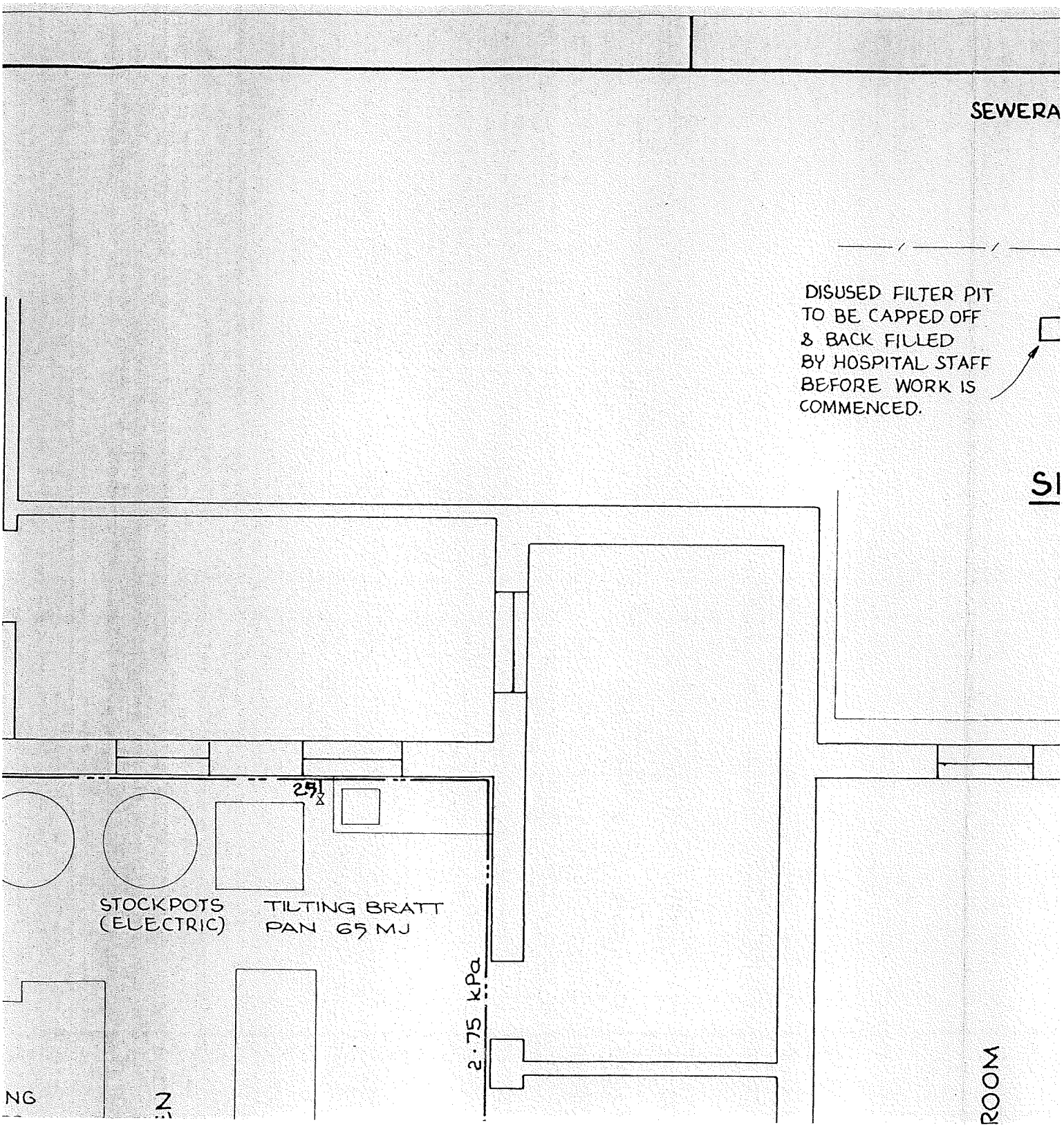
G.C

G.F

NUMBER IN SET 1

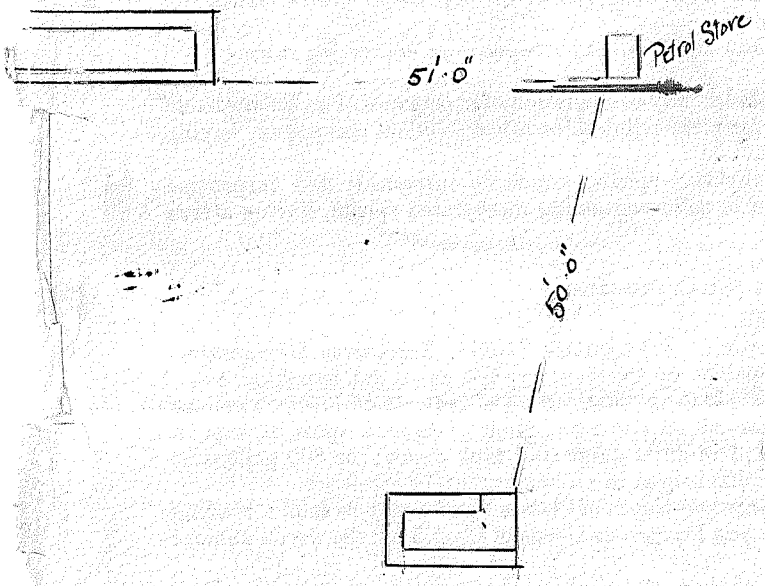
SHEET NUMBER 1

SCALES: 1:50

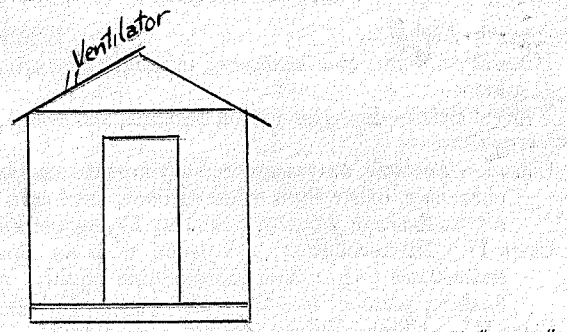

SEWERA
DISUSED FILTER PIT
TO BE CAPPED OFF
& BACK FILLED
BY HOSPITAL STAFF
BEFORE WORK IS
COMMENCED.
SI
STOCKPOTS
(ELECTRIC)
TILTING BRATT
PAN 65 MJ
2.75 kPa
ROOM
NG

Make Rough Sketches showing :—

Ground plans of premises showing position of depot or depots and adjacent buildings, also distances separating depots and buildings.



Sketch of depot or depots showing provision made for ventilation, also inside dimensions (length, width, and depth) of the pit or lower portion, designed to prevent outflow.
This sketch is not required for underground tanks.



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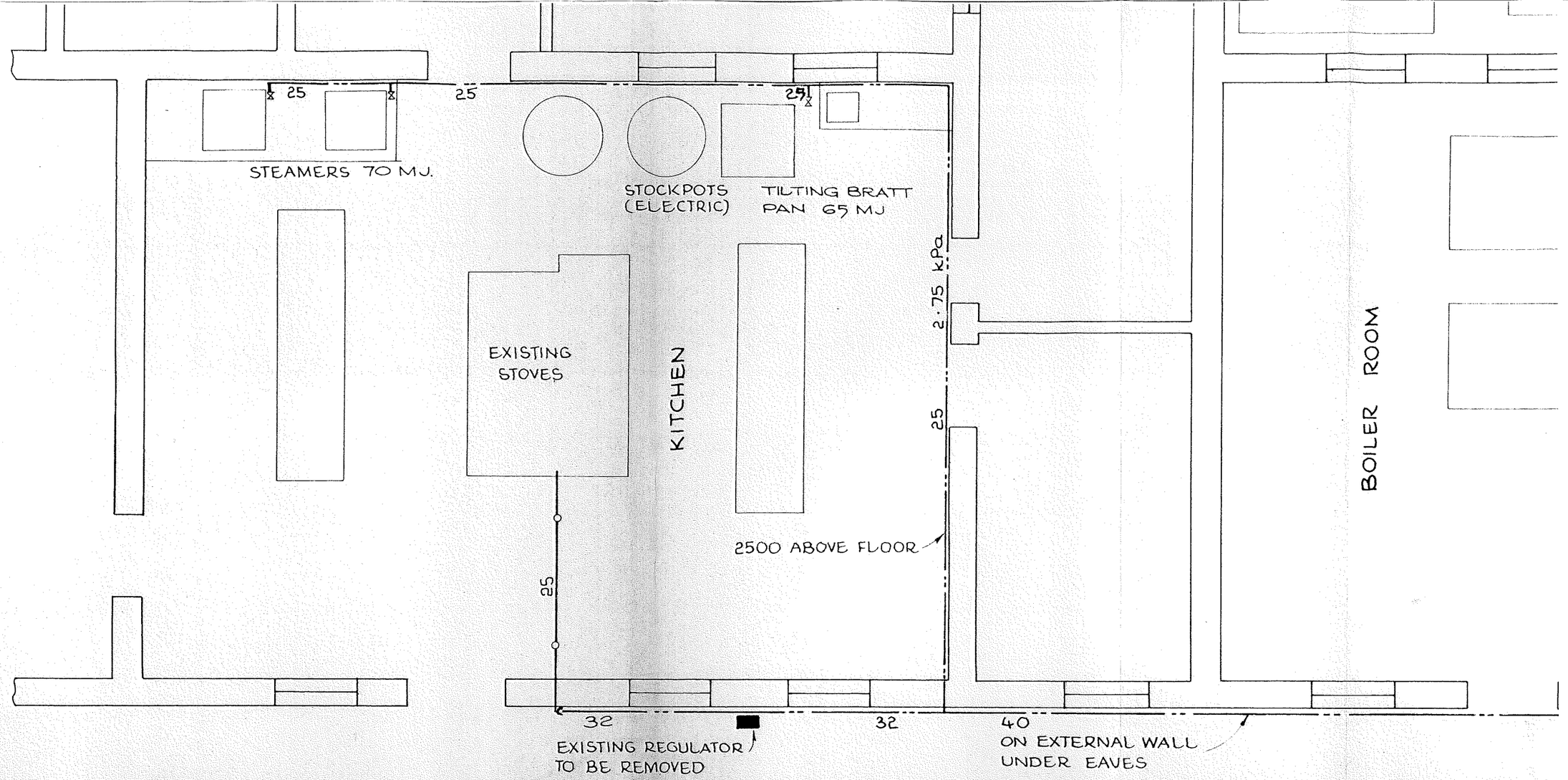
TABLES SHOWING DISTANCES WHICH UNDER LICENSE MUST SEPARATE PROTECTED WORKS FROM DEPOTS.

TABLE I.—Where Mineral Spirit and/or Dangerous Goods of Class 1 (with or without Mineral Oil and/or Dangerous Goods of Class 2) are kept or to be kept :—

In an underground Tank Depot, in quantity exceeding 500 gallons, but not exceeding—	In an aboveground Tank Depot or other Depot wholly surrounded by a screen wall, in quantity exceeding 100 gallons, but not exceeding—	In an aboveground Tank Depot or other Depot not wholly surrounded by a screen wall, in quantity exceeding 100 gallons, but not exceeding—	Distance not less than—
Gallons.	Gallons.	Gallons.	Feet.
2,000	1,000	250	10
2,400	1,200	300	11
2,800	1,400	350	12
3,200	1,600	400	13
3,600	1,800	450	14
4,000	2,000	500	15
7,200	3,600	900	16
10,400	5,200	1,300	17
13,600	6,800	1,700	18
16,800	8,400	2,100	19



NOTES:

1) ALL WORK TO BE DONE IN ACCORDANCE WITH THE DEPARTMENTS STANDARD FOR L.P. GAS INSTALLATION EDS G103.
2) SECOND STAGE REGULATOR TO BE SIMILAR OR EQUAL 'REGO' 2503 EXISTING REGULATOR TO BE CHECKED FOR ADEQUATE CAPACITY PRIOR TO RELOCATION.

SCALE: 1:1

3) PRESSURE BEFORE SSR 140 kPa.
4) PRESSURE AFTER SSR 2·75 kPa.
5) ALL PIPING TO BE COPPER.
6) EXISTING HIGH PRESSURE LINE TO BE INTERCONNECTED TO NEW REGULATOR POSITION.
7) ALL GAS BURNING APPLIANCES TO HAVE INDIVIDUAL CONTROL VALVES AT INLET OF UNITS.

SCALE: 1:2

LEGEND

NEW GAS PIPING
GAS PIPING TO BE REUSED
SSR RISER

8) HOSE COCK TO BE LOCATED WITHIN 8m OF GAS TANKS

SCALE: 1:5

DEPARTMENT OF PUBLIC WORKS N.S.W.

W. K. PILZ Director of Public Works

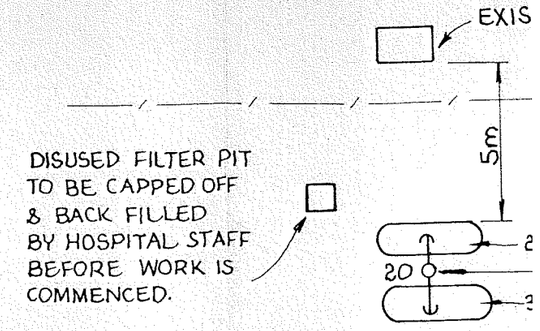
J. W. THOMSON — Government Architect

J. Thomson 2.5.77 — Principal Engineer

G. C. CORKILL — Deputy Chief Engineer, Govt. Architect's Branch

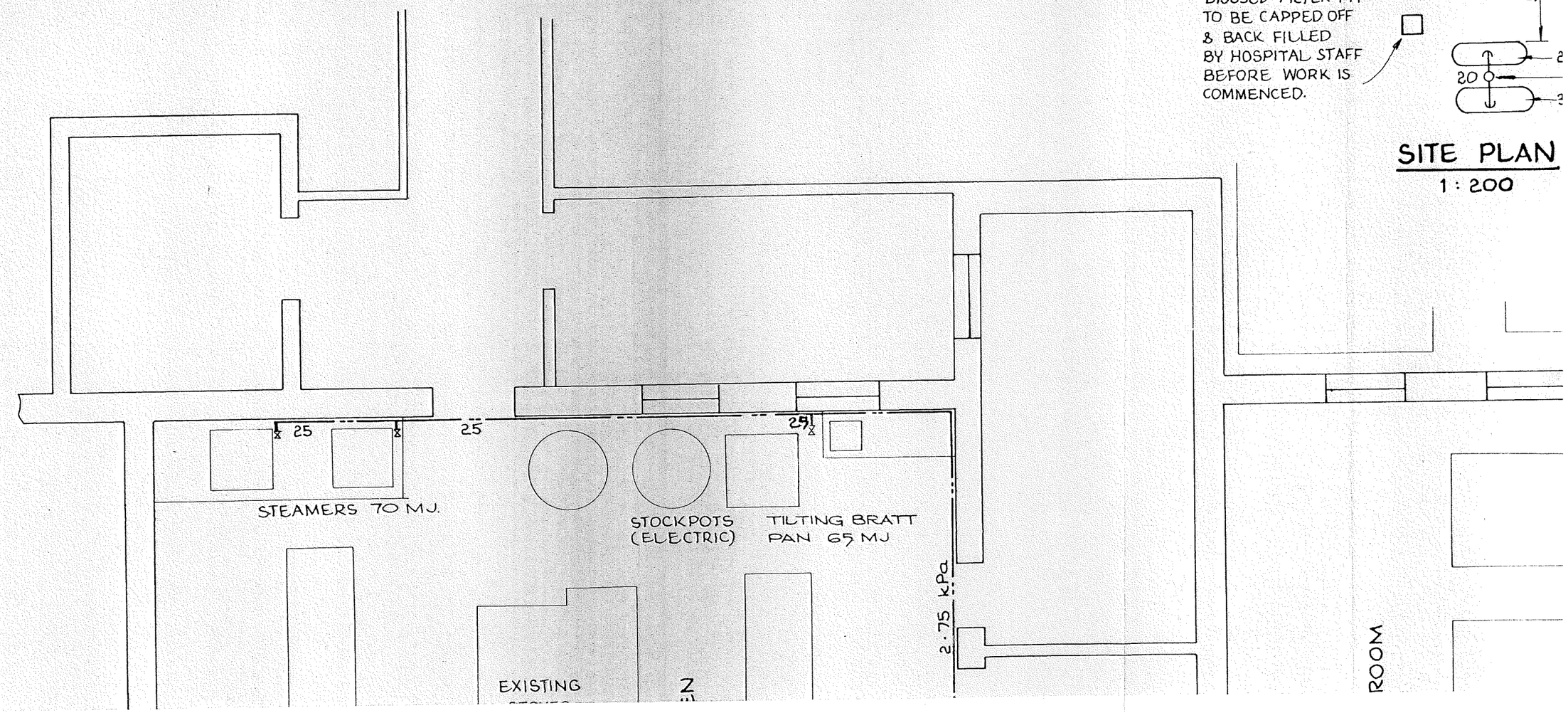
A2

SEWERAGE TREATMENT



SITE PLAN

1 : 200



Appendix D Site Photographs

PHOTOGRAPH 1: PORTION 1 – VACANT BUILDINGS INCLUDING FORMER LAUNDRY AND STAFF QUARTERS

PHOTOGRAPH 2: PORTION 1 – AST NORTH OF LAUNDRY BUILDING

PHOTOGRAPH 3: PORTION 1 - ACM IDENTIFIED ON SURFACE ADJACENT TO VACANT BUILDINGS

PHOTOGRAPH 4: PORTION 1– LPG AST

JBS&G

Job No: 54933	
Client: Property NSW	
Version: R02 Rev A	Date: 06/09/2018
Drawn By: CB	Checked By: SB
Not to Scale	
Coord. Sys n/a	
Peat Island, Mooney Mooney, NSW	
APPENDIX D	

PHOTOGRAPH 5: PORTION 1 – DIESEL GENERATOR

PHOTOGRAPH 6: PORTION 1 - UNDERGROUND SEWER TRANSFER PIT

PHOTOGRAPH 7: PORTION 2 – NATURAL SOIL ENCOUNTERED

PHOTOGRAPH 8: PORTION 2 - AST WITHIN SMALL BRICK BUILDING, WESTERN SIDE OF PORTION 2

JBS&G

Job No: 54933

Client: Property NSW

Version: R02 Rev A	Date: 06/09/2018
Drawn By: CB	Checked By: SB

Not to Scale

Coord. Sys n/a

Peat Island, Mooney Mooney, NSW

APPENDIX D

PHOTOGRAPH 9: PORTION 3 - VACANT BUILDINGS

PHOTOGRAPH 10: PORTION 3 - SEA WALLS ON THE WESTERN BOUNDARY OF PEAT ISLAND

PHOTOGRAPH 11: POTION 3 – CONCRETE USED AS FILL MATERIAL WITHIN SEA WALLS

PHOTOGRAPH 12: PORTION 3 – FILL MATERIAL IDENTIFIED WITHIN SOUTHERN PORTION OF PEAT ISLAND

JBS&G

Job No: 54933	
Client: Property NSW	
Version: R02 Rev A	Date: 06/09/2018
Drawn By: CB	Checked By: SB
Not to Scale	
Coord. Sys n/a	

Peat Island, Mooney Mooney, NSW

APPENDIX D

PHOTOGRAPH 9: PORTION 3 – DIESEL AST AND BUND

PHOTOGRAPH 10: PORTION 3 - CHEMICAL STORAGE BUILDING

PHOTOGRAPH 11: PORTION 3 – BURIED ASBESTOS IN THE NORTHERN PORTION OF PEAT ISLAND

PHOTOGRAPH 12: PORTION 3 – ACM FRAGMENTS IDENTIFIED WITHIN SS03

JBS&G

Job No: 54933	
Client: Property NSW	
Version: R02 Rev A	Date: 06/09/2018
Drawn By: CB	Checked By: SB
Not to Scale	
Coord. Sys n/a	

Peat Island, Mooney Mooney, NSW

APPENDIX D

PHOTOGRAPH 13: PORTION 5 – VACATED CHURCH

PHOTOGRAPH 14: PORTION 5 - VACANT BUILDING ADJACENT CHURCH

PHOTOGRAPH 15: PORTION 5 – LPG TANK

PHOTOGRAPH 16: PORTION 7 – FORMER SERVICE STATION

JBS&G

Job No: 54933

Client: Property NSW

Version: R02 Rev A | Date: 06/09/2018

Drawn By: CB | Checked By: SB

Not to Scale

Coord. Sys n/a

Peat Island, Mooney Mooney, NSW

APPENDIX D

PHOTOGRAPH 17: PORTION 7 – VENT PIPES AT FORMER SERVICE STATION

PHOTOGRAPH 18: PORTION 7 – FILL POINTS AT FORMER SERVICE STATION (1 DECOMMISSIONED)

PHOTOGRAPH 19: PORTION 7 – FORMER LOCATION OF FUEL BOWSERS AND MONITORING WELL AT SERVICE STATION

PHOTOGRAPH 20: PORTION 7 - CONCRETED DIP POINT FOR UST AT FORMER SERVICE STATION

JBS&G

Job No: 54933

Client: Property NSW

Version: R02 Rev A | Date: 06/09/2018

Drawn By: CB | Checked By: SB

Not to Scale

Coord. Sys n/a

Peat Island, Mooney Mooney, NSW

APPENDIX D

PHOTOGRAPH 21: PORTION 7 – DIP STICK IDENTIFIED WITHIN UST (TYPE 18 UST)

PHOTOGRAPH 22: PORTION 7 – LOCATION OF THREE USTS AT THE FORMER SERVICE STATION

PHOTOGRAPH 23: PORTION 9/10 – FORMER RURAL FIRE SERVICES BUILDING

PHOTOGRAPH 24: PORTION 9/10 – ABOVE GROUND LPG TANK WITHIN FORMER SCHOOL

JBS&G

Job No: 54933	
Client: Property NSW	
Version: R02 Rev A	Date: 06/09/2018
Drawn By: CB	Checked By: SB
Not to Scale	
Coord. Sys n/a	
Peat Island, Mooney Mooney, NSW	

APPENDIX D

Appendix E Borelogs

SS_01

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 1.8
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Sandy SILT - brown, heterogeneous, dry, soft, non-plastic, inclusions of shells, roots, fine sandstone gravels.	SS_01 0.0-0.1 PID = 4.8 ppm	No odours, stains or ACM noted
		0.30		SP	SAND - brown, yellow, grey, heterogeneous, dry, medium grained, angular - sub-angular, inclusions of large sandstone rocks and shells.		No odours, stains or ACM noted
	0.5					SS_01 0.5-0.6 PID = 4.1 ppm	
	1.0					SS_01 0.9-1.0 PID = 2.4 ppm	
	1.5						
		1.50		SC	Clayey SAND - yellow, brown, heterogeneous, damp, medium grained, sub-angular - sub rounded, inclusions of large sandstone boulders	SS_01 1.5-1.6 PID = 2.6 ppm	No odours, stains or ACM noted
		1.80			Borehole SS_01 terminated at 1.8m		End of hole at program depth
	2.0						
	2.5						
	3.0						
	3.5						

SS_02

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 1.7
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Gravelly SAND - yellow, dark brown, heterogeneous, dry, loose, medium grained, sub-angular, inclusions of black gravels (road base).	SS_02 0.0-0.1 PID = 3.6 ppm	No odours, stains or ACM noted
		0.10		Fill	GRAVELS - black, heterogeneous, dry, fine to medium gravels, coarse, angular, inclusions of trace sandstone fragments.		No odours, stains or ACM noted
						SS_02 0.3-0.4 PID = 2.4 ppm	
	0.5					SS_02 0.5-0.6 PID = 2 ppm	
		0.60		Fill	Sandy Gravelly CLAY - yellow, red, brown, heterogeneous, damp to wet, soft, low to medium plasticity. Inclusions of concrete pylons, brick fragments, black gravel (road base) and large sandstone boulders (increasing with depth).		No odours, stains or ACM noted
	1.0					SS_02 0.9-1.0 PID = 1.9 ppm	
	1.5					SS_02 1.5-1.6 PID = 2.4 ppm	
		1.70			Borehole SS_02 terminated at 1.7m		End of hole due to collapsing sand and sandstone
	2.0						
	2.5						
	3.0						
	3.5						

SS_03

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 1.1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Sandy SILT - brown, heterogeneous, dry, soft, medium grained, sub angular - sub rounded. Inclusions of shells and rootlets.	SS_03 0.0-0.1 PID = 2.6 ppm	No odours, stains or ACM noted
		0.15		Fill	Gravelly Silty SAND; brown, heterogeneous, dry, loose, fine to medium grained, coarse sub angular - sub rounded. Inclusions of ACM fragments, bricks, tiles, gravels (road base), concrete and large sandstone boulders (increasing with depth).		ACM fragments observed throughout subsoil. No odours or stains noted.
	0.5					SS_03 0.5-0.6 PID = 2.8 ppm	
	1.0						
		1.10			Borehole SS_03 terminated at 1.1m		End of hole at refusal on sandstone
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_04

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.5
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Sandy SILT - brown, yellow, heterogeneous, dry to damp, soft. Inclusions of trace plastic, porcelain tile and rootlets.	SS_04 0.0-0.1 PID = 1.6 ppm	No odours, stains or ACM noted
		0.30		SANDSTONE	SANDSTONE (Weathered) - yellow, grey, heterogeneous, increasing boulders with depth	SS_04 0.3-0.4 PID = 1.4 ppm	No odours, stains or ACM noted
	0.5						
		0.50			Borehole SS_04 terminated at 0.5m		End of hole at refusal on sandstone
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_05

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 1.3
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Sandy SILT - brown, heterogeneous, dry to damp, non-plastic, soft. Inclusions of weathered sandstone gravels and rootlets.	SS_05 0.0-0.1 PID = 1.6 ppm	No odours, stains or ACM noted
		0.20		SG-GC	Gravelly Clayey SAND - orange, red, grey, brown, heterogeneous, damp to wet (increasing moisture with depth), loose, fine to coarse, sub angular. Inclusions of fine to medium sandstone gravels.		No odours, stains or ACM noted
	0.5					SS_05 0.5-0.6 PID = 2 ppm	
	1.0					SS_05 0.9-1.0 PID = 1.4 ppm	
		1.30			Borehole SS_05 terminated at 1.3m		End of hole at refusal on sandstone
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_06

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 1.1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Sandy SILT - brown, heterogeneous, dry, soft, non-plastic, inclusions of rootlets and trace fine sandstone gravels.	SS_06 0.0-0.1 PID = 1.4 ppm	No odours, stains or ACM noted
		0.15		SP	SAND - yellow, grey, heterogeneous, damp to wet (increasing moisture with depth), loose, medium grained, sub-angular to sub-rounded. Inclusions of large weathered sandstone boulders.		No odours, stains or ACM noted
	0.5					SS_06 0.5-0.6 PID = 0.8 ppm	
	1.0					SS_06 0.9-1.0 PID = 0.7 ppm	
		1.10			Borehole SS_06 terminated at 1.1m		End of hole due to collapsing sand and sandstone
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_07

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Sandy SILT - brown, heterogeneous, dry, soft. Inclusions of fine rootlets and trace fine sandstone gravels.	SS_07 0.0-0.1 PID = 0.6 ppm	No odours, stains or ACM noted
		0.25		SP	SAND - yellow, white, heterogeneous, dry to damp, loose, medium grained, sub angular to sub rounded with inclusions of large sandstone boulders.		No odours, stains or ACM noted
	0.5					SS_07 0.5-0.6 PID = 0.4 ppm	
		0.70		SC	Clayey SAND; brown, yellow, heterogeneous, damp to wet, loose, medium grained, sub angular to sub rounded with inclusions of large weathered sandstone boulders.		No odours, stains or ACM noted
	1.0					SS_07 0.9-1.0 PID = 0.4 ppm	
		1.00			Borehole SS_07 terminated at 1m		End of hole due to collapsing sand and sandstone
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_08

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Sandy SILT - brown, heterogeneous, dry, soft. Inclusions of fine rootlets.	SS_08 0.0-0.1 PID = 1.2 ppm	No odours, stains or ACM noted
		0.25		SP	SAND - red, yellow, white, heterogeneous, dry to damp, loose, medium grained, sub-angualr to sub rounded. Inclusions of large sandstone boulders.		No odours, stains or ACM noted
	0.5					SS_08 0.5-0.6 PID = 1 ppm	
		0.70		SC	Clayey SAND - brown, red, yellow, white, heterogeneous, wet, loose, medium grained, sub angular to sub rounded. Inclusions of large weathered sandstone boulders.		No odours, stains or ACM noted
	1.0					SS_08 0.9-1.0 PID = 1 ppm	
		1.00			Borehole SS_08 terminated at 1m		End of hole due to collapsing sand and sandstone
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_09

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty SAND - light brown, heterogeneous, dry, loose, sub angular to sub rounded with inclusions of roots and sandstone gravels.	SS_09 0.0-0.1 PID = 1 ppm	No odours, stains or ACM noted
		0.20		SM	Silty SAND - brown, yellow, red, heterogeneous, damp, loose, sub angular to sub rounded with large sandstone boulders.		No odours, stains or ACM noted
	0.5					SS_09 0.4-0.5 PID = 1 ppm	
	1.0	1.00			Borehole SS_09 terminated at 1m		End of hole at program depth
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_10

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.9
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty SAND; light brown, heterogeneous, dry, loose - medium dense, fine - medium grained. Inclusions of roots, sandstone and trace road base gravels.	SS_10 0.0-0.1 PID = 0.8 ppm	No odours, stains or ACM noted
		0.10		SM	Silty SAND; light brown, yellow, heterogeneous, dry to damp, loose - medium dense, fine - medium grained, sub angular to sub rounded. Inclusions of large sandstone boulders.		No odours, stains or ACM noted
	0.5					SS_10 0.4-0.5 PID = 0.9 ppm	
		0.90			Borehole SS_10 terminated at 0.9m		End of hole at program depth
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_11

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.6
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Clayey SAND - brown, orange, yellow, heterogeneous, dry to damp, medium dense. Inclusions of sandstone gravels and rootlets.	SS_11 0.0-0.1 PID = 0.6 ppm	No odours, stains or ACM noted
	0.5	0.40		SP	SAND - black, heterogeneous, damp, loose, fine to medium grained, sub rounded. Inclusions of fine sandstone gravels	SS_11 0.4-0.5 PID = 0.5 ppm	No odours, stains or ACM noted
		0.60			Borehole SS_11 terminated at 0.6m		End of hole at refusal on sandstone
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_12

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.25
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty SAND - brown, yellow, red, heterogeneous, dry, medium dense, fine to medium grained. Inclusions of weathered sandstone boulders	SS_12 0.0-0.1 PID = 3.9 ppm	No odours, stains or ACM noted
		0.25			Borehole SS_12 terminated at 0.25m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 12-10-18

SS_13

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty SAND - light brown, heterogeneous, dry, loose - medium dense, fine - medium grained. Inclusions of roots and trace sandstone.	SS_13 0.0-0.1 PID = 1.5 ppm	No odours, stains or ACM noted
		0.15		SM	Silty SAND - light brown, heterogeneous, dry, loose - medium dense, fine - medium grained with large sandstone boulders.		No odours, stains or ACM noted
	0.5					SS_13 0.4-0.5 PID = 1.4 ppm	
	1.0					SS_13 0.9-1.0 PID = 1 ppm	
		1.00			Borehole SS_13 terminated at 1m		End of hole at program depth
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_14

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.15
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty SAND - brown, orange, heterogeneous, dry, loose - medium dense, fine - medium grained, sub angular to sub rounded, inclusions of fine to medium sandstone gravels.	SS_14 0.0-0.1 PID = 2.1 ppm	No odours, stains or ACM noted
		0.15			Borehole SS_14 terminated at 0.15m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_15

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.25
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty SAND - brown, heterogeneous, dry, loose - medium dense, fine - medium grained, sub angular to sub rounded, inclusions of fine to medium sandstone gravels and rootlets.	SS_15 0.0-0.1 PID = 0.6 ppm	No odours, stains or ACM noted
	0.5	0.25			Borehole SS_15 terminated at 0.25m		End of hole at refusal on sandstone
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_16

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 18-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.8
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty SAND - brown, orange, heterogeneous, dry, loose - medium dense, fine - medium grained, sub angular to sub rounded, inclusions of fine to medium sandstone gravels and rootlets.	SS_16 0.0-0.1 PID = 0.6 ppm	No odours, stains or ACM noted
		0.30		SC	Clayey SAND - brown, orange, heterogeneous, damp, medium dense, fine - medium grained. Inclusions of trace sandstone.		No odours, stains or ACM noted
	0.5					SS_16 0.5-0.6 PID = 0.4 ppm	
		0.80		SP	SAND - white, yellow, red, heterogeneous, damp, loose - medium dense, fine to medium grained, sub angular to sub rounded, inclusions of trace sandstone.		No odours, stains or ACM noted
	1.0					SS_16 0.9-1.0 PID = 0.4 ppm	
		1.00			Borehole SS_16 terminated at 0.8m		End of hole at program depth
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_17

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: R Lill
Contractor: Ken Coles
Total Hole Depth (mbgs): 1.1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Sandy Gravelly SILT - red with grey gravels, heterogeneous, dry, stiff - very stiff, non-plastic.	SS_17 0.0-0.1 PID = 1.6 ppm	No odours, stains or ACM noted
		0.20		Fill	Sandy CLAY - brown, red, heterogeneous, dry, stiff, medium plasticity.	SS_17 0.2-0.3 PID = 0.7 ppm	No odours, stains or ACM noted
	0.5						
		0.60		SANDSTONE	Weathered SANDSTONE - red, white, light brown, heterogeneous, dry, very stiff - hard.		No odours, stains or ACM noted
	1.0					SS_17 0.9-1.1 PID = 0.9 ppm	
		1.10			Borehole SS_17 terminated at 1.1m		End of hole at program depth
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_18

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: R Lill
Contractor: Ken Coles
Total Hole Depth (mbgs): 1.1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				SM	Silty SAND - brown, heterogeneous, damp, loose. Inclusions of rootlets and trace sandstone.	SS_18 0.0-0.1 PID = 1.6 ppm	No odours, stains or ACM noted
		0.10		SC	Clayey SAND - orange/light brown, heterogeneous, dry - damp, loose to medium dense.		No odours, stains or ACM noted
	0.5					SS_18 0.2-0.3 PID = 0.8 ppm	
	1.0	0.90		SC	Clayey SAND - light grey, brown and orange, heterogeneous, damp, medium dense, no inclusions.	SS_18 0.9-1.0 PID = 0.6 ppm	No odours, stains or ACM noted
		1.10			Borehole SS_18 terminated at 1.1m		End of hole at program depth
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_19

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: R Lill
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.9
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit	0.5			SC	Clayey SAND - white, light brown, heterogeneous, damp, dense to very dense increasing sandstone boulders with depth.	SS_19 0.0-0.1 PID = 0.6 ppm SS_19 0.2-0.3 PID = 0.4 ppm SS_19 0.6-0.7 PID = 0.4 ppm	No odours, stains or ACM noted
	1.0	0.90			Borehole SS_19 terminated at 0.9m		End of hole at program depth
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_20

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: R Lill
Contractor: Ken Coles
Total Hole Depth (mbgs): 1.2
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty SAND - black, heterogeneous, damp, loose, fine grainded. Inclusions of rootlets.	SS_20 0.0-0.1 PID = 1.2 ppm	No odours, stains or ACM noted
		0.20		SP	SAND - light grey, brown, heterogeneous, damp, medium dense, fine grained. Inclusions of some fine sandstone gravels.	SS_20 0.2-0.3 PID = 0.6 ppm	No odours, stains or ACM noted
	0.5						
	1.0					SS_20 0.9-1.0 PID = 0.7 ppm	
		1.00		SP	SAND - orange, grey, heterogeneous, damp, medium dense, fine to medium grained. Inclusions of fine to medium sandstone gravels		No odours, stains or ACM noted
		1.20			Borehole SS_20 terminated at 1.2m		End of hole at program depth
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_21

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: R Lill
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.7
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty SAND - light brown, heterogeneous, dry, medium dense, fine grained. Inclusions of rootlets.	SS_21 0.0-0.1 PID = 1.1 ppm	No odours, stains or ACM noted
		0.10		Fill	SAND - red, orange, heterogeneous, damp, medium dense, fine grained. Inclusions of roots, branches, plastic bottle, trace sandstone gravels.		No odours, stains or ACM noted
						SS_21 0.2-0.3 PID = 1 ppm	
	0.5	0.40		SP	SAND - red, grey, heterogeneous, damp, very dense, fine to medium grained. Inclusions of large sandstone boulders.		No odours, stains or ACM noted
		0.70			Borehole SS_21 terminated at 0.7m		End of hole at program depth
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_22

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: R Lill
Contractor: Ken Coles
Total Hole Depth (mbgs): 2.5
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty SAND - black, heterogeneous, dry to damp, loose, fine grained. Inclusions of rootlets.	SS_22 0.0-0.1 PID = 0.4 ppm	No odours, stains or ACM noted
		0.20		Fill	Clayey SAND - light brown, homogeneous, damp, dense, fine grained.	SS_22 0.2-0.3 PID = 0.4 ppm	No odours, stains or ACM noted
	0.5						
		0.70		SC	Clayey SAND - reddish, grey mottled brown, heterogeneous, damp to moist, dense - very dense, medium grained.		No odours, stains or ACM noted
	1.0					SS_22 1.0-1.1 PID = 0.3 ppm	
	1.5						
	2.0						
	2.5						
		2.50			Borehole SS_22 terminated at 2.5m		End of hole at program depth
	3.0						
	3.5						

SS_23

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: R Lill
Contractor: Ken Coles
Total Hole Depth (mbgs): 3.1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	SAND - black, heterogeneous, damp, very loose, fine grained. Inclusions of rootlets.	SS_23 0.0-0.1 PID = 1.4 ppm	No odours, stains or ACM noted
		0.20		SP	SAND - grey, homogeneous, damp to wet (increasing moisture with depth), loose, medium dense, fine to medium grained.	SS_23 0.2-0.3 PID = 0.8 ppm	No odours, stains or ACM noted
	0.5						
	1.0					SS_23 0.9-1.0 PID = 0.8 ppm	
	1.5						
	2.0						
	2.5						
	3.0						
		3.10			Borehole SS_23 terminated at 3.1m		End of hole at program depth
	3.5						

SS_24

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 1.3
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty SAND - black and brown, heterogeneous, dry to damp, medium density, fine to medium grained. Inclusions of rootlets.	SS_24 0.0-0.1 PID = 1.2 ppm	No odours, stains or ACM noted
		0.20		SP	SAND - orange, brown, heterogeneous, damp to moist, medium density, well graded, medium grained with fine to medium weathered sandstone gravels.	SS_24 0.2-0.3 PID = 1 ppm	No odours, stains or ACM noted
	0.5						
		0.60		SC	Clayey SAND - red, brown, heterogeneous, moist to wet (increasing moisture with depth), medium dense, with inclusions of large sandstone boulders		No odours, stains or ACM noted
	1.0					SS_24 0.9-1.0 PID = 1 ppm	
		1.30			Borehole SS_24 terminated at 1.3m		End of hole due to collapsing sand and sandstone
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_25

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 1.3
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty SAND - blackish brown, heterogeneous, dry to damp, loose to medium dense, medium grained. Inclusions of rootlets.	SS_25 0.0-0.1 PID = 1 ppm	No odours, stains or ACM noted
		0.20		SP	SAND - yellow, heterogeneous, damp, medium dense, medium grained.	SS_25 0.2-0.3 PID = 0.8 ppm	No odours, stains or ACM noted
	0.5						
		0.50		SC	Clayey SAND - red, brown, heterogeneous, damp to wet (increasing moisture with depth), medium dense, with inclusions of large sandstone boulders		No odours, stains or ACM noted
	1.0					SS_25 1.0-1.1 PID = 0.8 ppm	
		1.30			Borehole SS_25 terminated at 1.3m		End of hole due to collapsing sand and sandstone
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_26

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: R Gray
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.5
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty SAND - dark brown, heterogeneous, dry, poorly sorted, loose, medium grained. Inclusions of weathered sandstone gravels, rootlets, and oyster shells.	SS_26 0.0-0.1 PID = 0.6 ppm	No odours, stains or ACM noted
		0.20		SC	Clayey SAND - orange, white, heterogeneous, damp, poorly sorted, medium grained. Inclusions of weathered sandstone boulders.	SS_26 0.2-0.5 PID = 0.6 ppm	No odours, stains or ACM noted
	0.5						
		0.50			Borehole SS_26 terminated at 0.5m		End of hole at refusal on sandstone
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_27

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: R Gray
Contractor: Ken Coles
Total Hole Depth (mbgs): 1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Clayey Silty SAND - dark brown, heterogeneous, damp, poorly sorted, medium grained. Inclusions of rootlets.	SS_27 0.0-0.1 PID = 0.6 ppm	No odours, stains or ACM noted
		0.20		SC	Clayey SAND - white, orange, heterogeneous, saturated, loose to medium dense, inclusions of sandstone cobbles.	SS_27 0.2-0.3 PID = 0.4 ppm	No odours, stains or ACM noted
	0.5						
							No odours, stains or ACM noted
	1.0					SS_27 0.9-1.0 PID = 0.4 ppm	
		1.00			Borehole SS_27 terminated at 1m		End of hole due to collapsing sand and sandstone
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_28

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: R Gray
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.5
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Clayey Silty SAND - dark brown, heterogeneous, damp, medium grained, loose to medium dense, poorly sorted. Inclusions of rootlets.	SS_28 0.0-0.1 PID = 0.6 ppm	No odours, stains or ACM noted
		0.10		SC	Clayey SAND - orange, red, heterogeneous, damp, medium grained, loose to medium dense, poorly sorted.		No odours, stains or ACM noted
	0.5					SS_28 0.2-0.3 PID = 0.5 ppm	
		0.50			Borehole SS_28 terminated at 0.5m		End of hole due to collapsing sand and sandstone
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_29

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 3
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Fill - Sandy Silty CLAY - black, yellow, heterogeneous, damp, medium plasticity. Inclusions of rootlets	SS_29 0.0-0.1 PID = 0.9 ppm	No odours, stains or ACM noted
						SS_29 0.2-0.3 PID = 1.2 ppm	
		0.30		SC	Clayey SAND - grey, red, heterogeneous, damp, medium dense medium grained. Inclusions of large weathered sandstone boulders.		No odours, stains or ACM noted
	0.5						
	1.0					SS_29 1.0-1.1 PID = 1.2 ppm	
	1.5					SS_29 1.6-1.7 PID = 1 ppm	
	2.0					SS_29 2.0-2.1 PID = 1 ppm	
	2.5					SS_29 2.6-2.7 PID = 1 ppm	
	3.0						
		3.00			Borehole SS_29 terminated at 3m		End of hole at program depth
	3.5						

SS_30

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: C Bennett
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.35
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				SM	Silty SAND - brown, heterogeneous, dry, loose, fine to medium grained, sub angular to sub rounded. Inclusions of shells and rootlets, increasing sandstone gravels with depth.	SS_30 0.0-0.1 PID = 0.7 ppm SS_30 0.2-0.3 PID = 0.6 ppm	No odours, stains or ACM noted
		0.35			Borehole SS_30 terminated at 0.35m		End of hole at refusal on sandstone

SS_31

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.5
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty SAND - brown, heterogeneous, damp, poorly sorted.	SS_31 0.0-0.1 PID = 0.6 ppm	No odours, stains or ACM noted
		0.20		SC	Clayey SAND - yellow, brown, heterogeneous, damp, loose, fine to medium grained.	SS_31 0.2-0.3 PID = 0.6 ppm	No odours, stains or ACM noted
	0.5	0.50			Borehole SS_31 terminated at 0.5m		End of hole at refusal on sandstone
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_32

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: C Bennett
Contractor:
Total Hole Depth (mbgs): 0.15
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hard Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose to medium dense, fine to medium grained, sub angular to sub rounded. Inclusions of trace roadbase gravels and sandstone.	SS_32 0.0-0.1 PID = 1 ppm	No odours, stains or ACM noted
		0.15			Borehole SS_32 terminated at 0.15m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_33

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.5
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				CL-ML-SM	Sandy Silty CLAY - black, brown, heterogeneous, damp, medium plasticity, soft to firm.	SS_33 0.0-0.1 PID = 1.4 ppm	No odours, stains or ACM noted
		0.20		SC	Clayey SAND - red, brown, heterogeneous, damp to moist, loose to medium dense, fine to medium grained, with inclusions of fine to medium sandstone gravels	SS_33 0.2-0.3 PID = 1.2 ppm	No odours, stains or ACM noted
	0.5						
		0.50			Borehole SS_33 terminated at 0.5m		End of hole at refusal on sandstone
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_34

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: C Bennett
Contractor:
Total Hole Depth (mbgs): 0.2
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND - brown, orange, heterogeneous, dry to damp, loose to medium dense, fine to medium grained. Inclusions of trace road base gravels and fine to medium sandstone gravels.	SS_34 0.0-0.1 PID = 0.9 ppm	No odours, stains or ACM noted
		0.20			Borehole SS_34 terminated at 0.2m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_35

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 2
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Sandy Silty CLAY - brown, yellow, heterogeneous, damp, medium plasticity, soft to firm, Inclusions of rootlets and fine weathered sandstone gravels.	SS_35 0.0-0.1 PID = 0.9 ppm	No odours, stains or ACM noted
						SS_35 0.2-0.3 PID = 2.8 ppm	
		0.30		SC	Clayey SAND - red, grey, heterogeneous, damp (increasing moisture with depth), medium dense, fine to medium grained, inclusions of large sandstone boulders		No odours, stains or ACM noted
	0.5						
	1.0					SS_35 1.0-1.1 PID = 1 ppm	
	1.5						
						SS_35 1.6-1.7 PID = 0.6 ppm	
	2.0						
		2.00			Borehole SS_35 terminated at 2m		End of hole at refusal on sandstone
	2.5						
	3.0						
	3.5						

SS_36

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: C Bennett
Contractor:
Total Hole Depth (mbgs): 0.15
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				SM	Silty SAND - brown, orange, white, heterogeneous, dry, medium dense, fine to medium grained, sub angular to sub rounded. Inclusions of rootlets and sandstone.	SS_36 0.0-0.1 PID = 0.9 ppm	No odours, stains or ACM noted
		0.15			Borehole SS_36 terminated at 0.15m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 12-10-18

SS_37

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 1.5
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty CLAY - brown, yellow, heterogeneous, damp, low - medium plasticity, soft. Inclusions of rootlets.	SS_37 0.0-0.1 PID = 1.8 ppm	No odours, stains or ACM noted
						SS_37 0.2-0.3 PID = 1.7 ppm	
		0.30		SC	Clayey SAND - yellow, red and grey, heterogeneous, damp, medium dense. Inclusions of large sandstone boulders.		No odours, stains or ACM noted
	0.5						
	1.0					SS_37 0.9-1.0 PID = 1.7 ppm	
	1.5					SS_37 1.4-1.5 PID = 1.6 ppm	
		1.50			Borehole SS_37 terminated at 1.5m		End of hole at refusal on sandstone
	2.0						
	2.5						
	3.0						
	3.5						

SS_38

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: C Bennett
Contractor:
Total Hole Depth (mbgs): 0.15
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hard Auger				Fill	Fill - Gravelly Silty SAND - yellow, orange, heterogeneous, dry, loose to medium dense, fine to medium grained, sub angular to sub rounded. Inclusions of sandstone gravels (increasing with depth)	SS_38 0-0.1 PID = 2.3 ppm	No odours, stains or ACM noted
		0.15			Borehole SS_38 terminated at 0.15m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 12-10-18

SS_39

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.7
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Sandy Silty CLAY- brown, grey and yellow, heterogeneous, damp, loose, fine to medium grained, inclusions of fine rootlets and fine sandtone gravels	SS_39 0.0-0.1 PID = 0.5 ppm	No odours, stains or ACM noted
		0.20		SC	Clayey SAND - yellow, red and grey, heterogeneous, damp, medium dense. Inclusions of large sandstone boulders.	SS_39 0.2-0.3 PID = 0.9 ppm	No odours, stains or ACM noted
	0.5						
		0.70			Borehole SS_39 terminated at 0.7m		End of hole at refusal on sandstone
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_40

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: C Bennett
Contractor:
Total Hole Depth (mbgs): 0.1
Pit Dimension (m3):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND - orange, yellow, heterogeneous, wet, loose to medium dense, fine grained, sub rounded. Inclusions of road base gravels and fine to medium sandstone chunks.	SS_40 0.0-0.1 PID = 1.2 ppm	No odours, stains or ACM noted
		0.10			Test Pit SS_40 terminated at 0.1m		End of hole at refusal on sandstone
	0.5						
	1.0						

SS_41

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 1.3
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Sandy Silty CLAY - brown, heterogeneous, damp, medium plasticity, soft. Inclusions of rootlets, roots and trace sandstone gravels.	SS_41 0.0-0.1 PID = 3.8 ppm	No odours, stains or ACM noted
						SS_41 0.2-0.3 PID = 1.6 ppm	
	0.5	0.30		SC	Clayey SAND - yellow, red and grey, heterogeneous, damp, medium dense. Inclusions of large sandstone boulders.		No odours, stains or ACM noted
	1.0					SS_41 1.0-1.1 PID = 1 ppm	
	1.5	1.30			Borehole SS_41 terminated at 1.3m		End of hole at refusal on sandstone
	2.0						
	2.5						
	3.0						
	3.5						

SS_42

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 1.2
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Sandy Silty CLAY - brown, heterogeneous, damp, medium plasticity, soft. Inclusions of rootlets.	SS_42 0.0-0.1 PID = 0.9 ppm	No odours, stains or ACM noted
						SS_42 0.2-0.3 PID = 1.4 ppm	
		0.30		SC	Clayey SAND - yellow, red and grey, heterogeneous, damp, medium dense. Inclusions of large sandstone boulders.		No odours, stains or ACM noted
	0.5						
	1.0					SS_42 1.0-1.1 PID = 1.6 ppm	
		1.20			Borehole SS_42 terminated at 1.2m		End of hole at refusal on sandstone
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_43

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.2
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty CLAY - brown, heterogeneous, damp, low plasticity, soft. Inclusions of rootlets.	SS_43 0.0-0.1 PID = 2.4 ppm	No odours, stains or ACM noted
		0.20			Borehole SS_43 terminated at 0.2m		End of hole at refusal on sandstone

0.5
1.0
1.5
2.0
2.5
3.0
3.5

SS_44

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty CLAY - brown, heterogeneous, damp, low plasticity, soft. Inclusions of rootlets.	SS_44 0.0-0.1 PID = 0.1 ppm	No odours, stains or ACM noted
		0.10		Fill	Gravelly CLAY - black, brown, heterogeneous, dry, low to medium plasticity, well graded with inclusions of angular, road base gravels.		No odours, stains or ACM noted
						SS_44 0.2-0.3 PID = 0.3 ppm	
		0.30			Borehole SS_44 terminated at 0.3m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_45

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 1.4
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty CLAY - brown, heterogeneous, damp, low plasticity, soft. Inclusions of rootlets, some sandstone gravels.	SS_45 0.0-0.1 PID = 1.8 ppm	No odours, stains or ACM noted
		0.20		SG	Gravelly SAND - brown, heterogeneous, dry, loose to medium dense, medium grained, withi inclusions of well graded angular sandstone gravels.	SS_45 0.2-0.3 PID = 1.9 ppm	No odours, stains or ACM noted
	0.5						
	1.0					SS_45 1.3-1.4 PID = 0.6 ppm	
		1.40			Borehole SS_45 terminated at 1.4m		End of hole at refusal on sandstone
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_46

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: C Bennett
Contractor:
Total Hole Depth (mbgs): 0.1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				SM	Silty SAND - brown, heterogeneous, dry, fine grained, medium dense, with inclusions of fine to medium sandstone gravels.	SS_46 0-0.1 PID = 0.4 ppm	No odours, stains or ACM noted
		0.10			Borehole SS_46 terminated at 0.1m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_47

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: C Bennett
Contractor:
Total Hole Depth (mbgs): 0.1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				SM	Silty SAND - brown, heterogeneous, dry, fine grained, medium dense, with inclusions of fine to medium sandstone gravels.	SS_47 0-0.1 PID = 0.6 ppm	No odours, stains or ACM noted
		0.10			Borehole SS_47 terminated at 0.1m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_48

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.5
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty CLAY - brown, heterogeneous, damp, low plasticity, soft. Inclusions of rootlets, and some sub-rounded sandstone gravels.	SS_48 0.0-0.1 PID = 0.9 ppm	No odours, stains or ACM noted
		0.20		SG	Gravelly SAND - yellow, heterogeneous, damp, medium grained, medium dense, well graded, with some sandstone gravels.	SS_48 0.2-0.3 PID = 0.9 ppm	No odours, stains or ACM noted
	0.5	0.50			Borehole SS_48 terminated at 0.5m		End of hole at refusal on sandstone
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_49

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty CLAY; brown, damp, medium dense, low plasticity, soft. Inclusions; grass, roots, some sandstone gravels.	SS_49 0.0-0.1 PID = 1 ppm	No odours, stains or ACM noted
		0.20		SP	SAND - brown, yellow, heterogeneous, damp, medium dense, with inclusions of weathered sandstone gravels.	SS_49 0.2-0.3 PID = 1 ppm	No odours, stains or ACM noted
	0.5						
	1.0					SS_49 0.9-1.0 PID = 1 ppm	
		1.00			Borehole SS_49 terminated at 1m		End of hole at refusal on sandstone
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_50

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty CLAY - brown, heterogeneous, damp, low plasticity, soft. Inclusions of rootlets and some angular road base gravels.	SS_50 0.0-0.1 PID = 0.4 ppm	No odours, stains or ACM noted
						SS_50 0.2-0.3 PID = 0.6 ppm	
		0.30			Borehole SS_50 terminated at 0.3m		End of hole at refusal on sandstone

0.5
1.0
1.5
2.0
2.5
3.0
3.5

SS_51

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.2
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Gravelly Silty CLAY - brown, heterogeneous, damp, low plasticity, firm. Inclusions of angular road base gravels, rootlets, organic matter (twigs, branches) and trace plastic	SS_51 0.0-0.1 PID = 0.4 ppm	No odours, stains or ACM noted
		0.20			Borehole SS_51 terminated at 0.2m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_52

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND - brown, heterogeneous, dry to damp, loose. Inclusions of some sandstone gravels.	SS_52 0.0-0.1 PID = 0.4 ppm	No odours, stains or ACM noted
						SS_52 0.2-0.3 PID = 0.3 ppm	
		0.30			Borehole SS_52 terminated at 0.3m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_53

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 20-Sep-18
Logged By: J Cranson
Contractor: Ken Coles
Total Hole Depth (mbgs): 0.4
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty CLAY - brown, heterogeneous, dry, low plasticity, firm Inclusions of rootlets.	SS_53 0.0-0.1 PID = 0.1 ppm	No odours, stains or ACM noted
						SS_53 0.2-0.3 PID = 0.1 ppm	
		0.40			Borehole SS_53 terminated at 0.4m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_54

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 21-Sep-18
Logged By: C Bennett
Contractor:
Total Hole Depth (mbgs): 0.1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Sandy SILT - brown, heterogeneous, dry, soft, non plastic. Inclusions of rootlets and fine road base gravels.	SS_54 0.0-0.1 PID = 0.9 ppm	No odours, stains or ACM noted
		0.10			Borehole SS_54 terminated at 0.1m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_55

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 21-Sep-18
Logged By: C Bennett
Contractor:
Total Hole Depth (mbgs): 0.1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Sandy SILT - brown, heterogeneous, dry, soft, non plastic. Inclusions of rootlets and fine road base gravels.	SS_55 0.0-0.1 PID = 1.2 ppm	No odours, stains or ACM noted
		0.10			Borehole SS_55 terminated at 0.1m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_56

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: R Lill
Contractor:
Total Hole Depth (mbgs): 0.4
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Sandy SILT - brown, heterogeneous, damp, non plastic, firm, inclusions of rootlets and coarse gravels	SS_56 0.0-0.1 PID = 1.3 ppm	No odours, stains or ACM noted
		0.20		Fill	Silty SAND - dark brown, heterogeneous, damp, loose to medium dense.	SS_56 0.2-0.3 PID = 1.1 ppm	No odours, stains or ACM noted
	0.5	0.40			Borehole SS_56 terminated at 0.4m		End of hole at refusal on sandstone
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_57

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: R Lill
Contractor:
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND - dark brown, heterogeneous, damp, loose to medium dense, inclusions of trace sandstone gravels	SS_57 0.0-0.1 PID = 2.3 ppm	No odours, stains or ACM noted
		0.30			Borehole SS_57 terminated at 0.3m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_58

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: R Lill
Contractor:
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND - brown, heterogeneous, damp, loose, poorly sorted, inclusions of rootlets and fine sandstone gravels.	SS_58 0.0-0.1 PID = 3.6 ppm	No odours, stains or ACM noted
						SS_58 0.2-0.3 PID = 2.4 ppm	
		0.30			Borehole SS_58 terminated at 0.3m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_59

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: R Lill
Contractor:
Total Hole Depth (mbgs): 0.2
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND - brown, heterogeneous, damp, loose, poorly sorted, inclusions of rootlets and fine sandstone gravels.	SS_59 0.0-0.1 PID = 1.7 ppm	No odours, stains or ACM noted
		0.20			Borehole SS_59 terminated at 0.2m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_60

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: R Lill
Contractor:
Total Hole Depth (mbgs): 0.2
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Clayey SAND - brown, heterogeneous, dry to damp, medium dense, inclusions of fine sandstone gravels.	SS_60 0.0-0.1 PID = 4.1 ppm	No odours, stains or ACM noted
		0.20			Borehole SS_60 terminated at 0.2m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_61

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: R Lill
Contractor:
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND - brown, heterogeneous, damp, loose, poorly sorted, inclusions of rootlets and fine sandstone gravels.	SS_61 0.0-0.1 PID = 2.1 ppm	No odours, stains or ACM noted
						SS_61 0.2-0.3 PID = 0.6 ppm	
	0.5	0.30			Borehole SS_61 terminated at 0.3m		End of hole at refusal on sandstone
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_62

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: R Lill
Contractor:
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Sandy SILT - brown, heterogeneous, damp, non plastic, firm, inclusions of rootlets	SS_62 0.0-0.1 PID = 2.4 ppm	No odours, stains or ACM noted
						SS_62 0.2-0.3 PID = 1.8 ppm	
		0.30			Borehole SS_62 terminated at 0.3m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_63

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: R Lill
Contractor:
Total Hole Depth (mbgs): 0.4
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Sandy SILT - brown, heterogeneous, damp, non plastic, soft to firm, inclusions of rootlets, woodchips and sticks	SS_63 0.0-0.1 PID = 1.2 ppm	No odours, stains or ACM noted
						SS_63 0.2-0.3 PID = 0.9 ppm	
	0.5	0.40			Borehole SS_63 terminated at 0.4m		End of hole at refusal on sandstone
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_64

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: R Lill
Contractor:
Total Hole Depth (mbgs): 0.4
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND - dark brown, heterogeneous, damp, poorly sorted, inclusions of rootlets.	SS_64 0.0-0.1 PID = 2.4 ppm	No odours, stains or ACM noted
		0.20		SM	Silty SAND - brown mottled red, heterogeneous, damp, poorly sorted. Inclusions of fine sandstone gravels	SS_64 0.2-0.3 PID = 1.8 ppm	No odours, stains or ACM noted
		0.40			Borehole SS_64 terminated at 0.4m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_65

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: R Lill
Contractor:
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Sandy SILT - dark brown, heterogeneous, damp to wet, non plastic, soft to firm, inclusions of rootlets, and organic matter (bark, sticks)	SS_65 0.0-0.1 PID = 1.9 ppm	No odours, stains or ACM noted
		0.10		SP	SAND - light to medium brown, heterogeneous, damp,poorly sorted, inclusions of fine sandstone gravels.		No odours, stains or ACM noted
						SS_65 0.2-0.3 PID = 1.2 ppm	
		0.30			Borehole SS_65 terminated at 0.3m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_66

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: R Gray
Contractor:
Total Hole Depth (mbgs): 0.7
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Hand Auger				Fill	Silty SAND - brown, heterogeneous, damp, poorly sorted, inclusions of rootlets.	SS_66 0.0-0.1 PID = 0.9 ppm	No odours, stains or ACM noted
		0.10		SM	Silty SAND - brown, heterogeneous, damp to wet (increasing moisture with depth), poorly sorted, inclusions of fine sandstone gravels.		No odours, stains or ACM noted
						SS_66 0.2-0.3 PID = 0.5 ppm	
	0.5						
						SS_66 0.5-0.6 PID = 0.4 ppm	
		0.70			Borehole SS_66 terminated at 0.7m		End of hole at refusal on sandstone
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_67

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: R Gray
Contractor:
Total Hole Depth (mbgs): 0.2
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND - brown, heterogeneous, damp to wet, loose, poorly sorted, inclusions of rootlets, fine road base gravels and sandstone gravels.	SS_67 0.0-0.1 PID = 0.9 ppm	No odours, stains or ACM noted
		0.20			Borehole SS_67 terminated at 0.2m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 12-10-18

SS_68

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: C Bennett
Contractor:
Total Hole Depth (mbgs): 0.1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Sandy Silty CLAY - yellow brown, heterogeneous, dry, low plasticity, soft, inclusions of fine to medium sandstone gravels.	SS_68 0.0-0.1 PID = 1.8 ppm	No odours, stains or ACM noted
		0.10			Borehole SS_68 terminated at 0.1m		End of hole at program depth
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_69

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: C Bennett
Contractor:
Total Hole Depth (mbgs): 0.1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Sandy Silty CLAY - yellow brown, heterogeneous, dry, low plasticity, soft, inclusions of fine to medium sandstone gravels.	SS_69 0.0-0.1 PID = 1.2 ppm	No odours, stains or ACM noted
		0.10			Borehole SS_69 terminated at 0.1m		End of hole at program depth
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_70

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: C Bennett
Contractor:
Total Hole Depth (mbgs): 0.1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty CLAY - brown, heterog dry, low plasticity, firm, with inclusions of sandstone gravels and rootlets	SS_70 0.0-0.1 PID = 1.6 ppm	No odours, stains or ACM noted
		0.10			Borehole SS_70 terminated at 0.1m		End of hole at program depth
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_71

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: C Bennett
Contractor:
Total Hole Depth (mbgs): 0.1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Sandy SILT - brown, heterogeneous, dry, low plasticity, soft, with inclusions of trace sandstone gravels.	SS_71 0.0-0.1 PID = 1.9 ppm	No odours, stains or ACM noted
		0.10			Borehole SS_71 terminated at 0.1m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_72

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: C Bennett
Contractor:
Total Hole Depth (mbgs): 0.1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Sandy SILT - brown, heterogeneous, dry, low plasticity, soft, with inclusions of fine angular road base gravels and trace sandstone gravels.	SS_72 0.0-0.1 PID = 2.1 ppm	No odours, stains or ACM noted
		0.10			Borehole SS_72 terminated at 0.1m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

SS_73

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 28-Sep-18
Logged By: C Bennett
Contractor:
Total Hole Depth (mbgs): 0.1
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Sandy SILT - brown, heterogeneous, dry, low plasticity, soft, with inclusions of rootlets and trace sandstone gravels.	SS_73 0.0-0.1 PID = 1.9 ppm	No odours, stains or ACM noted
		0.10			Borehole SS_73 terminated at 0.1m		End of hole at refusal on sandstone
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						

Noel Arnold & Associates
TEST PIT LOG REPORT

Client:	State Property Authority	Test Pit Reference:	**MW01 (monitoring well installed)**
Job Name:	UPSS Investigation Mooney Mooney	Location:	Central, North of Site - On Concrete Pad
Site Address:	Lot 3 DP239249, Pacific Highway, Mooney Mooney	Logged by:	SJC
Job/Client Number:	J119655	Checked by:	JH
Contractor:	Matrix	Date Commenced:	23/07/2013
Drill Rig:	Truck mounted rig	Date Completed:	23/07/2013

Drilling Method	DTW	Depth (m)	Material Description	Field Sample Analyzed	PID (ppm)	Comments:
			Concrete pavement			Concrete pavement from 0-0.14m
		0.5	Sand/clay, soft, loose, moist, low/hard plasticity, light brown/brown	S01-0.7	0.9	Fill with sandstone; some clay throughout
		1.0	Sand/clay, soft, loose, moist, low/hard plasticity, light brown/brown	S02-0.8	0.7	Fill ; Small rocks and sandstone cobble
		1.5	Sand/clay, soft/strong, loose, moist, medium plasticity, dark rock/orange matter	S02(DUP1)-1.2		Natural soil, Clay content increasing with depth
		2.0	Sand/clay, strong, loose, slighty moist, medium plasticity, dark red/light grey			Natural; Light grey band of shale
		2.5				
		3.0	Sand/clay, strong, mildly dense, slightly moist, medium plasticity, light brown/dark red	S03-3.0		Natural; Moisture content increasing with depth beyond 2.9m; Light grey band of shale
		3.5	Sand/ clay, strong, mildly dense, slightly moist, medium plasticity, dark red/light grey	S03(DUP3)-3.1	11.7	Natural; Chunks of clay; Light grey band of shale
		4.0				
		4.5	Clayey sand, strong, mildly dense, slightly moist, medium plasticity, dark red/light grey			Natural; Light grey band of shale; Light grey with increasing depth
		5.0				
		5.5				
		6.0	Sand, slightly moist, dark red/brown			Natural; weathered sandstone with shale bands (light grey)
		6.5				
		7.0				
		7.5	sandstone			Decreasing from dark red to pink
		8.0				
		8.5	sandstone			Increasing from pink to dark red; Groundwater depth approximately 8.5m
		9.0				
		9.5	sandstone			Losing red tinge and becoming brown;
		10.0				
End of hole at 10.0m						

Noel Arnold & Associates
TEST PIT LOG REPORT

Client:	State Property Authority	Test Pit Reference:	**MW02**
Job Name:	UPSS Investigation Mooney Mooney	Location:	North End of Eastern Boundary
Site Address:	Lot 3 DP239249, Pacific Highway, Mooney Mooney	Logged by:	SJC
Job/Client Number:	J119655	Checked by:	JH
Contractor:	Matrix	Date Commenced:	23/07/2013
Drill Rig:	Truck mounted rig	Date Completed:	23/07/2013

Drilling Method	DTW	Depth (m)	Material Description	Field Sample Analysed	PID (ppm)	Comments:
Backhoe		0.5	Ashphalt			Ashphalt from 0-0.4m
		1.0	Sand/clay, soft, loose, moist, medium plasticity, brown/grey		0.3	Fill
				S01-0.8		
		1.5		S02-1.2	0.4	Fill; medium sandstone chunks
			Sand/clay, soft, mildly dense, moist, low plasticity, brown/tan			Natural
		2.0				
		2.5	Clayey sand, strong, moist, medium plasticity, dark red/brown			Natural
		3.0		S03-3.0	0.6	
		3.5				
		4.0	Clayey sand, soft, loose, moist, low plasticity, dark red/dark brown			Natural; Decreasing red colour with depth, increasing grey colour with depth
		4.5				
		5.0				
		5.5	Sand/clay, soft, loose, moist, medium plasticity, pink/grey			Natural
		6.0				
			Sand/clay, strong, loose, moist, medium plasticity, grey/pink			Natural
		6.5	Sand/clay, soft, loose, moist, low plasticity, dark red/dark brown			Natural; Increasing red colour with depth
		7.0				
		7.5	sandstone			Red/pink diminishing; Rocks, sandstones
		8.0				
		8.5	sandstone			Pink colour increasing with depth again; Groundwater depth approximately between 8.0-8.5m
		9.0				
		9.5				
		10.0	sandstone			
		10.5				
End of hole at 10.5m						

Noel Arnold & Associates
TEST PIT LOG REPORT

Client:	State Property Authority	Test Pit Reference:	**MW03**
Job Name:	UPSS Investigation Mooney Mooney	Location:	North of Site (Exterior)
Site Address:	Lot 3 DP239249, Pacific Highway, Mooney Mooney	Logged by:	SJC
Job/Client Number:	J119655	Checked by:	JH
Contractor:	Matrix	Date Commenced:	23/07/2013
Drill Rig:	Truck mounted rig	Date Completed:	23/07/2013

Drilling Method	DTW	Depth (m)	Material Description	Field Sample Analysed	PID (ppm)	Comments:
			Silt, moist, low plasticity, dark brown/brown	S01-0.2	0.0	Grass: Topsoil
		0.5	Sand/clay, soft, loose, moist, medium plasticity, brown/light brown,			
		1.0	Clayey sand, soft, loose, very moist, medium plasticity, brown/light brown			Fill; very moist at 0.9
		1.5	Sand/clay, strong, moist, medium plasticity, dark brown/brown	S02-0.9	0.1	Natural; Sandstone chunks
		2.0	Clayey sand, soft, loose, moist, medium plasticity, dark brown/red	S03-1.8	0.6	Natural
		2.5	Sand/clay, soft, loose, moist, medium plasticity, red/brown			Natural; Increasing red colour with depth
		3.0				
		3.5	Sand/clay, soft, loose, moist, low plasticity, red/light grey	S04-3.5	1.9	Natural; Increasing red colour with depth; Slight hydrocarbon odour at 3.0m
		4.0				
		4.5	Sand, very dense, moist, dark red/light grey			Natural; Sandstone; Air hammer commenced
		5.0				
		5.5	Sand/clay, strong, mildly dense, moist, medium plasticity, red/grey			Natural; Band of clay material
		6.0	Sandstone	S05-0.4	0.4	Natural; Very faint hydrocarbon odour; Sandstone
		6.5				
		7.0				
		7.5	Sandstone			Natural; Slight hydrcarbon odour; Decreasing red colour and increasing orange colour with depth; Sandstone
		8.0				
		8.5	Sandstone			Natural; Very faint hydrocarbon odour; Groundwater at approximately 8.5m
		9.0				
		9.5	Sandstone			Natural; Very faint hydrocarbon odour
		10.0				
End of hole at 10.0m						

GW_01

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: E Howley
Contractor: Terratest
Total Hole Depth (mbgs): 3
Bore Diameter (mm): 150

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Water Level Initial (mbgs): 1.5
Surface Finish: Roadbox
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 0.8
Screen Bottom Depth (mbgs): 3

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger	▼		0			Fill	Gravelly SAND - dark brown, heterogeneous, damp, loose to medium dense, fine to medium grained	GW_01 0.0-0.1 PID = 4.3 ppm GW_01 0.4-0.5 PID = 3.9 ppm	No odours, stains, or ACM noted
			1	0.70		SC	Clayey SAND - brown, heterogeneous, moist, medium dense, inclusions of medium to large sandstone boulders	GW_01 0.9-1.0 PID = 2.1 ppm	No odours, stains, or ACM noted
			2	1.50		SANDSTONE	SANDSTONE (Weathered) - red, grey, heterogeneous, hard, medium grained.		No odours, stains, or ACM noted
			3	3.00			Borehole GW_01 terminated at 3m		End of hole at program depth
			4						
			5						
			6						
			7						
			8						
			9						
			10						

GW_02

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: E Howley
Contractor: Terratest
Total Hole Depth (mbgs): 5
Bore Diameter (mm): 150

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Water Level Initial (mbgs): 3.2
Surface Finish: Roadbox
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 2
Screen Bottom Depth (mbgs): 5

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger						Fill	Silty SAND - brown, heterogeneous, dry, loose, inclusions of rootlets and roganic matter (sticks, bark)	GW_02 0.0-0.1 PID = 4 ppm	No odours, stains, or ACM noted
				0.10		SM-SG	Silty Gravelly SAND - brown, heterogeneous, dry, loose to medium dense, with inclusions of trace sandstone gravels		No odours, stains, or ACM noted
				0.50		SANDSTONE	SANDSTONE (Weathered) - red, grey, brown heterogeneous, soft to hard, damp to wet (increasing moisture with depth)	GW_02 0.4-0.5 PID = 3.9 ppm	No odours, stains, or ACM noted
			1						
			2						
			3						
Air Hammer				3.50		SANDSTONE	SANDSTONE (Weathered) - red, grey, heterogeneous, very hard, dry to damp		No odours, stains, or ACM noted
			4						
			5						
				5.00			Borehole GW_02 terminated at 5m		End of hole at program depth
			6						
			7						
			8						
			9						
			10						

GW_03

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: R Lill
Contractor: Terratest
Total Hole Depth (mbgs): 10
Bore Diameter (mm): 150

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Water Level Initial (mbgs): 8
Surface Finish: Roadbox
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 5
Screen Bottom Depth (mbgs): 10

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger			0			Fill	Silty SAND - light to dark brown, heterogeneous, moist, loose to medium dense (increasing density with depth), fine grained.	GW_03 0.0-0.1 PID = 9.8 ppm	No odours, stains, or ACM noted
									No odours, stains, or ACM noted
								GW_03 0.4-0.5 PID = 9.8 ppm	
			1					GW_03 0.9-1.0 PID = 6.8 ppm	
			2					GW_03 1.9-2.0 PID = 6 ppm	
			3					GW_03 2.9-3.0 PID = 4.8 ppm	
				3.00		SC	Clayey SAND - dark brown, heterogeneous, moist, medium dense, inclusions of highly weathered sandstone gravels		No odours, stains, or ACM noted
				3.50		SANDSTONE	SANDSTONE (Highly Weathered) - red, white, heterogeneous, soft, damp	GW_03 3.4-3.5 PID = 3.1 ppm	
			4						
			5						
Air Hammer				5.50		SANDSTONE	SANDSTONE (Weathered) - orange, red, grey, heterogeneous, hard, damp to wet (increasing moisture with depth)		No odours, stains, or ACM noted
	▶		6						
			7						
			8						
			9						
			10						
				10.00			Borehole GW_03 terminated at 10m		End of hole at program depth

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GW_04

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: E Howley
Contractor: Terratest
Total Hole Depth (mbgs): 3.5
Bore Diameter (mm): 150

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Water Level Initial (mbgs): 1
Surface Finish: Roadbox
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 0.5
Screen Bottom Depth (mbgs): 3.5

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger	▶		1			Fill	Silty SAND - dark brown, heterogeneous, damp, loose, inclusions of rootlets	GW_04 0.0-0.1 PID = 13.2 ppm	No odours, stains, or ACM noted
				0.20		SG	Gravelly SAND - yellow, light brown, heterogeneous, loose, fine to medium grained, with inclusions of crushed and higly weathered sandstone gravels	GW_04 0.4-0.5 PID = 11.1 ppm	
			2	1.50		SANDSTONE	SANDSTONE (Weathered) -yellow, grey, heterogeneous, damp (increasing moisture with depth), fine to medium grained.		No odours, stains, or ACM noted
			3	3.50			Borehole GW_04 terminated at 3.5m		End of hole at program depth
			4						
			5						
			6						
			7						
			8						
			9						
			10						

GW_05

Project Number: 54933
Client: Property NSW
Project Name: Peat Island ESA
Site Address: Peat Island, Mooney Mooney, NSW

Date: 19-Sep-18
Logged By: E Howley
Contractor: Terratest
Total Hole Depth (mbgs): 3.5
Bore Diameter (mm): 150

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area/Permit#:
Reference Level: Ground Surface
Elevation (m):

Water Level Initial (mbgs): 1.4
Surface Finish: Roadbox
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 0.5
Screen Bottom Depth (mbgs): 3.5

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger	▼		0			Fill	Silty SAND - dark brown, heterogeneous, dry to damp, loose, inclusions of fine sandstone gravels, shells and tile fragments	GW_05 0.0-0.1 PID = 2.6 ppm	No odours, stains, or ACM noted
								GW_05 0.4-0.5 PID = 11.4 ppm	
			1	0.50		SG	Gravelly SAND - orange, brown, heterogeneous, damp, loose to medium dense, fine to medium grained, inclusions of highly weathered crushed sandstone and fine to medium sandstone gravels		No odours, stains, or ACM noted
			2	1.40		SP	SAND - grey, yellow, homogeneous, wet (saturated), soft, fine grained		No odours, stains, or ACM noted
			3	3.00		SC	Clayey SAND - orange, grey, heterogeneous, wet, loose to medium dense		No odours, stains, or ACM noted
				3.50			Borehole GW_05 terminated at 3.5m		End of hole at program depth
			4						
			5						
			6						
			7						
			8						
			9						
			10						

Appendix F Laboratory Certificates and Chain of Custody Documentation

016258

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54933	LABORATORY BATCH NO.:
PROJECT NAME: Peat Island	SAMPLERS: CB
DATE NEEDED BY: St TAT	QC LEVEL: NEPM (2013)

9

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) ....Sburrows........@jbsg.com.au; (3) ....cbennett........@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

	SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
1	QC 180918	Soil	18.9.18		J+B		X			

Envirolab Services
25 Research Drive
Croydon South VIC 3136
Ph: (03) 9763 2500

ENVIROLAB

Job No: 14896
Date Received: 20/9/18
Time Received: 12.07
Received By: CP
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

3.5°C

RELINQUISHED BY:		METHOD OF SHIPMENT:	RECEIVED BY:		FOR RECEIVING LAB USE ONLY:
NAME: CB	DATE: 18/9/18	CONSIGNMENT NOTE NO.	NAME: Ulong	DATE: 18/9	COOLER SEAL – Yes....... No .... Intact .... Broken ....
OF: JBS&G		TRANSPORT CO.	OF:		COOLER TEMP .... deg C
NAME: DJONES	DATE: 20/9/18	CONSIGNMENT NOTE NO.	NAME: COLIN. P.	DATE: 20/9	COOLER SEAL – Yes...... No .... Intact.......... Broken ....
OF: EUROFINS		TRANSPORT CO	OF: ELS		COOLER TEMP 3.5 deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph 03 9763 2500 fax 03 9763 2633
melbourne@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 14896

Client Details

Client	JBS & G Australia Pty Ltd
Attention	S Burrows
Address	1/50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**54933 - Peat Island**
Number of Samples	1 Soil
Date samples received	20/09/2018
Date completed instructions received	20/09/2018

Analysis Details

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

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

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

Report Details

Date results requested by	26/09/2018
Date of Issue	24/09/2018

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

Results Approved By
Chris De Luca, Senior Chemist

Authorised By

Pamela Adams, Laboratory Manager

Acid Extractable metals in soil		
Our Reference		14896-1
Your Reference	UNITS	QC180918
Date Sampled		18/09/2018
Type of sample		Soil
Date digested	-	21/09/2018
Date analysed	-	21/09/2018
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	10
Copper	mg/kg	21
Lead	mg/kg	92
Mercury	mg/kg	<0.1
Nickel	mg/kg	26
Zinc	mg/kg	21

Moisture		
Our Reference		14896-1
Your Reference	UNITS	QC180918
Date Sampled		18/09/2018
Type of sample		Soil
Date prepared	-	21/09/2018
Date analysed	-	24/09/2018
Moisture	%	4.7

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 12 hours.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	14896-1
Date digested	-			21/09/2018	[NT]	[NT]	[NT]	[NT]	21/09/2018	21/09/2018
Date analysed	-			21/09/2018	[NT]	[NT]	[NT]	[NT]	21/09/2018	21/09/2018
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	[NT]	[NT]	96	94
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	[NT]	[NT]	104	88
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	101	108
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	103	123
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	95	72
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	[NT]	[NT]	111	112
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	101	99
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	101	93

Result Definitions

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

Quality Control Definitions

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

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

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
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customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 201363

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	George Black, Joshua Cranson
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**54782, Basin BTP**
Number of Samples	3 Soil
Date samples received	21/09/2018
Date completed instructions received	21/09/2018

Analysis Details

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

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

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

Report Details

Date results requested by	28/09/2018
Date of Issue	26/09/2018

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Results Approved By
Jeremy Faircloth, Organics Supervisor
Long Pham, Team Leader, Metals
Nancy Zhang, Assistant Lab Manager

Authorised By

Jacinta Hurst, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		201363-3
Your Reference	UNITS	QC20180919-RG01
Date Sampled		19/09/2018
Type of sample		Soil
Date extracted	-	24/09/2018
Date analysed	-	25/09/2018
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	95

svTRH (C10-C40) in Soil		
Our Reference		201363-3
Your Reference	UNITS	QC20180919-RG01
Date Sampled		19/09/2018
Type of sample		Soil
Date extracted	-	24/09/2018
Date analysed	-	26/09/2018
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	92

Acid Extractable metals in soil		
Our Reference		201363-3
Your Reference	UNITS	QC20180919-RG01
Date Sampled		19/09/2018
Type of sample		Soil
Date prepared	-	24/09/2018
Date analysed	-	24/09/2018
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	9
Copper	mg/kg	39
Lead	mg/kg	110
Mercury	mg/kg	0.2
Nickel	mg/kg	5
Zinc	mg/kg	230
Selenium	mg/kg	<2

Moisture		
Our Reference		201363-3
Your Reference	UNITS	QC20180919-RG01
Date Sampled		19/09/2018
Type of sample		Soil
Date prepared	-	24/09/2018
Date analysed	-	25/09/2018
Moisture	%	9.4

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			24/09/2018	[NT]	[NT]	[NT]	[NT]	24/09/2018	[NT]
Date analysed	-			25/09/2018	[NT]	[NT]	[NT]	[NT]	25/09/2018	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	118	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	118	[NT]
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	[NT]	[NT]	115	[NT]
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	[NT]	[NT]	115	[NT]
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	118	[NT]
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	121	[NT]
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	120	[NT]
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	97	[NT]	[NT]	[NT]	[NT]	101	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			24/09/2018	[NT]	[NT]	[NT]	[NT]	24/09/2018	[NT]
Date analysed	-			25/09/2018	[NT]	[NT]	[NT]	[NT]	25/09/2018	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	92	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	90	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	92	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	90	[NT]
Surrogate o-Terphenyl	%		Org-003	90	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			24/09/2018	[NT]	[NT]	[NT]	[NT]	24/09/2018	[NT]
Date analysed	-			24/09/2018	[NT]	[NT]	[NT]	[NT]	24/09/2018	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	109	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	106	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Selenium	mg/kg	2	Metals-020	<2	[NT]	[NT]	[NT]	[NT]	100	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
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LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
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Laboratory Acceptance Criteria

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In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Enviolab

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54782	LABORATORY BATCH NO.:
PROJECT NAME: Basin B TP	SAMPLERS: JC
DATE NEEDED BY:	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) GBlach@jbsg.com.au; (3) JCranson@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	PAH	TPH/BTEX	BTEX	PFASs	ASBESTOS	SELENIUM	Phenols	Explosives	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
QC20180919-SC01	Soil	19-9-18		Jar + Bag + Ice		X											
QC " -SC02	↓	↓		↓													
QC 20180919-RC01	↓	↓		↓		X		X									
		19-9-18 as per ENV															

ENVIROLAB GROUP

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

Job No: 201363

~~Date Received:~~ 21-9-18
Time Received: 13:00
Received By: KG
Temp: Cool/Ambient
~~Cooling: Ice/Icepack~~
Security: ~~Intact/Broken/None~~

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: VLONG DATE: 19/9	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF:	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE: 1300 21-9-18	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF: ELS	COOLER TEMP 13-3 deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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

CERTIFICATE OF ANALYSIS 201466

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	C Bennett, S Burrows
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**54933, Put Island**
Number of Samples	2 Soil
Date samples received	24/09/2018
Date completed instructions received	24/09/2018

Analysis Details

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

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

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

Report Details

Date results requested by	02/10/2018
Date of Issue	27/09/2018

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Results Approved By
Long Pham, Team Leader, Metals

Authorised By

Jacinta Hurst, Laboratory Manager

Acid Extractable metals in soil			
Our Reference		201466-1	201466-2
Your Reference	UNITS	QC20180920-JC01	QC20180920-JC02
Date Sampled		20/09/2018	20/09/2018
Type of sample		Soil	Soil
Date prepared	-	25/09/2018	25/09/2018
Date analysed	-	25/09/2018	25/09/2018
Arsenic	mg/kg	<4	<4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	9	7
Copper	mg/kg	24	<1
Lead	mg/kg	50	9
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	14	<1
Zinc	mg/kg	62	3

Moisture			
Our Reference		201466-1	201466-2
Your Reference	UNITS	QC20180920-JC01	QC20180920-JC02
Date Sampled		20/09/2018	20/09/2018
Type of sample		Soil	Soil
Date prepared	-	25/09/2018	25/09/2018
Date analysed	-	26/09/2018	26/09/2018
Moisture	%	3.5	5.8

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			25/09/2018	1	25/09/2018	25/09/2018		25/09/2018	[NT]
Date analysed	-			25/09/2018	1	25/09/2018	25/09/2018		25/09/2018	[NT]
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	107	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	101	[NT]
Chromium	mg/kg	1	Metals-020	<1	1	9	8	12	104	[NT]
Copper	mg/kg	1	Metals-020	<1	1	24	27	12	112	[NT]
Lead	mg/kg	1	Metals-020	<1	1	50	47	6	106	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	103	[NT]
Nickel	mg/kg	1	Metals-020	<1	1	14	17	19	105	[NT]
Zinc	mg/kg	1	Metals-020	<1	1	62	62	0	101	[NT]

Result Definitions

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

Quality Control Definitions

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

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

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

[illegible] Envirolab

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: [illegible] 54933	LABORATORY BATCH NO.:
PROJECT NAME: [illegible] Port Island	SAMPLERS: JC
DATE NEEDED BY: S TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) [illegible] @jbsg.com.au; (3) [illegible] Cbennett @jbsg.com.au Sburrows@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	PAH	TPH/BTEX	BTEX	PFASs	ASBESTOS	SELENIUM	Phenols	Explosives									TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	NEPM/WA	NOTES:
QC20180920-JC01	Soil	20-9-18		Jar + Bag + Ice		X																			
〃 -JC02	〃	〃		〃																					

Envirolab Services
ENVIROLAB
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 201466
Date Received: 24.09.18
Time Received: 11:45
Received By: JD
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: [signature] DATE: 20.9.18 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: [illegible] DATE: 20-9-18 OF: Bensons Mut 6:00 PM	COOLER SEAL – Yes ...... No ...... Intact ...... Broken ...... COOLER TEMP ...... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: [illegible] DATE: 24.09.18 OF: ELS	COOLER SEAL – Yes ...... No ...... Intact ...... Broken ...... COOLER TEMP 14.1 deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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CERTIFICATE OF ANALYSIS 202081

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	C Bennett, S Burrows
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**54933, Peat Island**
Number of Samples	1 Water, 2 Soil
Date samples received	30/10/2018
Date completed instructions received	03/10/2018

Analysis Details

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

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

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

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

Report Details

Date results requested by	10/10/2018
Date of Issue	10/10/2018

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

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

Results Approved By
Long Pham, Team Leader, Metals
Lucy Zhu, Asbsestos Analyst
Steven Luong, Senior Chemist

Authorised By

Jacinta Hurst, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		202081-2	202081-3
Your Reference	UNITS	QC-CB20180928	QC0120180928
Date Sampled		28/09/2018	28/09/2018
Type of sample		Soil	Soil
Date extracted	-	04/10/2018	04/10/2018
Date analysed	-	08/10/2018	08/10/2018
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	109	115

svTRH (C10-C40) in Soil			
Our Reference		202081-2	202081-3
Your Reference	UNITS	QC-CB20180928	QC0120180928
Date Sampled		28/09/2018	28/09/2018
Type of sample		Soil	Soil
Date extracted	-	04/10/2018	04/10/2018
Date analysed	-	05/10/2018	05/10/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	80	80

PAHs in Soil		
Our Reference		202081-2
Your Reference	UNITS	QC-CB20180928
Date Sampled		28/09/2018
Type of sample		Soil
Date extracted	-	04/10/2018
Date analysed	-	08/10/2018
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	92

Organochlorine Pesticides in soil		
Our Reference		202081-2
Your Reference	UNITS	QC-CB20180928
Date Sampled		28/09/2018
Type of sample		Soil
Date extracted	-	04/10/2018
Date analysed	-	05/10/2018
HCB	mg/kg	<0.1
alpha-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	92

PCBs in Soil		
Our Reference		202081-2
Your Reference	UNITS	QC-CB20180928
Date Sampled		28/09/2018
Type of sample		Soil
Date extracted	-	04/10/2018
Date analysed	-	05/10/2018
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCLMX	%	92

Acid Extractable metals in soil			
Our Reference		202081-2	202081-3
Your Reference	UNITS	QC-CB20180928	QC0120180928
Date Sampled		28/09/2018	28/09/2018
Type of sample		Soil	Soil
Date prepared	-	04/10/2018	04/10/2018
Date analysed	-	05/10/2018	05/10/2018
Arsenic	mg/kg	<4	<4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	6	3
Copper	mg/kg	6	18
Lead	mg/kg	67	61
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	2	3
Zinc	mg/kg	50	43

Moisture			
Our Reference		202081-2	202081-3
Your Reference	UNITS	QC-CB20180928	QC0120180928
Date Sampled		28/09/2018	28/09/2018
Type of sample		Soil	Soil
Date prepared	-	04/10/2018	04/10/2018
Date analysed	-	05/10/2018	05/10/2018
Moisture	%	12	7.6

Asbestos ID - soils NEPM - ASB-001			
Our Reference		202081-2	202081-3
Your Reference	UNITS	QC-CB20180928	QC0120180928
Date Sampled		28/09/2018	28/09/2018
Type of sample		Soil	Soil
Date analysed	-	09/10/2018	09/10/2018
Sample mass tested	g	668.46	706.38
Sample Description	-	Brown sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–
FA and AF Estimation*	g	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001

VOCs in water		
Our Reference		202081-1
Your Reference	UNITS	QC20180928-01
Date Sampled		28/09/2018
Type of sample		Water
Date extracted	-	03/10/2018
Date analysed	-	04/10/2018
Dichlorodifluoromethane	µg/L	<10
Chloromethane	µg/L	<10
Vinyl Chloride	µg/L	<10
Bromomethane	µg/L	<10
Chloroethane	µg/L	<10
Trichlorofluoromethane	µg/L	<10
1,1-Dichloroethene	µg/L	<1
Trans-1,2-dichloroethene	µg/L	<1
1,1-dichloroethane	µg/L	<1
Cis-1,2-dichloroethene	µg/L	<1
Bromochloromethane	µg/L	<1
Chloroform	µg/L	<1
2,2-dichloropropane	µg/L	<1
1,2-dichloroethane	µg/L	<1
1,1,1-trichloroethane	µg/L	<1
1,1-dichloropropene	µg/L	<1
Cyclohexane	µg/L	<1
Carbon tetrachloride	µg/L	<1
Benzene	µg/L	<1
Dibromomethane	µg/L	<1
1,2-dichloropropane	µg/L	<1
Trichloroethene	µg/L	<1
Bromodichloromethane	µg/L	<1
trans-1,3-dichloropropene	µg/L	<1
cis-1,3-dichloropropene	µg/L	<1
1,1,2-trichloroethane	µg/L	<1
Toluene	µg/L	<1
1,3-dichloropropane	µg/L	<1
Dibromochloromethane	µg/L	<1
1,2-dibromoethane	µg/L	<1
Tetrachloroethene	µg/L	<1
1,1,1,2-tetrachloroethane	µg/L	<1
Chlorobenzene	µg/L	<1
Ethylbenzene	µg/L	<1
Bromoform	µg/L	<1

VOCs in water		
Our Reference		202081-1
Your Reference	UNITS	QC20180928-01
Date Sampled		28/09/2018
Type of sample		Water
m+p-xylene	µg/L	<2
Styrene	µg/L	<1
1,1,2,2-tetrachloroethane	µg/L	<1
o-xylene	µg/L	<1
1,2,3-trichloropropane	µg/L	<1
Isopropylbenzene	µg/L	<1
Bromobenzene	µg/L	<1
n-propyl benzene	µg/L	<1
2-chlorotoluene	µg/L	<1
4-chlorotoluene	µg/L	<1
1,3,5-trimethyl benzene	µg/L	<1
Tert-butyl benzene	µg/L	<1
1,2,4-trimethyl benzene	µg/L	<1
1,3-dichlorobenzene	µg/L	<1
Sec-butyl benzene	µg/L	<1
1,4-dichlorobenzene	µg/L	<1
4-isopropyl toluene	µg/L	<1
1,2-dichlorobenzene	µg/L	<1
n-butyl benzene	µg/L	<1
1,2-dibromo-3-chloropropane	µg/L	<1
1,2,4-trichlorobenzene	µg/L	<1
Hexachlorobutadiene	µg/L	<1
1,2,3-trichlorobenzene	µg/L	<1
Surrogate Dibromofluoromethane	%	76
Surrogate toluene-d8	%	101
Surrogate 4-BFB	%	100

vTRH(C6-C10)/BTEXN in Water		
Our Reference		202081-1
Your Reference	UNITS	QC20180928-01
Date Sampled		28/09/2018
Type of sample		Water
Date extracted	-	03/10/2018
Date analysed	-	04/10/2018
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	76
Surrogate toluene-d8	%	101
Surrogate 4-BFB	%	100

svTRH (C10-C40) in Water		
Our Reference		202081-1
Your Reference	UNITS	QC20180928-01
Date Sampled		28/09/2018
Type of sample		Water
Date extracted	-	04/10/2018
Date analysed	-	05/10/2018
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
TRH >C_{10} - C_{16}	µg/L	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50
TRH >C_{16} - C_{34}	µg/L	<100
TRH >C_{34} - C_{40}	µg/L	<100
Surrogate o-Terphenyl	%	83

PAHs in Water		
Our Reference		202081-1
Your Reference	UNITS	QC20180928-01
Date Sampled		28/09/2018
Type of sample		Water
Date extracted	-	04/10/2018
Date analysed	-	05/10/2018
Naphthalene	µg/L	<1
Acenaphthylene	µg/L	<1
Acenaphthene	µg/L	<1
Fluorene	µg/L	<1
Phenanthrene	µg/L	<1
Anthracene	µg/L	<1
Fluoranthene	µg/L	<1
Pyrene	µg/L	<1
Benzo(a)anthracene	µg/L	<1
Chrysene	µg/L	<1
Benzo(b,j+k)fluoranthene	µg/L	<2
Benzo(a)pyrene	µg/L	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1
Dibenzo(a,h)anthracene	µg/L	<1
Benzo(g,h,i)perylene	µg/L	<1
Benzo(a)pyrene TEQ	µg/L	<5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	109

HM in water - dissolved		
Our Reference		202081-1
Your Reference	UNITS	QC20180928-01
Date Sampled		28/09/2018
Type of sample		Water
Date prepared	-	04/10/2018
Date analysed	-	04/10/2018
Arsenic-Dissolved	µg/L	<1
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	1
Copper-Dissolved	µg/L	4
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	6
Zinc-Dissolved	µg/L	77

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).

Method ID	Methodology Summary
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-013	Water samples are analysed directly by purge and trap GC-MS.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
Date extracted	-			04/10/2018	[NT]	[NT]	[NT]	[NT]	04/10/2018	[NT]
Date analysed	-			08/10/2018	[NT]	[NT]	[NT]	[NT]	08/10/2018	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	104	[NT]
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	[NT]	[NT]	95	[NT]
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	[NT]	[NT]	104	[NT]
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	108	[NT]
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	110	[NT]	[NT]	[NT]	[NT]	107	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			04/10/2018	[NT]	[NT]	[NT]	[NT]	04/10/2018	[NT]
Date analysed	-			05/10/2018	[NT]	[NT]	[NT]	[NT]	05/10/2018	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	91	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	90	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	91	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	90	[NT]
Surrogate o-Terphenyl	%		Org-003	82	[NT]	[NT]	[NT]	[NT]	89	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
Date extracted	-			04/10/2018	[NT]	[NT]	[NT]	[NT]	04/10/2018	[NT]
Date analysed	-			08/10/2018	[NT]	[NT]	[NT]	[NT]	08/10/2018	[NT]
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	119	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	118	[NT]
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	125	[NT]
Anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	121	[NT]
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	119	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	[NT]	[NT]	[NT]	[NT]	137	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	95	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			04/10/2018	[NT]	[NT]	[NT]	[NT]	04/10/2018	[NT]
Date analysed	-			05/10/2018	[NT]	[NT]	[NT]	[NT]	05/10/2018	[NT]
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	77	[NT]
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-005	103	[NT]	[NT]	[NT]	[NT]	111	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			04/10/2018	[NT]	[NT]	[NT]	[NT]	04/10/2018	[NT]
Date analysed	-			05/10/2018	[NT]	[NT]	[NT]	[NT]	05/10/2018	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCLMX	%		Org-006	103	[NT]	[NT]	[NT]	[NT]	90	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
Date prepared	-			04/10/2018	[NT]	[NT]	[NT]	[NT]	04/10/2018	[NT]
Date analysed	-			05/10/2018	[NT]	[NT]	[NT]	[NT]	05/10/2018	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	102	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	102	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			03/10/2018	[NT]	[NT]	[NT]	[NT]	03/10/2018	[NT]
Date analysed	-			04/10/2018	[NT]	[NT]	[NT]	[NT]	04/10/2018	[NT]
Dichlorodifluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroform	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
2,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
1,1,1-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
1,1-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromomethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	125	[NT]
Bromodichloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
1,2-dibromoethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromoform	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	µg/L	2	Org-013	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Styrene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
o-xylene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
1,2,3-trichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-013	113	[NT]	[NT]	[NT]	[NT]	111	[NT]
Surrogate toluene-d8	%		Org-013	99	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate 4-BFB	%		Org-013	101	[NT]	[NT]	[NT]	[NT]	103	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			03/10/2018	[NT]	[NT]	[NT]	[NT]	03/10/2018	[NT]
Date analysed	-			04/10/2018	[NT]	[NT]	[NT]	[NT]	04/10/2018	[NT]
TRH C_6 - C_9	µg/L	10	Org-016	<10	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	[NT]	[NT]	[NT]	[NT]	104	[NT]
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	107	[NT]
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-016	113	[NT]	[NT]	[NT]	[NT]	111	[NT]
Surrogate toluene-d8	%		Org-016	99	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate 4-BFB	%		Org-016	101	[NT]	[NT]	[NT]	[NT]	103	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			04/10/2018	[NT]	[NT]	[NT]	[NT]	04/10/2018	[NT]
Date analysed	-			04/10/2018	[NT]	[NT]	[NT]	[NT]	04/10/2018	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	92	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	91	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	92	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	91	[NT]
Surrogate o-Terphenyl	%		Org-003	82	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: PAHs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			04/10/2018	[NT]	[NT]	[NT]	[NT]	04/10/2018	[NT]
Date analysed	-			05/10/2018	[NT]	[NT]	[NT]	[NT]	05/10/2018	[NT]
Naphthalene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Acenaphthylene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Phenanthrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Benzo(a)anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Benzo(b,j+k)fluoranthene	µg/L	2	Org-012	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	101	[NT]	[NT]	[NT]	[NT]	93	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			04/10/2018	[NT]	[NT]	[NT]	[NT]	04/10/2018	[NT]
Date analysed	-			04/10/2018	[NT]	[NT]	[NT]	[NT]	04/10/2018	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	[NT]	[NT]	104	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]

Result Definitions

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

Quality Control Definitions

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

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

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Report Comments

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

ENVIROLAB 1 of 1

016265

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54933	LABORATORY BATCH NO.:
PROJECT NAME: Peat Island	SAMPLERS: CB RL JC RG.
DATE NEEDED BY: STAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBENNET@jbsg.com.au; (3) SBURROWS@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

	SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TRH/BTEX	PAHS	Heavy Metals	OCP/PCB	Asbestos	VOCs	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	NEPM/WA	NOTES:
1	QC20180928-01	~~Soil~~ Water	28.9.18		2x VILES 1x METAL 1x AMBER +ICE		X	X	X			X			
2	QC-CB 20180928	Soil	↓		J + B		X	X	X	X	X				
3	QC01 20180928 ↳ labelled as QC20180928-02 S.J 3/10/18	↓	↓		↓		X		X		X				

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

ENVIROLAB

Job No: 202081

Date Received: 3/10/18 12:00

Time Received:

Received By: SOORYYS

Temp: Cool/Ambient

Cooling: Ice/Icepack

Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: CB DATE: 28/9/18 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Elvis D DATE: 28/9/18 OF: Eurofins	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP 2.76 deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: SOORYYS DATE: 3/10/18 12:00 OF: ELS	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP 13.8 deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

016255

1 of 3

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54933
PROJECT NAME: Peat Island
DATE NEEDED BY: St TAT
PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) sburrows@jbsg.com.au; (3) cbennett@jbsg.com.au

LABORATORY BATCH NO.:
SAMPLERS: CB
QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Please forward QC Sample to Enviolab.

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	TRH/BTEX	PAHs	Asbestos	OCPs/PCBs	pH, CEC, %Clay	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
SS01 0-0.1	Soil	18.9.18		J+B										
0.5-0.6						X	X				X			
0.9-1.0														
1.5-1.6														
SS02 0-0.1						X								
0.3-0.4						X	X							
0.5-0.6														
0.9-1.0														
1.5-1.6														
SS03 0-0.1														
0.5-0.6								X						
SS03 Frag	Frag			B				X				X		
SS04 0-0.1	Soil			J+B										
0.3-0.4						X								
SS05 0-0.1						X	X							
0.5-0.6														
0.9-1.0														
SS06 0-0.1						X	X							
0.5-0.6														

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: CB DATE: 18.9.18 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: DATE: 18/9 OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Othe

IMSO FormsO13 – Chain of Custody - Generic

G. 19/9

618500

016256

CHAIN OF CUSTODY

JBSG

PROJECT NO.: 54933	LABORATORY BATCH NO.:
PROJECT NAME: Peat Island	SAMPLERS: CB
DATE NEEDED BY: ST TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) sburrows@jbsg.com.au; (3) cbennett@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	TRH/BTEX	PAHs	Asb asbos	organics	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
SS06 0.9-1.0	Soil	18.9.18		J+B									
SS07 0-0.1						X	X	X		X			
0.5-0.6													
0.9-1.0													
SS08 0-0.1							X						
0.5-0.6													
0.9-1.0													
SS09 0-0.1						X	X						
0.4-0.5													
SS10 0-0.1						X	X						
0.4-0.5													
SS11 0-0.1				J+B ~~+ASS/APSS bag~~		X	X	X		X			
0.4-0.5				J+B+ASS/APSS bag									
SS12 0-0.1						X							
SS13 0-0.1													
0.4-0.5													
0.9-1.0													
SS14 0-0.1						X							
SS15 0-0.1						X							

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: CB DATE: 18.9.18 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: DATE: 18/9 OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Oth

3 of 3

016257

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54933	LABORATORY BATCH NO.:
PROJECT NAME: Peat Island	SAMPLERS: CB
DATE NEEDED BY: St TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) ...Sbarrows.....@jbsg.com.au; (3) ...obennet.....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	TRH/BTEX	PAHs	Asbestos	OCPs/PCBs	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
SS16 0-0.1	Soil	18.9.18		J+B		X							
0.5-0.6	↓	↓		↓		[redacted]							
0.9-1.0													
QA 180918						X							
TS	Water			Vials									
TB	↓	↓		Vials									

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: CB DATE: 18.9.18 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: DATE: 18/9 OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Oth

)16258

CHAIN OF CUSTODY

(9)

JBS&G

PROJECT NO.: 54933
PROJECT NAME: Peat Island
DATE NEEDED BY: St TAT

LABORATORY BATCH NO.:
SAMPLERS: CB
QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) .....Shannons.....@jbsg.com.au; (3) .....cheonnet/.....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
QC 180918	Soil	18.9.18		J+S		X			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: CB DATE: 18/9/18	CONSIGNMENT NOTE NO.	NAME: DATE: 18/9	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF:	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Enviro Sample Vic

From: Nibha Vaidya
Sent: Thursday, 11 October 2018 4:10 PM
To: Enviro Sample Vic; Tony Wong
Cc: Alena Bounkeua
Subject: Urgent 1 DAY TAT - FW: Eurofins | mgt Test Results - Report 620797 : Site PEAT ISLAND (54933)
Attachments: image001.png; 618500_summary.pdf; 620797_COC.pdf; image003.jpg; image004.jpg

Hi SR team – can you please address the below emails ASAP? I have unlocked both 618500 & 620797.

Please log all missing analysis on a 1 day TAT.

Kind Regards,

D.S 18/09

Nibha Vaidya
Phone : +61 2 9900 8415
Mobile : +61 499 900 805
Email : NibhaVaidya@eurofins.com

From: Claudia Bennett [mailto:cbennett@jbsg.com.au]
Sent: Thursday, 11 October 2018 3:42 PM
To: Nibha Vaidya
Cc: Scott Burrows
Subject: RE: Eurofins | mgt Test Results - Report 620797 : Site PEAT ISLAND (54933)

EXTERNAL EMAIL*

Hi Nibha, GW22 : 9e25567

I have also noticed, that we submitted sample SS01 0.5-0.6 for CEC, but received a result for conductivity instead.

Is there a possibility we can organize an analysis for Cation Exchange Capacity for this sample please?

Thanks and kind regards,
Claudia

Claudia Bennett | Environmental Consultant | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane | Canberra | Darwin | Wollongong
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0403 351 446| E: cbennett@jbsg.com.au | W: www.jbsg.com.au
Contaminated Land | Groundwater Remediation | Environmental Approvals | Auditing and Compliance | Hygiene and Hazardous Materials | Due Diligence and Liability | Stakeholder and Risk Management

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Claudia Bennett
Project name: PEAT ISLAND
Project ID: 54933
COC number: Not provided
Turn around time: 1 Day
Date/Time received: Sep 18, 2018 6:05 PM
Eurofins | mgt reference: **618500**

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 | mgt Sample Receipt : 8.1 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.

☑ Split sample sent to requested external lab.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

TS/TB NOT RECEIVED

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Claudia Bennett - CBennett@jbsg.com.au.

Note: A copy of these results will also be delivered to the general JBS & G Australia (NSW) P/L email address.

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Melbourne
2-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 618500
Phone: 02 8245 0300
Fax:

Received: Sep 18, 2018 6:05 PM
Due: Oct 12, 2018
Priority: 1 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
External Laboratory																		
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
1	SS01 0.5-0.6	Sep 18, 2018		Soil	M18-Se25567	X				X				X	X	X	X	X
2	SS02 0-0.1	Sep 18, 2018		Soil	M18-Se25568									X		X		
3	SS02 0.3-0.4	Sep 18, 2018		Soil	M18-Se25569										X	X		X
4	SS03 0.5-0.6	Sep 18, 2018		Soil	M18-Se25570		X											
5	SS03 FRAG	Sep 18, 2018		Building Materials	M18-Se25571			X										
6	SS04 0.3-0.4	Sep 18, 2018		Soil	M18-Se25572									X		X		
7	SS05 0-0.1	Sep 18, 2018		Soil	M18-Se25573									X	X	X		X
8	SS06 0-0.1	Sep 18, 2018		Soil	M18-Se25574									X	X	X		X
9	SS07 0-0.1	Sep 18, 2018		Soil	M18-Se25575						X	X	X	X	X	X		X

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Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
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NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 618500
Phone: 02 8245 0300
Fax:

Received: Sep 18, 2018 6:05 PM
Due: Oct 12, 2018
Priority: 1 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
10	SS08 0-0.1	Sep 18, 2018		Soil	M18-Se25576										X	X		X
11	SS09 0-0.1	Sep 18, 2018		Soil	M18-Se25577									X	X	X		X
12	SS10 0-0.1	Sep 18, 2018		Soil	M18-Se25578									X	X	X		X
13	SS11 0-0.1	Sep 18, 2018		Soil	M18-Se25579						X	X	X	X	X	X		X
14	SS12 0-0.1	Sep 18, 2018		Soil	M18-Se25580									X		X		
15	SS14 0-0.1	Sep 18, 2018		Soil	M18-Se25581									X		X		
16	SS15 0-0.1	Sep 18, 2018		Soil	M18-Se25582									X		X		
17	SS16 0-0.1	Sep 18, 2018		Soil	M18-Se25583									X		X		
18	QA 180918	Sep 18, 2018		Soil	M18-Se25584									X		X		
19	SS01 0-0.1	Sep 18, 2018		Soil	M18-Se25585				X									
20	SS01 0.9-1.0	Sep 18, 2018		Soil	M18-Se25586				X									
21	SS01 1.5-1.6	Sep 18, 2018		Soil	M18-Se25587				X									

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
22	SS02 0.5-0.6	Sep 18, 2018		Soil	M18-Se25588				X									
23	SS02 0.9-1.0	Sep 18, 2018		Soil	M18-Se25589				X									
24	SS02 1.5-1.6	Sep 18, 2018		Soil	M18-Se25590				X									
25	SS03 0-0.1	Sep 18, 2018		Soil	M18-Se25591				X									
26	SS04 0-0.1	Sep 18, 2018		Soil	M18-Se25592				X									
27	SS05 0.5-0.6	Sep 18, 2018		Soil	M18-Se25593				X									
28	SS05 0.9-1.0	Sep 18, 2018		Soil	M18-Se25594				X									
29	SS06 0.5-0.6	Sep 18, 2018		Soil	M18-Se25595				X									
30	SS06 0.9-1.0	Sep 18, 2018		Soil	M18-Se25597				X									
31	SS07 0.5-0.6	Sep 18, 2018		Soil	M18-Se25598				X									
32	SS07 0.9-1.0	Sep 18, 2018		Soil	M18-Se25599				X									
33	SS08 0.5-0.6	Sep 18, 2018		Soil	M18-Se25600				X									

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Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
34	SS08 0.9-1.0	Sep 18, 2018		Soil	M18-Se25601				X									
35	SS09 0.4-0.5	Sep 18, 2018		Soil	M18-Se25602				X									
36	SS10 0.4-0.5	Sep 18, 2018		Soil	M18-Se25603				X									
37	SS11 0.4-0.5	Sep 18, 2018		Soil	M18-Se25604				X									
38	SS13 0-0.1	Sep 18, 2018		Soil	M18-Se25605				X									
39	SS13 0.4-0.5	Sep 18, 2018		Soil	M18-Se25606				X									
40	SS13 0.9-1.0	Sep 18, 2018		Soil	M18-Se25607				X									
41	SS16 0.5-0.6	Sep 18, 2018		Soil	M18-Se25608				X									
42	SS16 0.9-1.0	Sep 18, 2018		Soil	M18-Se25609				X									
43	SS11 0.9-1.0	Sep 18, 2018		Soil	M18-Se26813				X									
Test Counts						1	1	1	25	1	2	2	2	14	9	16	1	9

Certificate of Analysis

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.

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Claudia Bennett
Report	618500-V2-AID
Project Name	PEAT ISLAND
Project ID	54933
Received Date	Sep 18, 2018
Date Reported	Sep 26, 2018

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 AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w).The examination of large sample sizes(500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction.The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA(friable asbestos) and AF(asbestos fines) then applies where they are able to be quantified by gravimetric procedures.This quantitative screening is not generally applicable to FF(free fibres) and results of Trace Analysis are referred. *NOTE: NATA News March 2014, p.7, states in relation to AS4964: "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". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk).* *This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the 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, June 2011.*

Project Name PEAT ISLAND
Project ID 54933
Date Sampled Sep 18, 2018
Report 618500-V2-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
SS03 0.5-0.6	18-Se25570	Sep 18, 2018	Approximate Sample 796g Sample consisted of: Beige fine-grained sandy soil and rocks	FA: Chrysotile and crocidolite asbestos detected in weathered fibre cement fragments. Approximate raw weight of FA = 1.1g Estimated asbestos content in FA = 0.21g* Total estimated asbestos concentration in FA = 0.027% w/w* Organic fibre detected. No respirable fibres detected.
SS03 FRAG	18-Se25571	Sep 18, 2018	Approximate Sample 182g / 200x90x5mm Sample consisted of: Grey fibre cement sheet	Chrysotile, amosite and crocidolite 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 (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Sep 26, 2018	Indefinite
Asbestos - LTM-ASB-8020	Sydney	Sep 26, 2018	Indefinite

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Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail	% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271				X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217		X	X										
Brisbane Laboratory - NATA Site # 20794	X												
Perth Laboratory - NATA Site # 23736													
External Laboratory													

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	SS01 0.5-0.6	Sep 18, 2018		Soil	M18-Se25567	X				X				X	X	X	X	X
2	SS02 0-0.1	Sep 18, 2018		Soil	M18-Se25568									X		X		
3	SS02 0.3-0.4	Sep 18, 2018		Soil	M18-Se25569										X	X		X
4	SS03 0.5-0.6	Sep 18, 2018		Soil	M18-Se25570		X											
5	SS03 FRAG	Sep 18, 2018		Building Materials	M18-Se25571			X										
6	SS04 0.3-0.4	Sep 18, 2018		Soil	M18-Se25572									X		X		
7	SS05 0-0.1	Sep 18, 2018		Soil	M18-Se25573									X	X	X		X
8	SS06 0-0.1	Sep 18, 2018		Soil	M18-Se25574									X	X	X		X
9	SS07 0-0.1	Sep 18, 2018		Soil	M18-Se25575						X	X	X	X	X	X		X

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
10	SS08 0-0.1	Sep 18, 2018		Soil	M18-Se25576										X	X		X
11	SS09 0-0.1	Sep 18, 2018		Soil	M18-Se25577									X	X	X		X
12	SS10 0-0.1	Sep 18, 2018		Soil	M18-Se25578									X	X	X		X
13	SS11 0-0.1	Sep 18, 2018		Soil	M18-Se25579						X	X	X	X	X	X		X
14	SS12 0-0.1	Sep 18, 2018		Soil	M18-Se25580									X		X		
15	SS14 0-0.1	Sep 18, 2018		Soil	M18-Se25581									X		X		
16	SS15 0-0.1	Sep 18, 2018		Soil	M18-Se25582									X		X		
17	SS16 0-0.1	Sep 18, 2018		Soil	M18-Se25583									X		X		
18	QA 180918	Sep 18, 2018		Soil	M18-Se25584									X		X		
19	SS01 0-0.1	Sep 18, 2018		Soil	M18-Se25585				X									
20	SS01 0.9-1.0	Sep 18, 2018		Soil	M18-Se25586				X									
21	SS01 1.5-1.6	Sep 18, 2018		Soil	M18-Se25587				X									

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Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
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24	SS02 1.5-1.6	Sep 18, 2018		Soil	M18-Se25590				X									
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31	SS07 0.5-0.6	Sep 18, 2018		Soil	M18-Se25598				X									
32	SS07 0.9-1.0	Sep 18, 2018		Soil	M18-Se25599				X									
33	SS08 0.5-0.6	Sep 18, 2018		Soil	M18-Se25600				X									

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
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36	SS10 0.4-0.5	Sep 18, 2018		Soil	M18-Se25603				X									
37	SS11 0.4-0.5	Sep 18, 2018		Soil	M18-Se25604				X									
38	SS13 0-0.1	Sep 18, 2018		Soil	M18-Se25605				X									
39	SS13 0.4-0.5	Sep 18, 2018		Soil	M18-Se25606				X									
40	SS13 0.9-1.0	Sep 18, 2018		Soil	M18-Se25607				X									
41	SS16 0.5-0.6	Sep 18, 2018		Soil	M18-Se25608				X									
42	SS16 0.9-1.0	Sep 18, 2018		Soil	M18-Se25609				X									
43	SS11 0.9-1.0	Sep 18, 2018		Soil	M18-Se26813				X									
Test Counts						1	1	1	25	1	2	2	2	14	9	16	1	9

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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

Units

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

Terms

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

Comments

This report has been revised (V2) to include CEC test result for sample M18-Se25567.

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:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Authorised by:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Glenn Jackson
National Operations 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 | mgt

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Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
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: **Claudia Bennett**

Report **618500-S-V2**
Project name PEAT ISLAND
Project ID 54933
Received Date Sep 18, 2018

Client Sample ID			**SS01 0.5-0.6**	**SS02 0-0.1**	**SS02 0.3-0.4**	**SS04 0.3-0.4**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-Se25567**	**M18-Se25568**	**M18-Se25569**	**M18-Se25572**
Date Sampled			**Sep 18, 2018**	**Sep 18, 2018**	**Sep 18, 2018**	**Sep 18, 2018**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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	-	110	-
TRH C10-36 (Total)	50	mg/kg	< 50	-	110	-
BTEX						
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	%	114	-	101	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-	120	-
TRH >C34-C40	100	mg/kg	< 100	-	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	120	-
% Clay	1	%	14	-	-	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	39	-	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.7	-	-	-
% Moisture	1	%	6.6	4.5	5.0	17
Heavy Metals						
Arsenic	2	mg/kg	4.0	< 2	-	3.5
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
Chromium	5	mg/kg	14	22	-	8.3
Copper	5	mg/kg	< 5	26	-	35
Lead	5	mg/kg	15	160	-	89
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Nickel	5	mg/kg	< 5	45	-	< 5
Zinc	5	mg/kg	8.7	40	-	140

Client Sample ID			SS01 0.5-0.6	SS02 0-0.1	SS02 0.3-0.4	SS04 0.3-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Se25567	M18-Se25568	M18-Se25569	M18-Se25572
Date Sampled			Sep 18, 2018	Sep 18, 2018	Sep 18, 2018	Sep 18, 2018
Test/Reference	LOR	Unit				
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	7.5	-	-	-

Client Sample ID			SS05 0-0.1	SS06 0-0.1	SS07 0-0.1	SS08 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Se25573	M18-Se25574	M18-Se25575	M18-Se25576
Date Sampled			Sep 18, 2018	Sep 18, 2018	Sep 18, 2018	Sep 18, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	118	111	98	124
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
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[N07]	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	-

Client Sample ID			SS05 0-0.1	SS06 0-0.1	SS07 0-0.1	SS08 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Se25573	M18-Se25574	M18-Se25575	M18-Se25576
Date Sampled			Sep 18, 2018	Sep 18, 2018	Sep 18, 2018	Sep 18, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	-	-	100	-
p-Terphenyl-d14 (surr.)	1	%	-	-	107	-
Organochlorine Pesticides						
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	%	-	-	123	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	126	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1221	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1232	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1242	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1248	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1254	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1260	0.1	mg/kg	-	-	< 0.1	-
Total PCB*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchlorendate (surr.)	1	%	-	-	123	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	126	-
% Moisture	1	%	9.2	17	15	6.7

Client Sample ID			SS05 0-0.1	SS06 0-0.1	SS07 0-0.1	SS08 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Se25573	M18-Se25574	M18-Se25575	M18-Se25576
Date Sampled			Sep 18, 2018	Sep 18, 2018	Sep 18, 2018	Sep 18, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	7.0	5.9	7.6	-
Copper	5	mg/kg	< 5	< 5	21	-
Lead	5	mg/kg	20	20	230	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	< 5	< 5	< 5	-
Zinc	5	mg/kg	24	8.7	600	-

Client Sample ID			SS09 0-0.1	SS10 0-0.1	SS11 0-0.1	SS12 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Se25577	M18-Se25578	M18-Se25579	M18-Se25580
Date Sampled			Sep 18, 2018	Sep 18, 2018	Sep 18, 2018	Sep 18, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	104	82	120	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
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[N07]	0.5	mg/kg	-	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	-

Client Sample ID			SS09 0-0.1	SS10 0-0.1	SS11 0-0.1	SS12 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Se25577	M18-Se25578	M18-Se25579	M18-Se25580
Date Sampled			Sep 18, 2018	Sep 18, 2018	Sep 18, 2018	Sep 18, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	-	-	75	-
p-Terphenyl-d14 (surr.)	1	%	-	-	85	-
Organochlorine Pesticides						
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	%	-	-	116	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	123	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1221	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1232	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1242	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1248	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1254	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1260	0.1	mg/kg	-	-	< 0.1	-
Total PCB*	0.1	mg/kg	-	-	< 0.1	-

Client Sample ID			SS09 0-0.1	SS10 0-0.1	SS11 0-0.1	SS12 0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-Se25577**	**M18-Se25578**	**M18-Se25579**	**M18-Se25580**
Date Sampled			**Sep 18, 2018**	**Sep 18, 2018**	**Sep 18, 2018**	**Sep 18, 2018**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Dibutylchlorendate (surr.)	1	%	-	-	116	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	123	-
% Moisture	1	%	6.3	4.4	15	9.4
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	11	8.7	10	6.5
Copper	5	mg/kg	< 5	< 5	< 5	9.1
Lead	5	mg/kg	10	10	10	14
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	8.3
Zinc	5	mg/kg	< 5	8.2	< 5	13

Client Sample ID			SS14 0-0.1	SS15 0-0.1	SS16 0-0.1	QA 180918
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-Se25581**	**M18-Se25582**	**M18-Se25583**	**M18-Se25584**
Date Sampled			**Sep 18, 2018**	**Sep 18, 2018**	**Sep 18, 2018**	**Sep 18, 2018**
Test/Reference	LOR	Unit				
% Moisture	1	%	14	17	5.2	5.9
Heavy Metals						
Arsenic	2	mg/kg	3.2	2.8	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	79	12	6.5	25
Copper	5	mg/kg	< 5	22	< 5	27
Lead	5	mg/kg	19	380	22	140
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	11	< 5	47
Zinc	5	mg/kg	8.4	260	21	39

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 (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 20, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 20, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 20, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Sep 20, 2018	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Polycyclic Aromatic Hydrocarbons	Melbourne	Sep 20, 2018	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Sep 20, 2018	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Sep 20, 2018	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Clay	Brisbane	Sep 21, 2018	6 Day
- Method: LTM-GEN-7040			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Sep 20, 2018	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals M8	Melbourne	Sep 20, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Melbourne	Sep 20, 2018	7 Day
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Oct 12, 2018	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
% Moisture	Melbourne	Sep 20, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

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NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 618500
Phone: 02 8245 0300
Fax:

Received: Sep 18, 2018 6:05 PM
Due: Oct 12, 2018
Priority: 1 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
External Laboratory																		
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
1	SS01 0.5-0.6	Sep 18, 2018		Soil	M18-Se25567	X				X				X	X	X	X	X
2	SS02 0-0.1	Sep 18, 2018		Soil	M18-Se25568									X		X		
3	SS02 0.3-0.4	Sep 18, 2018		Soil	M18-Se25569										X	X		X
4	SS03 0.5-0.6	Sep 18, 2018		Soil	M18-Se25570		X											
5	SS03 FRAG	Sep 18, 2018		Building Materials	M18-Se25571			X										
6	SS04 0.3-0.4	Sep 18, 2018		Soil	M18-Se25572									X		X		
7	SS05 0-0.1	Sep 18, 2018		Soil	M18-Se25573									X	X	X		X
8	SS06 0-0.1	Sep 18, 2018		Soil	M18-Se25574									X	X	X		X
9	SS07 0-0.1	Sep 18, 2018		Soil	M18-Se25575						X	X	X	X	X	X		X

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
10	SS08 0-0.1	Sep 18, 2018		Soil	M18-Se25576										X	X		X
11	SS09 0-0.1	Sep 18, 2018		Soil	M18-Se25577									X	X	X		X
12	SS10 0-0.1	Sep 18, 2018		Soil	M18-Se25578									X	X	X		X
13	SS11 0-0.1	Sep 18, 2018		Soil	M18-Se25579						X	X	X	X	X	X		X
14	SS12 0-0.1	Sep 18, 2018		Soil	M18-Se25580									X		X		
15	SS14 0-0.1	Sep 18, 2018		Soil	M18-Se25581									X		X		
16	SS15 0-0.1	Sep 18, 2018		Soil	M18-Se25582									X		X		
17	SS16 0-0.1	Sep 18, 2018		Soil	M18-Se25583									X		X		
18	QA 180918	Sep 18, 2018		Soil	M18-Se25584									X		X		
19	SS01 0-0.1	Sep 18, 2018		Soil	M18-Se25585				X									
20	SS01 0.9-1.0	Sep 18, 2018		Soil	M18-Se25586				X									
21	SS01 1.5-1.6	Sep 18, 2018		Soil	M18-Se25587				X									

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
22	SS02 0.5-0.6	Sep 18, 2018		Soil	M18-Se25588				X									
23	SS02 0.9-1.0	Sep 18, 2018		Soil	M18-Se25589				X									
24	SS02 1.5-1.6	Sep 18, 2018		Soil	M18-Se25590				X									
25	SS03 0-0.1	Sep 18, 2018		Soil	M18-Se25591				X									
26	SS04 0-0.1	Sep 18, 2018		Soil	M18-Se25592				X									
27	SS05 0.5-0.6	Sep 18, 2018		Soil	M18-Se25593				X									
28	SS05 0.9-1.0	Sep 18, 2018		Soil	M18-Se25594				X									
29	SS06 0.5-0.6	Sep 18, 2018		Soil	M18-Se25595				X									
30	SS06 0.9-1.0	Sep 18, 2018		Soil	M18-Se25597				X									
31	SS07 0.5-0.6	Sep 18, 2018		Soil	M18-Se25598				X									
32	SS07 0.9-1.0	Sep 18, 2018		Soil	M18-Se25599				X									
33	SS08 0.5-0.6	Sep 18, 2018		Soil	M18-Se25600				X									

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Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
34	SS08 0.9-1.0	Sep 18, 2018		Soil	M18-Se25601				X									
35	SS09 0.4-0.5	Sep 18, 2018		Soil	M18-Se25602				X									
36	SS10 0.4-0.5	Sep 18, 2018		Soil	M18-Se25603				X									
37	SS11 0.4-0.5	Sep 18, 2018		Soil	M18-Se25604				X									
38	SS13 0-0.1	Sep 18, 2018		Soil	M18-Se25605				X									
39	SS13 0.4-0.5	Sep 18, 2018		Soil	M18-Se25606				X									
40	SS13 0.9-1.0	Sep 18, 2018		Soil	M18-Se25607				X									
41	SS16 0.5-0.6	Sep 18, 2018		Soil	M18-Se25608				X									
42	SS16 0.9-1.0	Sep 18, 2018		Soil	M18-Se25609				X									
43	SS11 0.9-1.0	Sep 18, 2018		Soil	M18-Se26813				X									
Test Counts						1	1	1	25	1	2	2	2	14	9	16	1	9

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil 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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
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	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

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	
Method Blank							
Polychlorinated Biphenyls							
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	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
% Clay	%	< 1			1	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
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	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	91			70-130	Pass	
TRH C10-C14	%	75			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	100			70-130	Pass	
Toluene	%	107			70-130	Pass	
Ethylbenzene	%	104			70-130	Pass	
m&p-Xylenes	%	110			70-130	Pass	
Xylenes - Total	%	114			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	122			70-130	Pass	
TRH C6-C10	%	92			70-130	Pass	
TRH >C10-C16	%	79			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	76			70-130	Pass	
Acenaphthylene	%	80			70-130	Pass	
Anthracene	%	72			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benz(a)anthracene	%	77			70-130	Pass	
Benzo(a)pyrene	%	72			70-130	Pass	
Benzo(b&j)fluoranthene	%	70			70-130	Pass	
Benzo(g.h.i)perylene	%	84			70-130	Pass	
Benzo(k)fluoranthene	%	83			70-130	Pass	
Chrysene	%	77			70-130	Pass	
Dibenz(a.h)anthracene	%	78			70-130	Pass	
Fluoranthene	%	86			70-130	Pass	
Fluorene	%	76			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	84			70-130	Pass	
Naphthalene	%	76			70-130	Pass	
Phenanthrene	%	71			70-130	Pass	
Pyrene	%	88			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	110			70-130	Pass	
4.4'-DDE	%	116			70-130	Pass	
4.4'-DDT	%	107			70-130	Pass	
a-BHC	%	103			70-130	Pass	
Aldrin	%	107			70-130	Pass	
b-BHC	%	103			70-130	Pass	
d-BHC	%	102			70-130	Pass	
Dieldrin	%	106			70-130	Pass	
Endosulfan I	%	106			70-130	Pass	
Endosulfan II	%	100			70-130	Pass	
Endosulfan sulphate	%	101			70-130	Pass	
Endrin	%	124			70-130	Pass	
Endrin aldehyde	%	103			70-130	Pass	
Endrin ketone	%	100			70-130	Pass	
g-BHC (Lindane)	%	103			70-130	Pass	
Heptachlor	%	108			70-130	Pass	
Heptachlor epoxide	%	101			70-130	Pass	
Hexachlorobenzene	%	104			70-130	Pass	
Methoxychlor	%	104			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	125			70-130	Pass	
LCS - % Recovery							
% Clay	%	93			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	110			80-120	Pass	
Cadmium	%	107			80-120	Pass	
Chromium	%	113			80-120	Pass	
Copper	%	112			80-120	Pass	
Lead	%	114			80-120	Pass	
Mercury	%	101			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
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M18-Se25572	CP	%	114			75-125	Pass	
Cadmium	M18-Se25572	CP	%	112			75-125	Pass	
Chromium	M18-Se25572	CP	%	117			75-125	Pass	
Copper	M18-Se25572	CP	%	115			75-125	Pass	
Lead	M18-Se25572	CP	%	92			75-125	Pass	
Mercury	M18-Se25572	CP	%	108			70-130	Pass	
Nickel	M18-Se25572	CP	%	113			75-125	Pass	
Zinc	M18-Se25572	CP	%	106			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M18-Se29425	NCP	%	96			70-130	Pass	
Acenaphthylene	M18-Se29425	NCP	%	101			70-130	Pass	
Anthracene	M18-Se29425	NCP	%	89			70-130	Pass	
Benz(a)anthracene	M18-Se29425	NCP	%	93			70-130	Pass	
Benzo(a)pyrene	M18-Se29425	NCP	%	88			70-130	Pass	
Benzo(b&j)fluoranthene	M18-Se29425	NCP	%	81			70-130	Pass	
Benzo(g.h.i)perylene	M18-Se29425	NCP	%	97			70-130	Pass	
Benzo(k)fluoranthene	M18-Se29425	NCP	%	102			70-130	Pass	
Chrysene	M18-Se29425	NCP	%	95			70-130	Pass	
Dibenz(a.h)anthracene	M18-Se29425	NCP	%	84			70-130	Pass	
Fluoranthene	M18-Se29425	NCP	%	105			70-130	Pass	
Fluorene	M18-Se29425	NCP	%	96			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M18-Se29425	NCP	%	97			70-130	Pass	
Naphthalene	M18-Se29425	NCP	%	95			70-130	Pass	
Phenanthrene	M18-Se29425	NCP	%	91			70-130	Pass	
Pyrene	M18-Se29425	NCP	%	106			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M18-Se28693	NCP	%	119			70-130	Pass	
4.4'-DDE	M18-Se28693	NCP	%	119			70-130	Pass	
4.4'-DDT	M18-Se28693	NCP	%	85			70-130	Pass	
a-BHC	M18-Se28693	NCP	%	115			70-130	Pass	
Aldrin	M18-Se28693	NCP	%	121			70-130	Pass	
b-BHC	M18-Se28693	NCP	%	111			70-130	Pass	
d-BHC	M18-Se28693	NCP	%	109			70-130	Pass	
Dieldrin	M18-Se28693	NCP	%	116			70-130	Pass	
Endosulfan I	M18-Se28693	NCP	%	128			70-130	Pass	
Endosulfan II	M18-Se28693	NCP	%	122			70-130	Pass	
Endosulfan sulphate	M18-Se28693	NCP	%	112			70-130	Pass	
Endrin	M18-Se28693	NCP	%	113			70-130	Pass	
Endrin aldehyde	M18-Se28693	NCP	%	119			70-130	Pass	
Endrin ketone	M18-Se28693	NCP	%	109			70-130	Pass	
g-BHC (Lindane)	M18-Se28693	NCP	%	113			70-130	Pass	
Heptachlor	M18-Se28693	NCP	%	109			70-130	Pass	
Heptachlor epoxide	M18-Se28693	NCP	%	114			70-130	Pass	
Hexachlorobenzene	M18-Se28693	NCP	%	112			70-130	Pass	
Methoxychlor	M18-Se28693	NCP	%	78			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	M18-Se32778	NCP	%	100			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C6-C9	M18-Se25577	CP	%	90			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M18-Se25577	CP	%	86			70-130	Pass	
Toluene	M18-Se25577	CP	%	89			70-130	Pass	
Ethylbenzene	M18-Se25577	CP	%	88			70-130	Pass	
m&p-Xylenes	M18-Se25577	CP	%	92			70-130	Pass	
o-Xylene	M18-Se25577	CP	%	100			70-130	Pass	
Xylenes - Total	M18-Se25577	CP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M18-Se25577	CP	%	109			70-130	Pass	
TRH C6-C10	M18-Se25577	CP	%	90			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M18-Se25579	CP	%	85			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M18-Se25579	CP	%	85			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M18-Se25583	CP	%	114			75-125	Pass	
Cadmium	M18-Se25583	CP	%	112			75-125	Pass	
Chromium	M18-Se25583	CP	%	119			75-125	Pass	
Copper	M18-Se25583	CP	%	116			75-125	Pass	
Lead	M18-Se25583	CP	%	110			75-125	Pass	
Mercury	M18-Se25583	CP	%	107			70-130	Pass	
Nickel	M18-Se25583	CP	%	116			75-125	Pass	
Zinc	M18-Se25583	CP	%	107			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Clay	M18-Se25567	CP	%	14	14	<1	30%	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)	M18-Se25567	CP	uS/cm	39	38	2.9	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	M18-Se26297	NCP	pH Units	7.9	7.7	pass	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-Se25568	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	M18-Se25568	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M18-Se25568	CP	mg/kg	22	24	9.0	30%	Pass	
Copper	M18-Se25568	CP	mg/kg	26	21	20	30%	Pass	
Lead	M18-Se25568	CP	mg/kg	160	150	9.0	30%	Pass	
Mercury	M18-Se25568	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M18-Se25568	CP	mg/kg	45	55	18	30%	Pass	
Zinc	M18-Se25568	CP	mg/kg	40	44	10	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-Se25572	CP	mg/kg	3.5	3.4	2.0	30%	Pass	
Cadmium	M18-Se25572	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M18-Se25572	CP	mg/kg	8.3	8.3	<1	30%	Pass	
Copper	M18-Se25572	CP	mg/kg	35	35	<1	30%	Pass	
Lead	M18-Se25572	CP	mg/kg	89	89	1.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Mercury	M18-Se25572	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M18-Se25572	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	M18-Se25572	CP	mg/kg	140	140	1.0	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M18-Se29424	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M18-Se29424	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M18-Se29424	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M18-Se29424	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M18-Se29424	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M18-Se29424	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M18-Se29424	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M18-Se29424	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M18-Se29424	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M18-Se29424	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M18-Se29424	NCP	mg/kg	0.6	< 0.5	18	30%	Pass	
Fluorene	M18-Se29424	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M18-Se29424	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M18-Se29424	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M18-Se29424	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M18-Se29424	NCP	mg/kg	0.5	0.5	1.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	P18-Se26883	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	P18-Se26883	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	P18-Se26883	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	P18-Se26883	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	P18-Se26883	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	P18-Se26883	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	P18-Se26883	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	P18-Se26883	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	P18-Se26883	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	P18-Se26883	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	P18-Se26883	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M18-Se25575	CP	%	15	15	1.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M18-Se25576	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M18-Se25576	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M18-Se25576	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M18-Se25576	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M18-Se25576	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M18-Se25576	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	M18-Se25576	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M18-Se25576	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M18-Se25576	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M18-Se25578	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M18-Se25578	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M18-Se25578	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M18-Se25578	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M18-Se25578	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M18-Se25578	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-Se25582	CP	mg/kg	2.8	2.3	20	30%	Pass	
Cadmium	M18-Se25582	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M18-Se25582	CP	mg/kg	12	11	16	30%	Pass	
Copper	M18-Se25582	CP	mg/kg	22	19	14	30%	Pass	
Lead	M18-Se25582	CP	mg/kg	380	370	2.0	30%	Pass	
Mercury	M18-Se25582	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M18-Se25582	CP	mg/kg	11	5.6	66	30%	Fail	Q15
Zinc	M18-Se25582	CP	mg/kg	260	210	20	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-Se25583	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	M18-Se25583	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M18-Se25583	CP	mg/kg	6.5	6.6	1.0	30%	Pass	
Copper	M18-Se25583	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	M18-Se25583	CP	mg/kg	22	22	1.0	30%	Pass	
Mercury	M18-Se25583	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M18-Se25583	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	M18-Se25583	CP	mg/kg	21	21	1.0	30%	Pass	

Comments

This report has been revised (V2) to include CEC test result for sample M18-Se25567.

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 | mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)
Julie Kay	Senior Analyst-Inorganic (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)

Glenn Jackson

National Operations 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

JBS&G

PROJECT NO.: [redacted] 54937
PROJECT NAME: [redacted] Pearl Island
DATE NEEDED BY: 5 TAT
PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) [redacted] Chennett@jbsg.com.au; (3) [redacted] Sbirrows@jbsg.com.au

LABORATORY BATCH NO.:
SAMPLERS: JC
QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	PAH	TPH/BTEX	BTEX	PFASs	ASBESTOS	SELENIUM	Phenols	Explosives	OP/PCB	pH, cec, Clay	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
SS-24_0-0.1	Soil	20.9.18		Jar + Bag + Ice		X													
-0.2-0.3																			
-1.0-1.1																			
-1.6-1.7																			
-2.0-2.1																			
-2.6-2.7						X	X	X											
QC 20180920-SC01						Please forward to Envirolab													
QA "						X													
SS-31_0-0.1																			
" -0.2-0.3						X													
SS-33_0-0.1						X	X	X			X				X				
" -0.2-0.3																			
SS-35_0-0.1																			
-0.2-0.3						X										X			
-1.0-1.1																			
-1.6-1.7																			
SS-37_0-0.1																			
-0.2-0.3						X													
-0.4-1.0																			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: [redacted] DATE: 20.9.18 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Leesa D- 20-9-18 DATE: 6:00 PM OF: Eurofins MGT	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

#618880

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: [redacted] 54083
PROJECT NAME: [redacted] Peel Island
DATE NEEDED BY: STAT
LABORATORY BATCH NO.:
SAMPLERS: JC
QC LEVEL: NEPM (2013)
PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) [redacted]@jbsg.com.au; (3) [redacted] Cbennett@jbsg.com.au sburrows@jbsg

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	PAH	TPH/BTEX	BTEX	PFASs	ASBESTOS	SELENIUM	Phenols	Explosives	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
SS-37_1.4-1.5	Soil	20.9.18		Jar + Bag + Ice													
SS-34_0-0.1	↓	↓		↓		X											
" _0.2-0.3																	
QC 20180920-SC02						Please forward to Envirolab											
QA "																	
SS-41_0-0.1																	
_0.2-0.3						X											
_1.0-1.1																	
SS-42_0-0.1						X											
_0.2-0.3																	
_1.0-1.1																	
SS-43_0-0.1						X											
SS-44_0-0.1						X											
_0.2-0.3																	
SS-45_0-0.1						X											
_0.2-0.3																	
_1.3-1.4																	
SS-48_0-0.1																	
_0.2-0.3	↓	↓		↓		X											

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: [redacted] DATE: 20.9.18	CONSIGNMENT NOTE NO.	NAME: Lucia D- DATE: 20-9-18	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: Eurofins MAT 6:00 PM	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

618880

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: [redacted] 54933	LABORATORY BATCH NO.:
PROJECT NAME: [redacted] Deal Island	SAMPLERS: JC
DATE NEEDED BY:	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) [redacted]@jbsg.com.au; (3) [redacted]@jbsg.com.au sbarrows@jbsg

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	PAH	TPH/BTEX	BTEX	PFASs	ASBESTOS	SELENIUM	Phenols	Explosives	OCP/PCBs	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
SS-46_0-0.1	Soil	20.9.18		Jar + Bags + Ice		X												
SS-47_0-0.1						X												
SS-49_0-0.1						X												
↓ -0.2-0.3						X												
↓ -0.9-1.0																		
SS-50_0-0.1						X												
// -0.2-0.3																		
SS-51_0-0.1						X												
SS-52-0-0.1						X									X			
// -0.2-0.3				Jar + Ice														
SS-53-0-0.1				Jar + Bag + Ice		X												
// -0.2-0.3				//														
TS/TB	Water			4x Vials + Ice					X									

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: [redacted] DATE: 20.9.18	CONSIGNMENT NOTE NO.	NAME: DATE: 20-9-18	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: Eurofins MGT 6:00 pm	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

618880

016259 4/4

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54933	LABORATORY BATCH NO.:
PROJECT NAME: Peat Island	SAMPLERS: CB
DATE NEEDED BY: ST TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) sburrows@jbsg.com.au; (3) cbennett@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	TRH/BTEX	PAHs	Asbestos	OCP/PCB	pH, Clay, CEC	BTEX	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
SS30 0-0.1	Soil	20-9-18		J + B		X			X					X	
0.2-0.3	↓	↓		↓											
SS32 0-0.1						X					X				
SS34 0-0.1						X									
SS36 0-0.1						X									
SS40 0-0.1	↓			↓		X									
~~[illegible]~~	~~[illegible]~~			~~[illegible]~~							~~X~~	~~X~~			
~~[illegible]~~	~~↓~~	↓		~~[illegible]~~								~~X~~			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: CB DATE: 20-9-18	CONSIGNMENT NOTE NO.	NAME: DATE: 20-9-18	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: Eurofins MGT 6:00 PM	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

618880

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NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name:	**JBS & G Australia (NSW) P/L**
Contact name:	Claudia Bennett
Project name:	PEAT ISLAND
Project ID:	54933
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Sep 20, 2018 6:00 PM
Eurofins | mgt reference:	**618880**

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 | mgt Sample Receipt : 4.9 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).

Notes

Sample SS-34_0.0-0.1 listed twice in the COC. Sample SS-34_0.2-0.3 not received, analysis cancelled. Extra sample received (SS-39_0.0-0.1/0.2-0.3) placed on hold. QC20180920-JC01/02 forwarded to Envirolab.

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Claudia Bennett - CBennett@jbsg.com.au.

Note: A copy of these results will also be delivered to the general JBS & G Australia (NSW) P/L email address.

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web : www.eurofins.com.au

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NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 618880
Phone: 02 8245 0300
Fax:

Received: Sep 20, 2018 6:00 PM
Due: Sep 27, 2018
Priority: 5 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
External Laboratory																		
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
1	SS-29_0.0-0.1	Sep 20, 2018		Soil	S18-Se28412									X		X		
2	SS-29_2.6-2.7	Sep 20, 2018		Soil	S18-Se28413						X			X	X	X		X
3	QA20180920-JC01	Sep 20, 2018		Soil	S18-Se28414									X		X		
4	SS-31_0.2-0.3	Sep 20, 2018		Soil	S18-Se28415									X		X		
5	SS-33_0.0-0.1	Sep 20, 2018		Soil	S18-Se28416		X				X	X	X	X	X	X		X
6	SS-35_0.2-0.3	Sep 20, 2018		Soil	S18-Se28417	X				X				X		X	X	
7	SS-37_0.2-0.3	Sep 20, 2018		Soil	S18-Se28418									X		X		
8	SS-34_0.0-0.1	Sep 20, 2018		Soil	S18-Se28419									X		X		
9	SS-41_0.2-0.3	Sep 20, 2018		Soil	S18-Se28420									X		X		

ABN– 50 005 085 521
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NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 618880
Phone: 02 8245 0300
Fax:

Received: Sep 20, 2018 6:00 PM
Due: Sep 27, 2018
Priority: 5 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
10	SS-42_0.0-0.1	Sep 20, 2018		Soil	S18-Se28421									X		X		
11	SS-43_0.0-0.1	Sep 20, 2018		Soil	S18-Se28422									X		X		
12	SS-44_0.0-0.1	Sep 20, 2018		Soil	S18-Se28423									X		X		
13	SS-45_0.0-0.1	Sep 20, 2018		Soil	S18-Se28424									X		X		
14	SS-48_0.2-0.3	Sep 20, 2018		Soil	S18-Se28425									X		X		
15	SS-46_0.0-0.1	Sep 20, 2018		Soil	S18-Se28426									X		X		
16	SS-47_0.0-0.1	Sep 20, 2018		Soil	S18-Se28427									X		X		
17	SS-49_0.2-0.3	Sep 20, 2018		Soil	S18-Se28428									X		X		
18	SS-50_0.0-0.1	Sep 20, 2018		Soil	S18-Se28429									X		X		
19	SS-51_0.0-0.1	Sep 20, 2018		Soil	S18-Se28430									X		X		
20	SS-52_0.0-0.1	Sep 20, 2018		Soil	S18-Se28431							X	X	X		X		
21	SS-53_0.0-0.1	Sep 20, 2018		Soil	S18-Se28432									X		X		

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NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
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Phone: 02 8245 0300
Fax:

Received: Sep 20, 2018 6:00 PM
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Priority: 5 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
22	TS	Sep 20, 2018		Water	S18-Se28433										X			
23	TB	Sep 20, 2018		Water	S18-Se28434										X			
24	SS-30_0.0-0.1	Sep 20, 2018		Soil	S18-Se28435		X							X		X		
25	SS-32_0.0-0.1	Sep 20, 2018		Soil	S18-Se28436	X				X				X		X	X	
26	SS-36_0.0-0.1	Sep 20, 2018		Soil	S18-Se28437									X		X		
27	SS-40_0.0-0.1	Sep 20, 2018		Soil	S18-Se28438									X		X		
28	SS-29_0.2-0.3	Sep 20, 2018		Soil	S18-Se28556				X									
29	SS-29_1.0-1.1	Sep 20, 2018		Soil	S18-Se28557				X									
30	SS-29_1.6-1.7	Sep 20, 2018		Soil	S18-Se28558				X									
31	SS-29_2.0-2.1	Sep 20, 2018		Soil	S18-Se28559				X									
32	SS-31_0.0-0.1	Sep 20, 2018		Soil	S18-Se28560				X									
33	SS-33_0.2-0.3	Sep 20, 2018		Soil	S18-Se28561				X									

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
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NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 618880
Phone: 02 8245 0300
Fax:

Received: Sep 20, 2018 6:00 PM
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Priority: 5 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
34	SS-35_0.0-0.1	Sep 20, 2018		Soil	S18-Se28562				X									
35	SS-35_1.0-1.1	Sep 20, 2018		Soil	S18-Se28563				X									
36	SS-35_1.6-1.7	Sep 20, 2018		Soil	S18-Se28564				X									
37	SS-37_0.0-0.1	Sep 20, 2018		Soil	S18-Se28565				X									
38	SS-37_0.9-1.0	Sep 20, 2018		Soil	S18-Se28566				X									
39	SS-37_1.4-1.5	Sep 20, 2018		Soil	S18-Se28567				X									
40	SS-34_0.2-0.3	Sep 20, 2018		Soil	S18-Se28568			X										
41	QA20180920-JC02	Sep 20, 2018		Soil	S18-Se28569				X									
42	SS-41_0.0-0.1	Sep 20, 2018		Soil	S18-Se28570				X									
43	SS-41_1.0-1.1	Sep 20, 2018		Soil	S18-Se28571				X									
44	SS-42_0.2-0.3	Sep 20, 2018		Soil	S18-Se28572				X									

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NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 618880
Phone: 02 8245 0300
Fax:

Received: Sep 20, 2018 6:00 PM
Due: Sep 27, 2018
Priority: 5 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
45	SS-42_1.0-1.1	Sep 20, 2018		Soil	S18-Se28573				X									
46	SS-44_0.2-0.3	Sep 20, 2018		Soil	S18-Se28574				X									
47	SS-45_0.2-0.3	Sep 20, 2018		Soil	S18-Se28575				X									
48	SS-45_1.3-1.4	Sep 20, 2018		Soil	S18-Se28576				X									
49	SS-48_0.0-0.1	Sep 20, 2018		Soil	S18-Se28577				X									
50	SS-49_0.0-0.1	Sep 20, 2018		Soil	S18-Se28578				X									
51	SS-49_0.9-1.0	Sep 20, 2018		Soil	S18-Se28579				X									
52	SS-50_0.2-0.3	Sep 20, 2018		Soil	S18-Se28580				X									
53	SS-52_0.2-0.3	Sep 20, 2018		Soil	S18-Se28581				X									
54	SS-53_0.2-0.3	Sep 20, 2018		Soil	S18-Se28582				X									
55	SS-30_0.2-0.3	Sep 20, 2018		Soil	S18-Se28583				X									
56	SS-39_0.0-0.1	Sep 20, 2018		Soil	S18-Se28602				X									

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
57	SS-39_0.2-0.3	Sep 20, 2018		Soil	S18-Se28603				X									
Test Counts						2	2	1	29	2	2	2	2	25	4	25	2	2

Certificate of Analysis

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.

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
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Attention:	Claudia Bennett
Report	618880-AID
Project Name	PEAT ISLAND
Project ID	54933
Received Date	Sep 20, 2018
Date Reported	Sep 27, 2018

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 AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w).The examination of large sample sizes(500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction.The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA(friable asbestos) and AF(asbestos fines) then applies where they are able to be quantified by gravimetric procedures.This quantitative screening is not generally applicable to FF(free fibres) and results of Trace Analysis are referred. *NOTE: NATA News March 2014, p.7, states in relation to AS4964: "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". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk).* *This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the 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, June 2011.*

Project Name PEAT ISLAND
Project ID 54933
Date Sampled Sep 20, 2018
Report 618880-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
SS-33_0.0-0.1	18-Se28416	Sep 20, 2018	Approximate Sample 535g Sample consisted of: Brown fine-grained sandy soil	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
SS-30_0.0-0.1	18-Se28435	Sep 20, 2018	Approximate Sample 601g Sample consisted of: Brown fine-grained sandy soil	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres 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 (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Sep 21, 2018	Indefinite

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Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
External Laboratory																		
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
1	SS-29_0.0-0.1	Sep 20, 2018		Soil	S18-Se28412									X		X		
2	SS-29_2.6-2.7	Sep 20, 2018		Soil	S18-Se28413						X			X	X	X		X
3	QA20180920-JC01	Sep 20, 2018		Soil	S18-Se28414									X		X		
4	SS-31_0.2-0.3	Sep 20, 2018		Soil	S18-Se28415									X		X		
5	SS-33_0.0-0.1	Sep 20, 2018		Soil	S18-Se28416		X				X	X	X	X	X	X		X
6	SS-35_0.2-0.3	Sep 20, 2018		Soil	S18-Se28417	X				X				X		X	X	
7	SS-37_0.2-0.3	Sep 20, 2018		Soil	S18-Se28418									X		X		
8	SS-34_0.0-0.1	Sep 20, 2018		Soil	S18-Se28419									X		X		
9	SS-41_0.2-0.3	Sep 20, 2018		Soil	S18-Se28420									X		X		

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
10	SS-42_0.0-0.1	Sep 20, 2018		Soil	S18-Se28421									X		X		
11	SS-43_0.0-0.1	Sep 20, 2018		Soil	S18-Se28422									X		X		
12	SS-44_0.0-0.1	Sep 20, 2018		Soil	S18-Se28423									X		X		
13	SS-45_0.0-0.1	Sep 20, 2018		Soil	S18-Se28424									X		X		
14	SS-48_0.2-0.3	Sep 20, 2018		Soil	S18-Se28425									X		X		
15	SS-46_0.0-0.1	Sep 20, 2018		Soil	S18-Se28426									X		X		
16	SS-47_0.0-0.1	Sep 20, 2018		Soil	S18-Se28427									X		X		
17	SS-49_0.2-0.3	Sep 20, 2018		Soil	S18-Se28428									X		X		
18	SS-50_0.0-0.1	Sep 20, 2018		Soil	S18-Se28429									X		X		
19	SS-51_0.0-0.1	Sep 20, 2018		Soil	S18-Se28430									X		X		
20	SS-52_0.0-0.1	Sep 20, 2018		Soil	S18-Se28431							X	X	X		X		
21	SS-53_0.0-0.1	Sep 20, 2018		Soil	S18-Se28432									X		X		

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
22	TS	Sep 20, 2018		Water	S18-Se28433										X			
23	TB	Sep 20, 2018		Water	S18-Se28434										X			
24	SS-30_0.0-0.1	Sep 20, 2018		Soil	S18-Se28435		X							X		X		
25	SS-32_0.0-0.1	Sep 20, 2018		Soil	S18-Se28436	X				X				X		X	X	
26	SS-36_0.0-0.1	Sep 20, 2018		Soil	S18-Se28437									X		X		
27	SS-40_0.0-0.1	Sep 20, 2018		Soil	S18-Se28438									X		X		
28	SS-29_0.2-0.3	Sep 20, 2018		Soil	S18-Se28556				X									
29	SS-29_1.0-1.1	Sep 20, 2018		Soil	S18-Se28557				X									
30	SS-29_1.6-1.7	Sep 20, 2018		Soil	S18-Se28558				X									
31	SS-29_2.0-2.1	Sep 20, 2018		Soil	S18-Se28559				X									
32	SS-31_0.0-0.1	Sep 20, 2018		Soil	S18-Se28560				X									
33	SS-33_0.2-0.3	Sep 20, 2018		Soil	S18-Se28561				X									

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
34	SS-35_0.0-0.1	Sep 20, 2018		Soil	S18-Se28562				X									
35	SS-35_1.0-1.1	Sep 20, 2018		Soil	S18-Se28563				X									
36	SS-35_1.6-1.7	Sep 20, 2018		Soil	S18-Se28564				X									
37	SS-37_0.0-0.1	Sep 20, 2018		Soil	S18-Se28565				X									
38	SS-37_0.9-1.0	Sep 20, 2018		Soil	S18-Se28566				X									
39	SS-37_1.4-1.5	Sep 20, 2018		Soil	S18-Se28567				X									
40	SS-34_0.2-0.3	Sep 20, 2018		Soil	S18-Se28568			X										
41	QA20180920-JC02	Sep 20, 2018		Soil	S18-Se28569				X									
42	SS-41_0.0-0.1	Sep 20, 2018		Soil	S18-Se28570				X									
43	SS-41_1.0-1.1	Sep 20, 2018		Soil	S18-Se28571				X									
44	SS-42_0.2-0.3	Sep 20, 2018		Soil	S18-Se28572				X									

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
45	SS-42_1.0-1.1	Sep 20, 2018		Soil	S18-Se28573				X									
46	SS-44_0.2-0.3	Sep 20, 2018		Soil	S18-Se28574				X									
47	SS-45_0.2-0.3	Sep 20, 2018		Soil	S18-Se28575				X									
48	SS-45_1.3-1.4	Sep 20, 2018		Soil	S18-Se28576				X									
49	SS-48_0.0-0.1	Sep 20, 2018		Soil	S18-Se28577				X									
50	SS-49_0.0-0.1	Sep 20, 2018		Soil	S18-Se28578				X									
51	SS-49_0.9-1.0	Sep 20, 2018		Soil	S18-Se28579				X									
52	SS-50_0.2-0.3	Sep 20, 2018		Soil	S18-Se28580				X									
53	SS-52_0.2-0.3	Sep 20, 2018		Soil	S18-Se28581				X									
54	SS-53_0.2-0.3	Sep 20, 2018		Soil	S18-Se28582				X									
55	SS-30_0.2-0.3	Sep 20, 2018		Soil	S18-Se28583				X									
56	SS-39_0.0-0.1	Sep 20, 2018		Soil	S18-Se28602				X									

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
57	SS-39_0.2-0.3	Sep 20, 2018		Soil	S18-Se28603				X									
Test Counts						2	2	1	29	2	2	2	2	25	4	25	2	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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substatntial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

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:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Glenn Jackson
National Operations 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.

Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Claudia Bennett**

Report **618880-S**
Project name PEAT ISLAND
Project ID 54933
Received Date Sep 20, 2018

Client Sample ID			**SS-29_0.0-0.1**	**SS-29_2.6-2.7**	**QA20180920-JC01**	**SS-31_0.2-0.3**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-Se28412**	**S18-Se28413**	**S18-Se28414**	**S18-Se28415**
Date Sampled			**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	-	-
TRH C10-C14	20	mg/kg	-	< 20	-	-
TRH C15-C28	50	mg/kg	-	< 50	-	-
TRH C29-C36	50	mg/kg	-	< 50	-	-
TRH C10-36 (Total)	50	mg/kg	-	< 50	-	-
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	-	-
Toluene	0.1	mg/kg	-	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	-
o-Xylene	0.1	mg/kg	-	< 0.1	-	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	-	88	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	-
TRH C6-C10	20	mg/kg	-	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	-
TRH >C10-C16	50	mg/kg	-	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	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	-	-
Polycyclic Aromatic Hydrocarbons						
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[N07]	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	-	-

Client Sample ID			SS-29_0.0-0.1	SS-29_2.6-2.7	QA20180920-JC01	SS-31_0.2-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-Se28412**	**S18-Se28413**	**S18-Se28414**	**S18-Se28415**
Date Sampled			**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	-	86	-	-
p-Terphenyl-d14 (surr.)	1	%	-	83	-	-
% Moisture	1	%	3.4	9.9	3.4	19
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	6.9	8.9	7.7	23
Copper	5	mg/kg	53	< 5	79	< 5
Lead	5	mg/kg	43	13	41	9.9
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	13	< 5	13	< 5
Zinc	5	mg/kg	89	< 5	91	< 5

Client Sample ID			SS-33_0.0-0.1	SS-35_0.2-0.3	SS-37_0.2-0.3	SS-34_0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-Se28416**	**S18-Se28417**	**S18-Se28418**	**S18-Se28419**
Date Sampled			**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	-	-
TRH C10-C14	20	mg/kg	< 20	-	-	-
TRH C15-C28	50	mg/kg	< 50	-	-	-
TRH C29-C36	50	mg/kg	< 50	-	-	-
TRH C10-36 (Total)	50	mg/kg	< 50	-	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	-
4-Bromofluorobenzene (surr.)	1	%	109	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	-	-
TRH C6-C10	20	mg/kg	< 20	-	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	-	-
TRH >C10-C16	50	mg/kg	< 50	-	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-	-

Client Sample ID			SS-33_0.0-0.1	SS-35_0.2-0.3	SS-37_0.2-0.3	SS-34_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Se28416	S18-Se28417	S18-Se28418	S18-Se28419
Date Sampled			Sep 20, 2018	Sep 20, 2018	Sep 20, 2018	Sep 20, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C16-C34	100	mg/kg	< 100	-	-	-
TRH >C34-C40	100	mg/kg	< 100	-	-	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	-	-
Polycyclic Aromatic Hydrocarbons						
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[N07]	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	%	116	-	-	-
p-Terphenyl-d14 (surr.)	1	%	113	-	-	-
Organochlorine Pesticides						
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	-	-	-

Client Sample ID			SS-33_0.0-0.1	SS-35_0.2-0.3	SS-37_0.2-0.3	SS-34_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Se28416	S18-Se28417	S18-Se28418	S18-Se28419
Date Sampled			Sep 20, 2018	Sep 20, 2018	Sep 20, 2018	Sep 20, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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	%	121	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	101	-	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	121	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	101	-	-	-
% Clay	1	%	-	19	-	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	47	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	5.0	-	-
% Moisture	1	%	9.4	16	12	6.8
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	11	18	17	12
Copper	5	mg/kg	9.9	< 5	< 5	12
Lead	5	mg/kg	40	26	13	21
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	9.3
Zinc	5	mg/kg	49	7.2	< 5	42
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	2.5	-	-

Client Sample ID			SS-41_0.2-0.3	SS-42_0.0-0.1	SS-43_0.0-0.1	SS-44_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Se28420	S18-Se28421	S18-Se28422	S18-Se28423
Date Sampled			Sep 20, 2018	Sep 20, 2018	Sep 20, 2018	Sep 20, 2018
Test/Reference	LOR	Unit				
% Moisture	1	%	8.8	5.5	7.6	7.9
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	23	17	11	24
Copper	5	mg/kg	< 5	< 5	8.1	18
Lead	5	mg/kg	12	19	29	58
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			SS-41_0.2-0.3	SS-42_0.0-0.1	SS-43_0.0-0.1	SS-44_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Se28420	S18-Se28421	S18-Se28422	S18-Se28423
Date Sampled			Sep 20, 2018	Sep 20, 2018	Sep 20, 2018	Sep 20, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel	5	mg/kg	< 5	< 5	8.2	6.8
Zinc	5	mg/kg	< 5	26	37	450

Client Sample ID			SS-45_0.0-0.1	SS-48_0.2-0.3	SS-46_0.0-0.1	SS-47_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Se28424	S18-Se28425	S18-Se28426	S18-Se28427
Date Sampled			Sep 20, 2018	Sep 20, 2018	Sep 20, 2018	Sep 20, 2018
Test/Reference	LOR	Unit				
% Moisture	1	%	9.5	8.1	11	11
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	13
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	13	16	15	10
Copper	5	mg/kg	9.2	< 5	7.4	23
Lead	5	mg/kg	23	7.3	13	38
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	6.6	< 5	10	5.8
Zinc	5	mg/kg	44	< 5	24	50

Client Sample ID			SS-49_0.2-0.3	SS-50_0.0-0.1	SS-51_0.0-0.1	SS-52_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Se28428	S18-Se28429	S18-Se28430	S18-Se28431
Date Sampled			Sep 20, 2018	Sep 20, 2018	Sep 20, 2018	Sep 20, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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

Client Sample ID			SS-49_0.2-0.3	SS-50_0.0-0.1	SS-51_0.0-0.1	SS-52_0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-Se28428**	**S18-Se28429**	**S18-Se28430**	**S18-Se28431**
Date Sampled			**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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	%	-	-	-	120
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	99
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1221	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1232	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1242	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1248	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1254	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1260	0.1	mg/kg	-	-	-	< 0.1
Total PCB*	0.1	mg/kg	-	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	-	120
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	99
% Moisture	1	%	4.3	9.4	1.6	4.9
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	21	< 5	7.7
Copper	5	mg/kg	< 5	44	16	9.6
Lead	5	mg/kg	< 5	530	160	37
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	31	12	< 5
Zinc	5	mg/kg	< 5	130	21	39

Client Sample ID			SS-53_0.0-0.1	SS-30_0.0-0.1	SS-32_0.0-0.1	SS-36_0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-Se28432**	**S18-Se28435**	**S18-Se28436**	**S18-Se28437**
Date Sampled			**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**
Test/Reference	LOR	Unit				
% Clay	1	%	-	-	4.7	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	140	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	6.4	-
% Moisture	1	%	6.9	9.9	9.8	8.6
Heavy Metals						
Arsenic	2	mg/kg	< 2	4.9	4.8	5.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	11	15	13
Copper	5	mg/kg	8.5	48	20	16
Lead	5	mg/kg	37	150	27	17
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	5.2	< 5	10	13
Zinc	5	mg/kg	37	520	71	54

Client Sample ID			SS-53_0.0-0.1	SS-30_0.0-0.1	SS-32_0.0-0.1	SS-36_0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-Se28432**	**S18-Se28435**	**S18-Se28436**	**S18-Se28437**
Date Sampled			**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**
Test/Reference	LOR	Unit				
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	-	17	-

Client Sample ID			SS-40_0.0-0.1
Sample Matrix			**Soil**
Eurofins | mgt Sample No.			**S18-Se28438**
Date Sampled			**Sep 20, 2018**
Test/Reference	LOR	Unit	
% Moisture	1	%	12
Heavy Metals			
Arsenic	2	mg/kg	7.9
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	18
Copper	5	mg/kg	7.4
Lead	5	mg/kg	19
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	< 5
Zinc	5	mg/kg	17

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 (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 24, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C36			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 24, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 24, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Melbourne	Sep 24, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Sep 24, 2018	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Sep 24, 2018	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Sep 24, 2018	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Clay	Brisbane	Sep 24, 2018	6 Day
- Method: LTM-GEN-7040			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Sep 24, 2018	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals M8	Melbourne	Sep 24, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Melbourne	Sep 24, 2018	7 Day
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Sep 25, 2018	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
% Moisture	Melbourne	Sep 21, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
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Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 618880
Phone: 02 8245 0300
Fax:

Received: Sep 20, 2018 6:00 PM
Due: Sep 27, 2018
Priority: 5 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
External Laboratory																		
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
1	SS-29_0.0-0.1	Sep 20, 2018		Soil	S18-Se28412									X		X		
2	SS-29_2.6-2.7	Sep 20, 2018		Soil	S18-Se28413						X			X	X	X		X
3	QA20180920-JC01	Sep 20, 2018		Soil	S18-Se28414									X		X		
4	SS-31_0.2-0.3	Sep 20, 2018		Soil	S18-Se28415									X		X		
5	SS-33_0.0-0.1	Sep 20, 2018		Soil	S18-Se28416		X				X	X	X	X	X	X		X
6	SS-35_0.2-0.3	Sep 20, 2018		Soil	S18-Se28417	X				X				X		X	X	
7	SS-37_0.2-0.3	Sep 20, 2018		Soil	S18-Se28418									X		X		
8	SS-34_0.0-0.1	Sep 20, 2018		Soil	S18-Se28419									X		X		
9	SS-41_0.2-0.3	Sep 20, 2018		Soil	S18-Se28420									X		X		

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
10	SS-42_0.0-0.1	Sep 20, 2018		Soil	S18-Se28421									X		X		
11	SS-43_0.0-0.1	Sep 20, 2018		Soil	S18-Se28422									X		X		
12	SS-44_0.0-0.1	Sep 20, 2018		Soil	S18-Se28423									X		X		
13	SS-45_0.0-0.1	Sep 20, 2018		Soil	S18-Se28424									X		X		
14	SS-48_0.2-0.3	Sep 20, 2018		Soil	S18-Se28425									X		X		
15	SS-46_0.0-0.1	Sep 20, 2018		Soil	S18-Se28426									X		X		
16	SS-47_0.0-0.1	Sep 20, 2018		Soil	S18-Se28427									X		X		
17	SS-49_0.2-0.3	Sep 20, 2018		Soil	S18-Se28428									X		X		
18	SS-50_0.0-0.1	Sep 20, 2018		Soil	S18-Se28429									X		X		
19	SS-51_0.0-0.1	Sep 20, 2018		Soil	S18-Se28430									X		X		
20	SS-52_0.0-0.1	Sep 20, 2018		Soil	S18-Se28431							X	X	X		X		
21	SS-53_0.0-0.1	Sep 20, 2018		Soil	S18-Se28432									X		X		

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
22	TS	Sep 20, 2018		Water	S18-Se28433										X			
23	TB	Sep 20, 2018		Water	S18-Se28434										X			
24	SS-30_0.0-0.1	Sep 20, 2018		Soil	S18-Se28435		X							X		X		
25	SS-32_0.0-0.1	Sep 20, 2018		Soil	S18-Se28436	X				X				X		X	X	
26	SS-36_0.0-0.1	Sep 20, 2018		Soil	S18-Se28437									X		X		
27	SS-40_0.0-0.1	Sep 20, 2018		Soil	S18-Se28438									X		X		
28	SS-29_0.2-0.3	Sep 20, 2018		Soil	S18-Se28556				X									
29	SS-29_1.0-1.1	Sep 20, 2018		Soil	S18-Se28557				X									
30	SS-29_1.6-1.7	Sep 20, 2018		Soil	S18-Se28558				X									
31	SS-29_2.0-2.1	Sep 20, 2018		Soil	S18-Se28559				X									
32	SS-31_0.0-0.1	Sep 20, 2018		Soil	S18-Se28560				X									
33	SS-33_0.2-0.3	Sep 20, 2018		Soil	S18-Se28561				X									

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Sample Detail						% Clay	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
34	SS-35_0.0-0.1	Sep 20, 2018		Soil	S18-Se28562				X									
35	SS-35_1.0-1.1	Sep 20, 2018		Soil	S18-Se28563				X									
36	SS-35_1.6-1.7	Sep 20, 2018		Soil	S18-Se28564				X									
37	SS-37_0.0-0.1	Sep 20, 2018		Soil	S18-Se28565				X									
38	SS-37_0.9-1.0	Sep 20, 2018		Soil	S18-Se28566				X									
39	SS-37_1.4-1.5	Sep 20, 2018		Soil	S18-Se28567				X									
40	SS-34_0.2-0.3	Sep 20, 2018		Soil	S18-Se28568			X										
41	QA20180920-JC02	Sep 20, 2018		Soil	S18-Se28569				X									
42	SS-41_0.0-0.1	Sep 20, 2018		Soil	S18-Se28570				X									
43	SS-41_1.0-1.1	Sep 20, 2018		Soil	S18-Se28571				X									
44	SS-42_0.2-0.3	Sep 20, 2018		Soil	S18-Se28572				X									

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
45	SS-42_1.0-1.1	Sep 20, 2018		Soil	S18-Se28573				X									
46	SS-44_0.2-0.3	Sep 20, 2018		Soil	S18-Se28574				X									
47	SS-45_0.2-0.3	Sep 20, 2018		Soil	S18-Se28575				X									
48	SS-45_1.3-1.4	Sep 20, 2018		Soil	S18-Se28576				X									
49	SS-48_0.0-0.1	Sep 20, 2018		Soil	S18-Se28577				X									
50	SS-49_0.0-0.1	Sep 20, 2018		Soil	S18-Se28578				X									
51	SS-49_0.9-1.0	Sep 20, 2018		Soil	S18-Se28579				X									
52	SS-50_0.2-0.3	Sep 20, 2018		Soil	S18-Se28580				X									
53	SS-52_0.2-0.3	Sep 20, 2018		Soil	S18-Se28581				X									
54	SS-53_0.2-0.3	Sep 20, 2018		Soil	S18-Se28582				X									
55	SS-30_0.2-0.3	Sep 20, 2018		Soil	S18-Se28583				X									
56	SS-39_0.0-0.1	Sep 20, 2018		Soil	S18-Se28602				X									

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
57	SS-39_0.2-0.3	Sep 20, 2018		Soil	S18-Se28603				X									
Test Counts						2	2	1	29	2	2	2	2	25	4	25	2	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil 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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
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	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

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	
Method Blank							
Polychlorinated Biphenyls							
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	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
% Clay	%	< 1			1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
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	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	77			70-130	Pass	
TRH C10-C14	%	80			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	78			70-130	Pass	
Toluene	%	82			70-130	Pass	
Ethylbenzene	%	96			70-130	Pass	
m&p-Xylenes	%	91			70-130	Pass	
Xylenes - Total	%	94			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	121			70-130	Pass	
TRH C6-C10	%	79			70-130	Pass	
TRH >C10-C16	%	78			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	92			70-130	Pass	
Acenaphthylene	%	106			70-130	Pass	
Anthracene	%	113			70-130	Pass	
Benz(a)anthracene	%	90			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	%	91			70-130	Pass	
Benzo(b&j)fluoranthene	%	90			70-130	Pass	
Benzo(g.h.i)perylene	%	87			70-130	Pass	
Benzo(k)fluoranthene	%	114			70-130	Pass	
Chrysene	%	90			70-130	Pass	
Dibenz(a.h)anthracene	%	72			70-130	Pass	
Fluoranthene	%	118			70-130	Pass	
Fluorene	%	97			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	79			70-130	Pass	
Naphthalene	%	109			70-130	Pass	
Phenanthrene	%	99			70-130	Pass	
Pyrene	%	114			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	125			70-130	Pass	
4.4'-DDE	%	128			70-130	Pass	
4.4'-DDT	%	105			70-130	Pass	
a-BHC	%	109			70-130	Pass	
Aldrin	%	123			70-130	Pass	
b-BHC	%	113			70-130	Pass	
d-BHC	%	84			70-130	Pass	
Dieldrin	%	127			70-130	Pass	
Endosulfan I	%	120			70-130	Pass	
Endosulfan II	%	111			70-130	Pass	
Endosulfan sulphate	%	117			70-130	Pass	
Endrin	%	120			70-130	Pass	
Endrin aldehyde	%	128			70-130	Pass	
Endrin ketone	%	121			70-130	Pass	
g-BHC (Lindane)	%	112			70-130	Pass	
Heptachlor	%	117			70-130	Pass	
Heptachlor epoxide	%	118			70-130	Pass	
Hexachlorobenzene	%	106			70-130	Pass	
Methoxychlor	%	106			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	100			70-130	Pass	
LCS - % Recovery							
% Clay	%	93			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	95			80-120	Pass	
Cadmium	%	98			80-120	Pass	
Chromium	%	105			80-120	Pass	
Copper	%	102			80-120	Pass	
Lead	%	102			80-120	Pass	
Mercury	%	101			75-125	Pass	
Nickel	%	103			80-120	Pass	
Zinc	%	107			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M18-Se31848	NCP	%	77			70-130	Pass	
TRH C10-C14	M18-Se31843	NCP	%	87			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
BTEX				Result 1					
Benzene	M18-Se31838	NCP	%	77			70-130	Pass	
Toluene	M18-Se31848	NCP	%	77			70-130	Pass	
Ethylbenzene	M18-Se31848	NCP	%	82			70-130	Pass	
m&p-Xylenes	M18-Se31848	NCP	%	80			70-130	Pass	
o-Xylene	M18-Se31848	NCP	%	84			70-130	Pass	
Xylenes - Total	M18-Se31848	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M18-Se31848	NCP	%	116			70-130	Pass	
TRH C6-C10	M18-Se31848	NCP	%	89			70-130	Pass	
TRH >C10-C16	M18-Se31843	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M18-Se33452	NCP	%	74			70-130	Pass	
Acenaphthylene	M18-Se33452	NCP	%	85			70-130	Pass	
Anthracene	M18-Se33452	NCP	%	89			70-130	Pass	
Benz(a)anthracene	M18-Se33452	NCP	%	73			70-130	Pass	
Benzo(a)pyrene	M18-Se33452	NCP	%	87			70-130	Pass	
Benzo(b&j)fluoranthene	M18-Se33452	NCP	%	88			70-130	Pass	
Benzo(g.h.i)perylene	M18-Se33452	NCP	%	87			70-130	Pass	
Benzo(k)fluoranthene	M18-Se33452	NCP	%	101			70-130	Pass	
Chrysene	M18-Se33452	NCP	%	72			70-130	Pass	
Dibenz(a.h)anthracene	M18-Se33452	NCP	%	75			70-130	Pass	
Fluoranthene	M18-Se33452	NCP	%	93			70-130	Pass	
Fluorene	M18-Se33452	NCP	%	78			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M18-Se33452	NCP	%	78			70-130	Pass	
Naphthalene	M18-Se33452	NCP	%	89			70-130	Pass	
Phenanthrene	M18-Se33452	NCP	%	80			70-130	Pass	
Pyrene	M18-Se33452	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M18-Se33044	NCP	%	118			70-130	Pass	
4.4'-DDE	M18-Se33044	NCP	%	127			70-130	Pass	
4.4'-DDT	M18-Se33044	NCP	%	116			70-130	Pass	
a-BHC	M18-Se33044	NCP	%	103			70-130	Pass	
Aldrin	M18-Se33044	NCP	%	113			70-130	Pass	
b-BHC	M18-Se33044	NCP	%	106			70-130	Pass	
d-BHC	M18-Se33044	NCP	%	114			70-130	Pass	
Dieldrin	M18-Se33044	NCP	%	124			70-130	Pass	
Endosulfan I	M18-Se33044	NCP	%	113			70-130	Pass	
Endosulfan II	M18-Se33044	NCP	%	112			70-130	Pass	
Endosulfan sulphate	M18-Se33044	NCP	%	125			70-130	Pass	
Endrin	M18-Se33044	NCP	%	114			70-130	Pass	
Endrin aldehyde	M18-Se33044	NCP	%	107			70-130	Pass	
Endrin ketone	M18-Se33044	NCP	%	122			70-130	Pass	
g-BHC (Lindane)	M18-Se33044	NCP	%	107			70-130	Pass	
Heptachlor	M18-Se33044	NCP	%	115			70-130	Pass	
Heptachlor epoxide	M18-Se33044	NCP	%	110			70-130	Pass	
Hexachlorobenzene	M18-Se33044	NCP	%	99			70-130	Pass	
Methoxychlor	M18-Se33044	NCP	%	130			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-Se28423	CP	%	98			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cadmium	S18-Se28423	CP	%	101			75-125	Pass	
Chromium	S18-Se28423	CP	%	105			75-125	Pass	
Copper	S18-Se28423	CP	%	114			75-125	Pass	
Lead	S18-Se28423	CP	%	98			75-125	Pass	
Mercury	S18-Se28423	CP	%	97			70-130	Pass	
Nickel	S18-Se28423	CP	%	99			75-125	Pass	
Zinc	S18-Se28423	CP	%	142			75-125	Fail	Q08
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	A18-Se28039	NCP	%	14	14	1.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M18-Se31847	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M18-Se29740	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M18-Se29740	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M18-Se29740	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M18-Se31847	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M18-Se31847	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M18-Se31847	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M18-Se31847	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M18-Se31847	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	M18-Se31847	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M18-Se31847	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M18-Se31847	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M18-Se29740	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M18-Se29740	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M18-Se29740	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M18-Se30270	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
% Clay	M18-Se32954	NCP	%	5.0	3.8	29	30%	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)	M18-Se31089	NCP	uS/cm	160	160	<1	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	M18-Se31089	NCP	pH Units	7.8	7.8	pass	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Cation Exchange Capacity	S18-Se28417	CP	meq/100g	2.5	2.7	9.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-Se28422	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S18-Se28422	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S18-Se28422	CP	mg/kg	11	8.0	28	30%	Pass	
Copper	S18-Se28422	CP	mg/kg	8.1	6.4	23	30%	Pass	
Lead	S18-Se28422	CP	mg/kg	29	22	25	30%	Pass	
Mercury	S18-Se28422	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S18-Se28422	CP	mg/kg	8.2	6.9	18	30%	Pass	
Zinc	S18-Se28422	CP	mg/kg	37	33	13	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-Se28423	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S18-Se28423	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S18-Se28423	CP	mg/kg	24	25	2.0	30%	Pass	
Copper	S18-Se28423	CP	mg/kg	18	18	2.0	30%	Pass	
Lead	S18-Se28423	CP	mg/kg	58	59	2.0	30%	Pass	
Mercury	S18-Se28423	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S18-Se28423	CP	mg/kg	6.8	7.0	3.0	30%	Pass	
Zinc	S18-Se28423	CP	mg/kg	450	450	<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
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

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)
Julie Kay	Senior Analyst-Inorganic (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)

Glenn Jackson

National Operations 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.

Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Claudia Bennett**

Report **618880-W**
Project name PEAT ISLAND
Project ID 54933
Received Date Sep 20, 2018

Client Sample ID			R20 **TS**	**TB**
Sample Matrix			**Water**	**Water**
Eurofins | mgt Sample No.			**S18-Se28433**	**S18-Se28434**
Date Sampled			**Sep 20, 2018**	**Sep 20, 2018**
Test/Reference	LOR	Unit		
BTEX				
Benzene	0.001	mg/L	88	< 0.001
Toluene	0.001	mg/L	88	< 0.001
Ethylbenzene	0.001	mg/L	91	< 0.001
m&p-Xylenes	0.002	mg/L	88	< 0.002
o-Xylene	0.001	mg/L	96	< 0.001
Xylenes - Total	0.003	mg/L	91	< 0.003
4-Bromofluorobenzene (surr.)	1	%	107	127

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 (regarding both quality and NATA accreditation).

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
BTEX	Melbourne	Sep 22, 2018	14 Day

- Method: TRH C6-C40 - LTM-ORG-2010

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Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 618880
Phone: 02 8245 0300
Fax:

Received: Sep 20, 2018 6:00 PM
Due: Sep 27, 2018
Priority: 5 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail	% Clay	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271				X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217		X	X										
Brisbane Laboratory - NATA Site # 20794	X												
Perth Laboratory - NATA Site # 23736													
External Laboratory													

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	SS-29_0.0-0.1	Sep 20, 2018		Soil	S18-Se28412									X		X		
2	SS-29_2.6-2.7	Sep 20, 2018		Soil	S18-Se28413						X			X	X	X		X
3	QA20180920-JC01	Sep 20, 2018		Soil	S18-Se28414									X		X		
4	SS-31_0.2-0.3	Sep 20, 2018		Soil	S18-Se28415									X		X		
5	SS-33_0.0-0.1	Sep 20, 2018		Soil	S18-Se28416		X				X	X	X	X	X	X		X
6	SS-35_0.2-0.3	Sep 20, 2018		Soil	S18-Se28417	X				X				X		X	X	
7	SS-37_0.2-0.3	Sep 20, 2018		Soil	S18-Se28418									X		X		
8	SS-34_0.0-0.1	Sep 20, 2018		Soil	S18-Se28419									X		X		
9	SS-41_0.2-0.3	Sep 20, 2018		Soil	S18-Se28420									X		X		

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
10	SS-42_0.0-0.1	Sep 20, 2018		Soil	S18-Se28421									X		X		
11	SS-43_0.0-0.1	Sep 20, 2018		Soil	S18-Se28422									X		X		
12	SS-44_0.0-0.1	Sep 20, 2018		Soil	S18-Se28423									X		X		
13	SS-45_0.0-0.1	Sep 20, 2018		Soil	S18-Se28424									X		X		
14	SS-48_0.2-0.3	Sep 20, 2018		Soil	S18-Se28425									X		X		
15	SS-46_0.0-0.1	Sep 20, 2018		Soil	S18-Se28426									X		X		
16	SS-47_0.0-0.1	Sep 20, 2018		Soil	S18-Se28427									X		X		
17	SS-49_0.2-0.3	Sep 20, 2018		Soil	S18-Se28428									X		X		
18	SS-50_0.0-0.1	Sep 20, 2018		Soil	S18-Se28429									X		X		
19	SS-51_0.0-0.1	Sep 20, 2018		Soil	S18-Se28430									X		X		
20	SS-52_0.0-0.1	Sep 20, 2018		Soil	S18-Se28431							X	X	X		X		
21	SS-53_0.0-0.1	Sep 20, 2018		Soil	S18-Se28432									X		X		

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
22	TS	Sep 20, 2018		Water	S18-Se28433										X			
23	TB	Sep 20, 2018		Water	S18-Se28434										X			
24	SS-30_0.0-0.1	Sep 20, 2018		Soil	S18-Se28435		X							X		X		
25	SS-32_0.0-0.1	Sep 20, 2018		Soil	S18-Se28436	X				X				X		X	X	
26	SS-36_0.0-0.1	Sep 20, 2018		Soil	S18-Se28437									X		X		
27	SS-40_0.0-0.1	Sep 20, 2018		Soil	S18-Se28438									X		X		
28	SS-29_0.2-0.3	Sep 20, 2018		Soil	S18-Se28556				X									
29	SS-29_1.0-1.1	Sep 20, 2018		Soil	S18-Se28557				X									
30	SS-29_1.6-1.7	Sep 20, 2018		Soil	S18-Se28558				X									
31	SS-29_2.0-2.1	Sep 20, 2018		Soil	S18-Se28559				X									
32	SS-31_0.0-0.1	Sep 20, 2018		Soil	S18-Se28560				X									
33	SS-33_0.2-0.3	Sep 20, 2018		Soil	S18-Se28561				X									

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
34	SS-35_0.0-0.1	Sep 20, 2018		Soil	S18-Se28562				X									
35	SS-35_1.0-1.1	Sep 20, 2018		Soil	S18-Se28563				X									
36	SS-35_1.6-1.7	Sep 20, 2018		Soil	S18-Se28564				X									
37	SS-37_0.0-0.1	Sep 20, 2018		Soil	S18-Se28565				X									
38	SS-37_0.9-1.0	Sep 20, 2018		Soil	S18-Se28566				X									
39	SS-37_1.4-1.5	Sep 20, 2018		Soil	S18-Se28567				X									
40	SS-34_0.2-0.3	Sep 20, 2018		Soil	S18-Se28568			X										
41	QA20180920-JC02	Sep 20, 2018		Soil	S18-Se28569				X									
42	SS-41_0.0-0.1	Sep 20, 2018		Soil	S18-Se28570				X									
43	SS-41_1.0-1.1	Sep 20, 2018		Soil	S18-Se28571				X									
44	SS-42_0.2-0.3	Sep 20, 2018		Soil	S18-Se28572				X									

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
45	SS-42_1.0-1.1	Sep 20, 2018		Soil	S18-Se28573				X									
46	SS-44_0.2-0.3	Sep 20, 2018		Soil	S18-Se28574				X									
47	SS-45_0.2-0.3	Sep 20, 2018		Soil	S18-Se28575				X									
48	SS-45_1.3-1.4	Sep 20, 2018		Soil	S18-Se28576				X									
49	SS-48_0.0-0.1	Sep 20, 2018		Soil	S18-Se28577				X									
50	SS-49_0.0-0.1	Sep 20, 2018		Soil	S18-Se28578				X									
51	SS-49_0.9-1.0	Sep 20, 2018		Soil	S18-Se28579				X									
52	SS-50_0.2-0.3	Sep 20, 2018		Soil	S18-Se28580				X									
53	SS-52_0.2-0.3	Sep 20, 2018		Soil	S18-Se28581				X									
54	SS-53_0.2-0.3	Sep 20, 2018		Soil	S18-Se28582				X									
55	SS-30_0.2-0.3	Sep 20, 2018		Soil	S18-Se28583				X									
56	SS-39_0.0-0.1	Sep 20, 2018		Soil	S18-Se28602				X									

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X										
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
57	SS-39_0.2-0.3	Sep 20, 2018		Soil	S18-Se28603				X									
Test Counts						2	2	1	29	2	2	2	2	25	4	25	2	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil 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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
BTEX							
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	
LCS - % Recovery							
BTEX							
Benzene	%	94			70-130	Pass	
Toluene	%	95			70-130	Pass	
Ethylbenzene	%	90			70-130	Pass	
m&p-Xylenes	%	93			70-130	Pass	
Xylenes - Total	%	93			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
BTEX				Result 1					
Benzene	B18-Se26628	NCP	%	104			70-130	Pass	
Toluene	B18-Se26628	NCP	%	100			70-130	Pass	
Ethylbenzene	B18-Se26628	NCP	%	104			70-130	Pass	
m&p-Xylenes	B18-Se26628	NCP	%	104			70-130	Pass	
o-Xylene	B18-Se26628	NCP	%	104			70-130	Pass	
Xylenes - Total	B18-Se26628	NCP	%	104			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	B18-Se26627	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	B18-Se26627	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	B18-Se26627	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	B18-Se26627	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	B18-Se26627	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	B18-Se26627	NCP	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
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Nibha Vaidya	Analytical Services Manager
Harry Bacalis	Senior Analyst-Volatile (VIC)

Glenn Jackson
National Operations 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.

010201

PROJECT NO.: 54933
PROJECT NAME: Peat Island
DATE NEEDED BY: 5+ TAT

LABORATORY BATCH NO.:
SAMPLERS: CB
QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) sbarrows@jbsg.com.au; (3) cbennett@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	PFAS	Heavy Metals	BTEX	OCP/PCB	TRH/BTEX	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA
3548 0-0.1	Soil	21.9.18		J+B			X					
3554 0-0.1	↓			PFAS Jar		X						
3555 0-0.1	↓			↓		X						
TS	Water			Vials				X				
TB				Vials			X	X				
RINS 210918				2xV, 1xA, 1xM			X					
RINS 200918	↓	20.9.18		↓			X		X	X		

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE
NAME: CB DATE: 21/9/18 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Ellen D. DATE: 21-9-18 OF: Eurofins MGT 3:37 PM	COOLER SEAL – Yes..... No ..... Intact ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST =

#618

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NATA # 1261
Site # 1254 & 14271

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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Scott Burrows
Project name: PEAT ISLAND
Project ID: 54933
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Sep 21, 2018 3:37 PM
Eurofins | mgt reference: **618949**

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 | mgt Sample Receipt : 14.1 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).

Notes

ASB bag received for sample SS48 0-0.1 placed on hold in Sydney.

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Scott Burrows - SBurrows@jbsg.com.au.

Note: A copy of these results will also be delivered to the general JBS & G Australia (NSW) P/L email address.

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web : www.eurofins.com.au

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NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 618949
Phone: 02 8245 0300
Fax:

Received: Sep 21, 2018 3:37 PM
Due: Sep 28, 2018
Priority: 5 Day
Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Metals M8	BTEX	Eurofins | mgt Suite B13	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794									X	X		X
Perth Laboratory - NATA Site # 23736												
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	SS48 0-0.1	Sep 21, 2018		Soil	S18-Se28908	X			X			
2	SS54 0-0.1	Sep 21, 2018		Soil	S18-Se28909					X		X
3	SS55 0-0.1	Sep 21, 2018		Soil	S18-Se28910					X		X
4	TS	Sep 21, 2018		Water	S18-Se28911		X					
5	TB	Sep 21, 2018		Water	S18-Se28912		X					
6	RINS 210918	Sep 21, 2018		Water	S18-Se28913	X						
7	RINS 200918	Sep 21, 2018		Water	S18-Se28914	X	X	X			X	
Test Counts						3	3	1	3	3	1	2

Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Scott Burrows**

Report **618949-S**
Project name PEAT ISLAND
Project ID 54933
Received Date Sep 21, 2018

Client Sample ID			**SS48 0-0.1**	**SS54 0-0.1**	**SS55 0-0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-Se28908**	**S18-Se28909**	**S18-Se28910**
Date Sampled			**Sep 21, 2018**	**Sep 21, 2018**	**Sep 21, 2018**
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	-	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	-	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	-	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	-	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	-	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	-	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	-	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	-	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	-	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	-	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	-	< 5	< 5
13C4-PFBA (surr.)	1	%	-	115	132
13C5-PFPeA (surr.)	1	%	-	91	113
13C5-PFHxA (surr.)	1	%	-	102	115
13C4-PFHpA (surr.)	1	%	-	95	119
13C8-PFOA (surr.)	1	%	-	84	111
13C5-PFNA (surr.)	1	%	-	78	114
13C6-PFDA (surr.)	1	%	-	62	108
13C2-PFUnDA (surr.)	1	%	-	61	104
13C2-PFDoDA (surr.)	1	%	-	41	92
13C2-PFTeDA (surr.)	1	%	-	44	95
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	-	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	-	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	-	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	-	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	-	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	-	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	-	< 10	< 10
13C8-FOSA (surr.)	1	%	-	21	79
D3-N-MeFOSA (surr.)	1	%	-	38	73
D5-N-EtFOSA (surr.)	1	%	-	38	81

Client Sample ID			SS48 0-0.1	SS54 0-0.1	SS55 0-0.1
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Se28908	S18-Se28909	S18-Se28910
Date Sampled			Sep 21, 2018	Sep 21, 2018	Sep 21, 2018
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonamido substances					
D7-N-MeFOSE (surr.)	1	%	-	34	65
D9-N-EtFOSE (surr.)	1	%	-	29	51
D5-N-EtFOSAA (surr.)	1	%	-	36	74
D3-N-MeFOSAA (surr.)	1	%	-	26	77
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	-	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	-	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	-	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	-	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	-	[N09]5.4	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	-	< 5	< 5
13C3-PFBS (surr.)	1	%	-	105	124
18O2-PFHxS (surr.)	1	%	-	99	123
13C8-PFOS (surr.)	1	%	-	72	100
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	-	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	-	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	-	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N15]	5	ug/kg	-	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	-	184	162
13C2-6:2 FTSA (surr.)	1	%	-	135	136
13C2-8:2 FTSA (surr.)	1	%	-	62	131
PFASs Summations					
Sum (PFHxS + PFOS)*	5	ug/kg	-	5.4	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	5.4	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	5.4	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	< 10	< 10
Sum of PFASs (n=28)*	50	ug/kg	-	< 50	< 50
Heavy Metals					
Arsenic	2	mg/kg	< 2	-	-
Cadmium	0.4	mg/kg	< 0.4	-	-
Chromium	5	mg/kg	13	-	-
Copper	5	mg/kg	< 5	-	-
Lead	5	mg/kg	9.1	-	-
Mercury	0.1	mg/kg	< 0.1	-	-
Nickel	5	mg/kg	8.1	-	-
Zinc	5	mg/kg	17	-	-
% Moisture	1	%	6.0	14	8.3

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 (regarding both quality and NATA accreditation).

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
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Sep 24, 2018	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Sep 24, 2018	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Sep 24, 2018	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Sep 24, 2018	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Metals M8	Melbourne	Sep 26, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Brisbane	Sep 21, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

eurofins | mgt

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NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 618949
Phone: 02 8245 0300
Fax:

Received: Sep 21, 2018 3:37 PM
Due: Sep 28, 2018
Priority: 5 Day
Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Metals M8	BTEX	Eurofins | mgt Suite B13	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794									X	X		X
Perth Laboratory - NATA Site # 23736												
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	SS48 0-0.1	Sep 21, 2018		Soil	S18-Se28908	X			X			
2	SS54 0-0.1	Sep 21, 2018		Soil	S18-Se28909					X		X
3	SS55 0-0.1	Sep 21, 2018		Soil	S18-Se28910					X		X
4	TS	Sep 21, 2018		Water	S18-Se28911		X					
5	TB	Sep 21, 2018		Water	S18-Se28912		X					
6	RINS 210918	Sep 21, 2018		Water	S18-Se28913	X						
7	RINS 200918	Sep 21, 2018		Water	S18-Se28914	X	X	X			X	
Test Counts						3	3	1	3	3	1	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil 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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
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 (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
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	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	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	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
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	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
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	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	95			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	89			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	87			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroheptanoic acid (PFHpA)	%	87			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	92			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	91			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	102			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	101			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	108			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	96			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	92			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	102			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	92			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	88			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)	%	116			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	95			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	93			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	91			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	88			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	87			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	100			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	93			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	89			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	106			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	83			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	89			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	121			50-150	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	116			80-120	Pass	
Cadmium	%	111			80-120	Pass	
Chromium	%	120			80-120	Pass	
Copper	%	117			80-120	Pass	
Lead	%	120			80-120	Pass	
Mercury	%	99			75-125	Pass	
Nickel	%	116			80-120	Pass	
Zinc	%	113			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M18-Se32689	NCP	%	117			75-125	Pass	
Cadmium	M18-Se32689	NCP	%	116			75-125	Pass	
Chromium	M18-Se32689	NCP	%	123			75-125	Pass	
Copper	M18-Se32689	NCP	%	120			75-125	Pass	
Lead	M18-Se32689	NCP	%	124			75-125	Pass	
Mercury	M18-Se32689	NCP	%	100			70-130	Pass	
Nickel	M18-Se32689	NCP	%	119			75-125	Pass	
Zinc	M18-Se32689	NCP	%	114			75-125	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B18-Se25823	NCP	%	97			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B18-Se25823	NCP	%	88			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B18-Se25823	NCP	%	93			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B18-Se25823	NCP	%	96			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B18-Se25823	NCP	%	101			50-150	Pass	
Perfluorononanoic acid (PFNA)	B18-Se25823	NCP	%	99			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B18-Se25823	NCP	%	99			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B18-Se25823	NCP	%	97			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B18-Se25823	NCP	%	92			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B18-Se25823	NCP	%	83			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B18-Se25823	NCP	%	90			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B18-Se25823	NCP	%	102			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B18-Se25823	NCP	%	95			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B18-Se25823	NCP	%	91			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B18-Se25823	NCP	%	106			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B18-Se25823	NCP	%	114			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B18-Se25823	NCP	%	97			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B18-Se25823	NCP	%	86			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B18-Se25823	NCP	%	97			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B18-Se25823	NCP	%	100			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B18-Se25823	NCP	%	103			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B18-Se25823	NCP	%	102			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B18-Se25823	NCP	%	128			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B18-Se25823	NCP	%	93			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B18-Se25823	NCP	%	91			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B18-Se25823	NCP	%	71			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B18-Se25823	NCP	%	86			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B18-Se25823	NCP	%	127			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-Se30484	NCP	mg/kg	7.8	7.8	<1	30%	Pass	
Cadmium	M18-Se30484	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M18-Se30484	NCP	mg/kg	21	22	4.0	30%	Pass	
Copper	M18-Se30484	NCP	mg/kg	6.1	5.5	10	30%	Pass	
Lead	M18-Se30484	NCP	mg/kg	14	15	2.0	30%	Pass	
Mercury	M18-Se30484	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M18-Se30484	NCP	mg/kg	5.3	5.7	6.0	30%	Pass	
Zinc	M18-Se30484	NCP	mg/kg	37	36	2.0	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B18-Se25002	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B18-Se25002	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B18-Se25002	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B18-Se25002	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
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

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Jonathon Angell	Senior Analyst-Organic (QLD)

Glenn Jackson
National Operations 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 | mgt

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Level 1, 50 Margaret St
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: **Scott Burrows**

Report **618949-W**
Project name PEAT ISLAND
Project ID 54933
Received Date Sep 21, 2018

Client Sample ID			**TS**	**TB**	**RINS 210918**	**RINS 200918**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S18-Se28911**	**S18-Se28912**	**S18-Se28913**	**S18-Se28914**
Date Sampled			**Sep 21, 2018**	**Sep 21, 2018**	**Sep 21, 2018**	**Sep 21, 2018**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	-	-	-	< 0.02
TRH C10-C14	0.05	mg/L	-	-	-	< 0.05
TRH C15-C28	0.1	mg/L	-	-	-	< 0.1
TRH C29-C36	0.1	mg/L	-	-	-	< 0.1
TRH C10-36 (Total)	0.1	mg/L	-	-	-	< 0.1
BTEX						
Benzene	0.001	mg/L	78	< 0.001	-	< 0.001
Toluene	0.001	mg/L	81	< 0.001	-	< 0.001
Ethylbenzene	0.001	mg/L	89	< 0.001	-	< 0.001
m&p-Xylenes	0.002	mg/L	88	< 0.002	-	< 0.002
o-Xylene	0.001	mg/L	89	< 0.001	-	< 0.001
Xylenes - Total	0.003	mg/L	89	< 0.003	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	120	114	-	111
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	-	-	-	< 0.01
TRH C6-C10	0.02	mg/L	-	-	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	-	-	< 0.02
TRH >C10-C16	0.05	mg/L	-	-	-	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	-	-	< 0.05
TRH >C16-C34	0.1	mg/L	-	-	-	< 0.1
TRH >C34-C40	0.1	mg/L	-	-	-	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	-	-	-	< 0.1
Organochlorine Pesticides						
Chlordanes - Total	0.001	mg/L	-	-	-	< 0.001
4.4'-DDD	0.0001	mg/L	-	-	-	< 0.0001
4.4'-DDE	0.0001	mg/L	-	-	-	< 0.0001
4.4'-DDT	0.0001	mg/L	-	-	-	< 0.0001
a-BHC	0.0001	mg/L	-	-	-	< 0.0001
Aldrin	0.0001	mg/L	-	-	-	< 0.0001
b-BHC	0.0001	mg/L	-	-	-	< 0.0001
d-BHC	0.0001	mg/L	-	-	-	< 0.0001
Dieldrin	0.0001	mg/L	-	-	-	< 0.0001
Endosulfan I	0.0001	mg/L	-	-	-	< 0.0001
Endosulfan II	0.0001	mg/L	-	-	-	< 0.0001
Endosulfan sulphate	0.0001	mg/L	-	-	-	< 0.0001

Client Sample ID			TS	TB	RINS 210918	RINS 200918
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S18-Se28911**	**S18-Se28912**	**S18-Se28913**	**S18-Se28914**
Date Sampled			**Sep 21, 2018**	**Sep 21, 2018**	**Sep 21, 2018**	**Sep 21, 2018**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endrin	0.0001	mg/L	-	-	-	< 0.0001
Endrin aldehyde	0.0001	mg/L	-	-	-	< 0.0001
Endrin ketone	0.0001	mg/L	-	-	-	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	-	-	-	< 0.0001
Heptachlor	0.0001	mg/L	-	-	-	< 0.0001
Heptachlor epoxide	0.0001	mg/L	-	-	-	< 0.0001
Hexachlorobenzene	0.0001	mg/L	-	-	-	< 0.0001
Methoxychlor	0.0001	mg/L	-	-	-	< 0.0001
Toxaphene	0.01	mg/L	-	-	-	< 0.01
Aldrin and Dieldrin (Total)*	0.0001	mg/L	-	-	-	< 0.0001
DDT + DDE + DDD (Total)*	0.0001	mg/L	-	-	-	< 0.0001
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	-	-	-	< 0.001
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	-	-	-	< 0.001
Dibutylchlorendate (surr.)	1	%	-	-	-	55
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	65
Polychlorinated Biphenyls						
Aroclor-1016	0.001	mg/L	-	-	-	< 0.001
Aroclor-1221	0.001	mg/L	-	-	-	< 0.001
Aroclor-1232	0.001	mg/L	-	-	-	< 0.001
Aroclor-1242	0.001	mg/L	-	-	-	< 0.001
Aroclor-1248	0.001	mg/L	-	-	-	< 0.001
Aroclor-1254	0.001	mg/L	-	-	-	< 0.001
Aroclor-1260	0.001	mg/L	-	-	-	< 0.001
Total PCB*	0.001	mg/L	-	-	-	< 0.001
Dibutylchlorendate (surr.)	1	%	-	-	-	55
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	65
Heavy Metals						
Arsenic	0.001	mg/L	-	-	< 0.001	< 0.001
Cadmium	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Chromium	0.001	mg/L	-	-	< 0.001	< 0.001
Copper	0.001	mg/L	-	-	< 0.001	< 0.001
Lead	0.001	mg/L	-	-	< 0.001	< 0.001
Mercury	0.0001	mg/L	-	-	< 0.0001	< 0.0001
Nickel	0.001	mg/L	-	-	< 0.001	< 0.001
Zinc	0.005	mg/L	-	-	< 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 (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 25, 2018	7 Day
- Method: LTM-ORG-2010 TRH C6-C36			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 24, 2018	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 25, 2018	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Melbourne	Sep 24, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Metals M8	Melbourne	Sep 24, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins | mgt Suite B13			
Organochlorine Pesticides	Melbourne	Sep 25, 2018	7 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Sep 25, 2018	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			

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NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 618949
Phone: 02 8245 0300
Fax:

Received: Sep 21, 2018 3:37 PM
Due: Sep 28, 2018
Priority: 5 Day
Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Metals M8	BTEX	Eurofins | mgt Suite B13	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794									X	X		X
Perth Laboratory - NATA Site # 23736												
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	SS48 0-0.1	Sep 21, 2018		Soil	S18-Se28908	X			X			
2	SS54 0-0.1	Sep 21, 2018		Soil	S18-Se28909					X		X
3	SS55 0-0.1	Sep 21, 2018		Soil	S18-Se28910					X		X
4	TS	Sep 21, 2018		Water	S18-Se28911		X					
5	TB	Sep 21, 2018		Water	S18-Se28912		X					
6	RINS 210918	Sep 21, 2018		Water	S18-Se28913	X						
7	RINS 200918	Sep 21, 2018		Water	S18-Se28914	X	X	X			X	
Test Counts						3	3	1	3	3	1	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil 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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
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	
Method Blank							
BTEX							
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	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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	
Method Blank							
Organochlorine Pesticides							
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	
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	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.001			0.001	Pass	
Aroclor-1221	mg/L	< 0.001			0.001	Pass	
Aroclor-1232	mg/L	< 0.001			0.001	Pass	
Aroclor-1242	mg/L	< 0.001			0.001	Pass	
Aroclor-1248	mg/L	< 0.001			0.001	Pass	
Aroclor-1254	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/L	< 0.001			0.001	Pass	
Total PCB*	mg/L	< 0.001			0.001	Pass	
Method Blank							
Heavy Metals							
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	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	111			70-130	Pass	
TRH C10-C14	%	85			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	103			70-130	Pass	
Toluene	%	105			70-130	Pass	
Ethylbenzene	%	119			70-130	Pass	
m&p-Xylenes	%	116			70-130	Pass	
Xylenes - Total	%	115			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	107			70-130	Pass	
TRH C6-C10	%	118			70-130	Pass	
TRH >C10-C16	%	82			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	114			70-130	Pass	
4.4'-DDD	%	120			70-130	Pass	
4.4'-DDE	%	103			70-130	Pass	
4.4'-DDT	%	92			70-130	Pass	
a-BHC	%	91			70-130	Pass	
Aldrin	%	89			70-130	Pass	
b-BHC	%	97			70-130	Pass	
d-BHC	%	90			70-130	Pass	
Dieldrin	%	109			70-130	Pass	
Endosulfan I	%	96			70-130	Pass	
Endosulfan II	%	110			70-130	Pass	
Endosulfan sulphate	%	103			70-130	Pass	
Endrin	%	101			70-130	Pass	
Endrin aldehyde	%	104			70-130	Pass	
Endrin ketone	%	109			70-130	Pass	
g-BHC (Lindane)	%	90			70-130	Pass	
Heptachlor	%	96			70-130	Pass	
Heptachlor epoxide	%	116			70-130	Pass	
Hexachlorobenzene	%	95			70-130	Pass	
Methoxychlor	%	107			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	90			80-120	Pass	
Cadmium	%	91			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium			%	91			80-120	Pass	
Copper			%	92			80-120	Pass	
Lead			%	91			80-120	Pass	
Mercury			%	95			75-125	Pass	
Nickel			%	92			80-120	Pass	
Zinc			%	92			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M18-Se29971	NCP	%	75			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M18-Se29971	NCP	%	75			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M18-Se13337	NCP	%	81			70-130	Pass	
4.4'-DDD	M18-Se13337	NCP	%	71			70-130	Pass	
4.4'-DDE	M18-Se13337	NCP	%	74			70-130	Pass	
4.4'-DDT	M18-Se13337	NCP	%	85			70-130	Pass	
a-BHC	M18-Se13337	NCP	%	85			70-130	Pass	
Aldrin	M18-Se13337	NCP	%	87			70-130	Pass	
b-BHC	M18-Se13337	NCP	%	85			70-130	Pass	
d-BHC	M18-Se13337	NCP	%	75			70-130	Pass	
Dieldrin	M18-Se13337	NCP	%	87			70-130	Pass	
Endosulfan I	M18-Se13337	NCP	%	81			70-130	Pass	
Endosulfan II	M18-Se13337	NCP	%	86			70-130	Pass	
Endosulfan sulphate	M18-Se13337	NCP	%	80			70-130	Pass	
Endrin	M18-Se13337	NCP	%	72			70-130	Pass	
Endrin aldehyde	M18-Se13337	NCP	%	79			70-130	Pass	
Endrin ketone	M18-Se13337	NCP	%	77			70-130	Pass	
g-BHC (Lindane)	M18-Se13337	NCP	%	87			70-130	Pass	
Heptachlor	M18-Se13337	NCP	%	82			70-130	Pass	
Heptachlor epoxide	M18-Se13337	NCP	%	77			70-130	Pass	
Hexachlorobenzene	M18-Se13337	NCP	%	92			70-130	Pass	
Methoxychlor	M18-Se13337	NCP	%	82			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M18-Se29970	NCP	mg/L	32	5.7	22	30%	Pass	
TRH C15-C28	M18-Se29970	NCP	mg/L	62	10	27	30%	Pass	
TRH C29-C36	M18-Se29970	NCP	mg/L	0.3	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M18-Se29970	NCP	mg/L	53	9.1	25	30%	Pass	
TRH >C16-C34	M18-Se29970	NCP	mg/L	35	7.1	28	30%	Pass	
TRH >C34-C40	M18-Se29970	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M18-Se19125	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4.4'-DDD	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDE	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDT	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
a-BHC	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Aldrin	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
b-BHC	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
d-BHC	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Dieldrin	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan I	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan II	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan sulphate	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin aldehyde	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin ketone	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
g-BHC (Lindane)	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor epoxide	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Hexachlorobenzene	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Methoxychlor	M18-Se19125	NCP	mg/L	< 0.0001	< 0.0001	<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.

Authorised By

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)

Glenn Jackson

National Operations 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.

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: [redacted] 54933	LABORATORY BATCH NO.:
PROJECT NAME: [redacted] Peat Island	SAMPLERS: JC
DATE NEEDED BY: Standard TAT	QC LEVEL: NEPM (2013)
PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688	Sburrow@jbsg.com.au
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) [redacted]@jbsg.com.au; (3) [redacted]Cbendtt@jbsg.com.au	

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	PAH	TPH/BTEX	BTEX	PFASs	ASBESTOS	SELENIUM	Phenols	Explosives	OCP/PCB	pH, CEC, XCa							TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
SS-17_0-0.1	Soil	19.8.18		Jar + Bag + Ice		X																			
↓ -0.2-0.3	↓	↓		↓																					
↓ -0.9-1.0																									
SS-18_0-0.1						X																			
↓ -0.2-0.3						[redacted]																			
QA20180919-JC01						[redacted]																			
QC "						Please forward to Envirolab																			
SS-18_0.9-1.0																									
SS-19_0-0.1						X		X							X										
↓ -0.2-0.3																									
↓ -0.6-0.7																									
SS-20_0-0.1																									
↓ -0.2-0.3						X					X													X	
↓ -0.4-1.0																									
SS-21_0-0.1						X					X													X	
" -0.2-0.3																									
SS-22_0-0.1																									
-0.2-0.3						X																			
-1.0-1.1	↓	↓		↓																					

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: [redacted] DATE: 19.8.18	CONSIGNMENT NOTE NO.	NAME: CLONG DATE: 19/9	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF:	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: MARK DATE: 22/9	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF: EUROFINS 11AM	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

#619070

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: ~~[redacted]~~ 54930	LABORATORY BATCH NO.:
PROJECT NAME: ~~[redacted]~~ Peat Island	SAMPLERS: JC
DATE NEEDED BY: Standard TAT	QC LEVEL: NEPM (2013)
PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688	
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) ~~Gblack~~ sburrows@jbsg.com.au; (3) ~~[redacted]~~@jbsg.com.au	cbennett@jbsg.com.au.
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:	

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	PAH	TPH/BTEX	BTEX	PFASs	ASBESTOS	SELENIUM	Phenols	Explosives	OCP/PCB	PHCEC	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
SS-22_1.9-2.0	Soil	19.8.18		Jar + Bag + Ice															
SS-23_0-0.1						X		X											
↓ 0.2-0.3																			
↓ 0.9-1.0																			
SS-24_0-0.1																			
↓ 0.2-0.3						X													
↓ 0.9-1.0																			
SS-25_0-0.1						X	X	X			X			X					X	
↓ 0.2-0.3																			
↓ 1.0-1.1																			
~~QC~~ 09/19-SL02						Please Forward to Envirolab													
QA //																			
SS-26_0-0.1				Bag (No jar)															
// 0.2-0.3				J + B + ice		X													
SS-27_0-0.1						~~X~~	~~X~~												
0.2-0.3						X	X	X			X			X					X	
0.9-1.0						X													X
SS-28_0-0.1																			
0.2-0.3						~~X~~				~~X~~									~~X~~

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: [signature] DATE: 19.8.18	CONSIGNMENT NOTE NO.	NAME: VLONG DATE: 19/9	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF:	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

~~ES1610~~ Enviolab

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54782	LABORATORY BATCH NO.:
PROJECT NAME: Basin B TP	SAMPLERS: JC
DATE NEEDED BY:	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) Gblack@jbsg.com.au; (3) JC-consult@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	PAH	TPH/BTEX	BTEX	PFASs	ASBESTOS	SELENIUM	Phenols	Explosives	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
QC20180919-JC01	Soil	19-8-18		Jar + Bag + Ice		X											
QC " -JC02	↓	↓		↓													
QC20180919-RC01	↓	↓		↓		X		X									

SENT TO ENVIROLAB

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: VLONG DATE: 19/9	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF:	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

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NATA # 1261 Site # 20794

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Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Scott Burrows
Project name: PEAT ISLAND
Project ID: 54930
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Sep 19, 2018 5:29 PM
Eurofins | mgt reference: **619070**

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 | mgt Sample Receipt : 10.6 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.

☑ Split sample sent to requested external lab.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

SS-19_0-0.1 & S-19_0.2-0.3 RECEIVED BROKEN, SALVAGED WHAT SAMPLE IS LEFT IN JAR

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Scott Burrows - SBurrows@jbsg.com.au.

Note: A copy of these results will also be delivered to the general JBS & G Australia (NSW) P/L email address.

eurofins | mgt

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Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54930

Order No.:
Report #: 619070
Phone: 02 8245 0300
Fax:

Received: Sep 19, 2018 5:29 PM
Due: Sep 26, 2018
Priority: 5 Day
Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Metals IWRG 621 : Metals M12	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X								
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
External Laboratory														
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**									
1	SS-17_0-0.1	Sep 19, 2018		Soil	M18-Se30064						X		X	
2	SS-18_0-0.1	Sep 19, 2018		Soil	M18-Se30065						X		X	
3	SS-19_0-0.1	Sep 19, 2018		Soil	M18-Se30066				X	X	X	X	X	X
4	SS-20_0.2-0.3	Sep 19, 2018		Soil	M18-Se30067	X					X		X	
5	SS-21_0-0.1	Sep 19, 2018		Soil	M18-Se30068	X					X		X	
6	SS-22_0.2-0.3	Sep 19, 2018		Soil	M18-Se30069						X		X	
7	SS-23_0-0.1	Sep 19, 2018		Soil	M18-Se30070						X	X	X	X
8	SS-24_0.2-0.3	Sep 19, 2018		Soil	M18-Se30071						X		X	
9	SS-25_0-0.1	Sep 19, 2018		Soil	M18-Se30072	X		X	X	X	X	X	X	X

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Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Metals IWRG 621 : Metals M12	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X								
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
10	SS-26_0.2-0.3	Sep 19, 2018		Soil	M18-Se30073						X		X	
11	SS-27_0.2-0.3	Sep 19, 2018		Soil	M18-Se30074	X		X			X	X	X	X
12	SS-27_0.9-1.0	Sep 19, 2018		Soil	M18-Se30075	X					X		X	
13	SS-17_0.2-0.3	Sep 19, 2018		Soil	M18-Se30076		X							
14	SS-17_0.9-1.0	Sep 19, 2018		Soil	M18-Se30077		X							
15	SS-18_0.2-0.3	Sep 19, 2018		Soil	M18-Se30078		X							
16	QA20180919-JC01	Sep 19, 2018		Soil	M18-Se30079		X							
17	SS-18_0.9-1.0	Sep 19, 2018		Soil	M18-Se30080		X							
18	SS-19_0.2-0.3	Sep 19, 2018		Soil	M18-Se30081		X							
19	SS-19_0.6-0.7	Sep 19, 2018		Soil	M18-Se30082		X							
20	SS-20_0-0.1	Sep 19, 2018		Soil	M18-Se30083		X							

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Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Metals IWRG 621 : Metals M12	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X								
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
21	SS-20_0.9-1.0	Sep 19, 2018		Soil	M18-Se30084		X							
22	SS-21_0.2-0.3	Sep 19, 2018		Soil	M18-Se30085		X							
23	SS-22_0-0.1	Sep 19, 2018		Soil	M18-Se30086		X							
24	SS-22_1.0-1.1	Sep 19, 2018		Soil	M18-Se30087		X							
25	SS-22_1.9-2.0	Sep 19, 2018		Soil	M18-Se30088		X							
26	SS-23_0.2-0.3	Sep 19, 2018		Soil	M18-Se30089		X							
27	SS-23_0.9-1.0	Sep 19, 2018		Soil	M18-Se30090		X							
28	SS-24_0-0.1	Sep 19, 2018		Soil	M18-Se30091		X							
29	SS-24_0.9-1.0	Sep 19, 2018		Soil	M18-Se30092		X							
30	SS-25_0.2-0.3	Sep 19, 2018		Soil	M18-Se30093		X							
31	SS-25_1.0-1.1	Sep 19, 2018		Soil	M18-Se30094		X							
32	QA20180919-	Sep 19, 2018		Soil	M18-Se30095		X							

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Project Name: PEAT ISLAND
Project ID: 54930

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Fax:

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Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Metals IWRG 621 : Metals M12	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X								
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
	JC02													
33	SS-26_0-0.1	Sep 19, 2018		Soil	M18-Se30096		X							
34	SS-27_0-0.1	Sep 19, 2018		Soil	M18-Se30097		X							
35	SS-28_0-0.1	Sep 19, 2018		Soil	M18-Se30098		X							
36	SS-28_0.2-0.3	Sep 19, 2018		Soil	M18-Se30099		X							
Test Counts						5	24	2	2	2	12	4	12	4

Certificate of Analysis

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.

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Scott Burrows
Report	619070-AID
Project Name	PEAT ISLAND
Project ID	54930
Received Date	Sep 19, 2018
Date Reported	Sep 26, 2018

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 AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w).The examination of large sample sizes(500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction.The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA(friable asbestos) and AF(asbestos fines) then applies where they are able to be quantified by gravimetric procedures.This quantitative screening is not generally applicable to FF(free fibres) and results of Trace Analysis are referred. *NOTE: NATA News March 2014, p.7, states in relation to AS4964: "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". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk).* *This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the 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, June 2011.*

Project Name PEAT ISLAND
Project ID 54930
Date Sampled Sep 19, 2018
Report 619070-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
SS-20_0.2-0.3	18-Se30067	Sep 19, 2018	Approximate Sample 706g Sample consisted of: Tan fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
SS-21_0-0.1	18-Se30068	Sep 19, 2018	Approximate Sample 495g Sample consisted of: Tan fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
SS-25_0-0.1	18-Se30072	Sep 19, 2018	Approximate Sample 522g Sample consisted of: Brown fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
SS-27_0.2-0.3	18-Se30074	Sep 19, 2018	Approximate Sample 662g Sample consisted of: Beige fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
SS-27_0.9-1.0	18-Se30075	Sep 19, 2018	Approximate Sample 687g Sample consisted of: Grey fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres 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 (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Sep 22, 2018	Indefinite

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Received: Sep 19, 2018 5:29 PM
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Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail	Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Metals IWRG 621 : Metals M12	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271		X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217	X								
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	SS-17_0-0.1	Sep 19, 2018		Soil	M18-Se30064						X		X	
2	SS-18_0-0.1	Sep 19, 2018		Soil	M18-Se30065						X		X	
3	SS-19_0-0.1	Sep 19, 2018		Soil	M18-Se30066				X	X	X	X	X	X
4	SS-20_0.2-0.3	Sep 19, 2018		Soil	M18-Se30067	X					X		X	
5	SS-21_0-0.1	Sep 19, 2018		Soil	M18-Se30068	X					X		X	
6	SS-22_0.2-0.3	Sep 19, 2018		Soil	M18-Se30069						X		X	
7	SS-23_0-0.1	Sep 19, 2018		Soil	M18-Se30070						X	X	X	X
8	SS-24_0.2-0.3	Sep 19, 2018		Soil	M18-Se30071						X		X	
9	SS-25_0-0.1	Sep 19, 2018		Soil	M18-Se30072	X		X	X	X	X	X	X	X

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Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Metals IWRG 621 : Metals M12	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X								
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
10	SS-26_0.2-0.3	Sep 19, 2018		Soil	M18-Se30073						X		X	
11	SS-27_0.2-0.3	Sep 19, 2018		Soil	M18-Se30074	X		X			X	X	X	X
12	SS-27_0.9-1.0	Sep 19, 2018		Soil	M18-Se30075	X					X		X	
13	SS-17_0.2-0.3	Sep 19, 2018		Soil	M18-Se30076		X							
14	SS-17_0.9-1.0	Sep 19, 2018		Soil	M18-Se30077		X							
15	SS-18_0.2-0.3	Sep 19, 2018		Soil	M18-Se30078		X							
16	QA20180919-JC01	Sep 19, 2018		Soil	M18-Se30079		X							
17	SS-18_0.9-1.0	Sep 19, 2018		Soil	M18-Se30080		X							
18	SS-19_0.2-0.3	Sep 19, 2018		Soil	M18-Se30081		X							
19	SS-19_0.6-0.7	Sep 19, 2018		Soil	M18-Se30082		X							
20	SS-20_0-0.1	Sep 19, 2018		Soil	M18-Se30083		X							

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NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54930

Order No.:
Report #: 619070
Phone: 02 8245 0300
Fax:

Received: Sep 19, 2018 5:29 PM
Due: Sep 26, 2018
Priority: 5 Day
Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Metals IWRG 621 : Metals M12	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X								
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
21	SS-20_0.9-1.0	Sep 19, 2018		Soil	M18-Se30084		X							
22	SS-21_0.2-0.3	Sep 19, 2018		Soil	M18-Se30085		X							
23	SS-22_0-0.1	Sep 19, 2018		Soil	M18-Se30086		X							
24	SS-22_1.0-1.1	Sep 19, 2018		Soil	M18-Se30087		X							
25	SS-22_1.9-2.0	Sep 19, 2018		Soil	M18-Se30088		X							
26	SS-23_0.2-0.3	Sep 19, 2018		Soil	M18-Se30089		X							
27	SS-23_0.9-1.0	Sep 19, 2018		Soil	M18-Se30090		X							
28	SS-24_0-0.1	Sep 19, 2018		Soil	M18-Se30091		X							
29	SS-24_0.9-1.0	Sep 19, 2018		Soil	M18-Se30092		X							
30	SS-25_0.2-0.3	Sep 19, 2018		Soil	M18-Se30093		X							
31	SS-25_1.0-1.1	Sep 19, 2018		Soil	M18-Se30094		X							
32	QA20180919-	Sep 19, 2018		Soil	M18-Se30095		X							

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NSW 2000

Project Name: PEAT ISLAND
Project ID: 54930

Order No.:
Report #: 619070
Phone: 02 8245 0300
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Received: Sep 19, 2018 5:29 PM
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Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Metals IWRG 621 : Metals M12	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X								
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
	JC02													
33	SS-26_0-0.1	Sep 19, 2018		Soil	M18-Se30096		X							
34	SS-27_0-0.1	Sep 19, 2018		Soil	M18-Se30097		X							
35	SS-28_0-0.1	Sep 19, 2018		Soil	M18-Se30098		X							
36	SS-28_0.2-0.3	Sep 19, 2018		Soil	M18-Se30099		X							
Test Counts						5	24	2	2	2	12	4	12	4

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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substatntial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Se30068: Sample received was less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Glenn Jackson
National Operations 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.

Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
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: **Scott Burrows**

Report **619070-S**
Project name PEAT ISLAND
Project ID 54930
Received Date Sep 19, 2018

Client Sample ID			**SS-17_0-0.1**	**SS-18_0-0.1**	**SS-19_0-0.1**	**SS-20_0.2-0.3**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-Se30064**	**M18-Se30065**	**M18-Se30066**	**M18-Se30067**
Date Sampled			**Sep 19, 2018**	**Sep 19, 2018**	**Sep 19, 2018**	**Sep 19, 2018**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	-
TRH C10-C14	20	mg/kg	-	-	< 20	-
TRH C15-C28	50	mg/kg	-	-	< 50	-
TRH C29-C36	50	mg/kg	-	-	< 50	-
TRH C10-36 (Total)	50	mg/kg	-	-	< 50	-
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	91	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	-
TRH C6-C10	20	mg/kg	-	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	-
TRH >C10-C16	50	mg/kg	-	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	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	-
Organochlorine Pesticides						
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			SS-17_0-0.1	SS-18_0-0.1	SS-19_0-0.1	SS-20_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Se30064	M18-Se30065	M18-Se30066	M18-Se30067
Date Sampled			Sep 19, 2018	Sep 19, 2018	Sep 19, 2018	Sep 19, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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	%	-	-	87	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	57	-
Organophosphorus Pesticides						
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			SS-17_0-0.1	SS-18_0-0.1	SS-19_0-0.1	SS-20_0.2-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-Se30064**	**M18-Se30065**	**M18-Se30066**	**M18-Se30067**
Date Sampled			**Sep 19, 2018**	**Sep 19, 2018**	**Sep 19, 2018**	**Sep 19, 2018**
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Trichloronate	0.2	mg/kg	-	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	-	-	104	-
Heavy Metals						
Arsenic	2	mg/kg	2.2	3.5	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	82	17	7.3	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	8.6	10	20	5.7
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	9.9	< 5	< 5	< 5
% Moisture	1	%	4.3	11	23	5.6

Client Sample ID			SS-21_0-0.1	SS-22_0.2-0.3	SS-23_0-0.1	SS-24_0.2-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-Se30068**	**M18-Se30069**	**M18-Se30070**	**M18-Se30071**
Date Sampled			**Sep 19, 2018**	**Sep 19, 2018**	**Sep 19, 2018**	**Sep 19, 2018**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	-
TRH C10-C14	20	mg/kg	-	-	< 20	-
TRH C15-C28	50	mg/kg	-	-	< 50	-
TRH C29-C36	50	mg/kg	-	-	< 50	-
TRH C10-36 (Total)	50	mg/kg	-	-	< 50	-
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	99	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	-
TRH C6-C10	20	mg/kg	-	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	-
TRH >C10-C16	50	mg/kg	-	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	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	-

Client Sample ID			SS-21_0-0.1	SS-22_0.2-0.3	SS-23_0-0.1	SS-24_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Se30068	M18-Se30069	M18-Se30070	M18-Se30071
Date Sampled			Sep 19, 2018	Sep 19, 2018	Sep 19, 2018	Sep 19, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	5.8	3.6	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	21	20	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	13	12	6.7	< 5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	< 5	< 5	< 5	< 5
% Moisture	1	%	10	16	4.7	11

Client Sample ID			SS-25_0-0.1	SS-26_0.2-0.3	SS-27_0.2-0.3	SS-27_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Se30072	M18-Se30073	M18-Se30074	M18-Se30075
Date Sampled			Sep 19, 2018	Sep 19, 2018	Sep 19, 2018	Sep 19, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	< 50	-	< 50	-
BTEX						
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	%	92	-	93	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	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	-
Polycyclic Aromatic Hydrocarbons						
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	-

Client Sample ID			SS-25_0-0.1	SS-26_0.2-0.3	SS-27_0.2-0.3	SS-27_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Se30072	M18-Se30073	M18-Se30074	M18-Se30075
Date Sampled			Sep 19, 2018	Sep 19, 2018	Sep 19, 2018	Sep 19, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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[N07]	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	%	82	-	88	-
p-Terphenyl-d14 (surr.)	1	%	71	-	84	-
Organochlorine Pesticides						
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	%	126	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	134	-	-	-

Client Sample ID			SS-25_0-0.1	SS-26_0.2-0.3	SS-27_0.2-0.3	SS-27_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Se30072	M18-Se30073	M18-Se30074	M18-Se30075
Date Sampled			Sep 19, 2018	Sep 19, 2018	Sep 19, 2018	Sep 19, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
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	%	117	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	2.7	< 2	2.2	6.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	6.0	8.5	8.2	9.6
Copper	5	mg/kg	< 5	< 5	< 5	11
Lead	5	mg/kg	10	8.4	16	63
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	32	8.0	21	150
% Moisture	1	%	25	4.1	20	22

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 (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 25, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C36			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 25, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 25, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Melbourne	Sep 25, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Sep 25, 2018	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Sep 25, 2018	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Melbourne	Sep 25, 2018	14 Day
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Metals IWRG 621 : Metals M12	Melbourne	Sep 25, 2018	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Sep 22, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
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NSW 2000

Project Name: PEAT ISLAND
Project ID: 54930

Order No.:
Report #: 619070
Phone: 02 8245 0300
Fax:

Received: Sep 19, 2018 5:29 PM
Due: Sep 26, 2018
Priority: 5 Day
Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Metals IWRG 621 : Metals M12	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X								
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
External Laboratory														
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**									
1	SS-17_0-0.1	Sep 19, 2018		Soil	M18-Se30064						X		X	
2	SS-18_0-0.1	Sep 19, 2018		Soil	M18-Se30065						X		X	
3	SS-19_0-0.1	Sep 19, 2018		Soil	M18-Se30066				X	X	X	X	X	X
4	SS-20_0.2-0.3	Sep 19, 2018		Soil	M18-Se30067	X					X		X	
5	SS-21_0-0.1	Sep 19, 2018		Soil	M18-Se30068	X					X		X	
6	SS-22_0.2-0.3	Sep 19, 2018		Soil	M18-Se30069						X		X	
7	SS-23_0-0.1	Sep 19, 2018		Soil	M18-Se30070						X	X	X	X
8	SS-24_0.2-0.3	Sep 19, 2018		Soil	M18-Se30071						X		X	
9	SS-25_0-0.1	Sep 19, 2018		Soil	M18-Se30072	X		X	X	X	X	X	X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X								
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
10	SS-26_0.2-0.3	Sep 19, 2018		Soil	M18-Se30073						X		X	
11	SS-27_0.2-0.3	Sep 19, 2018		Soil	M18-Se30074	X		X			X	X	X	X
12	SS-27_0.9-1.0	Sep 19, 2018		Soil	M18-Se30075	X					X		X	
13	SS-17_0.2-0.3	Sep 19, 2018		Soil	M18-Se30076		X							
14	SS-17_0.9-1.0	Sep 19, 2018		Soil	M18-Se30077		X							
15	SS-18_0.2-0.3	Sep 19, 2018		Soil	M18-Se30078		X							
16	QA20180919-JC01	Sep 19, 2018		Soil	M18-Se30079		X							
17	SS-18_0.9-1.0	Sep 19, 2018		Soil	M18-Se30080		X							
18	SS-19_0.2-0.3	Sep 19, 2018		Soil	M18-Se30081		X							
19	SS-19_0.6-0.7	Sep 19, 2018		Soil	M18-Se30082		X							
20	SS-20_0-0.1	Sep 19, 2018		Soil	M18-Se30083		X							

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Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Metals IWRG 621 : Metals M12	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X								
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
21	SS-20_0.9-1.0	Sep 19, 2018		Soil	M18-Se30084		X							
22	SS-21_0.2-0.3	Sep 19, 2018		Soil	M18-Se30085		X							
23	SS-22_0-0.1	Sep 19, 2018		Soil	M18-Se30086		X							
24	SS-22_1.0-1.1	Sep 19, 2018		Soil	M18-Se30087		X							
25	SS-22_1.9-2.0	Sep 19, 2018		Soil	M18-Se30088		X							
26	SS-23_0.2-0.3	Sep 19, 2018		Soil	M18-Se30089		X							
27	SS-23_0.9-1.0	Sep 19, 2018		Soil	M18-Se30090		X							
28	SS-24_0-0.1	Sep 19, 2018		Soil	M18-Se30091		X							
29	SS-24_0.9-1.0	Sep 19, 2018		Soil	M18-Se30092		X							
30	SS-25_0.2-0.3	Sep 19, 2018		Soil	M18-Se30093		X							
31	SS-25_1.0-1.1	Sep 19, 2018		Soil	M18-Se30094		X							
32	QA20180919-	Sep 19, 2018		Soil	M18-Se30095		X							

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Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X								
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
	JC02													
33	SS-26_0-0.1	Sep 19, 2018		Soil	M18-Se30096		X							
34	SS-27_0-0.1	Sep 19, 2018		Soil	M18-Se30097		X							
35	SS-28_0-0.1	Sep 19, 2018		Soil	M18-Se30098		X							
36	SS-28_0.2-0.3	Sep 19, 2018		Soil	M18-Se30099		X							
Test Counts						5	24	2	2	2	12	4	12	4

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil 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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
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	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

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	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 0.2			0.2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	86			70-130	Pass	
TRH C10-C14	%	81			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	82			70-130	Pass	
Toluene	%	78			70-130	Pass	
Ethylbenzene	%	88			70-130	Pass	
m&p-Xylenes	%	87			70-130	Pass	
Xylenes - Total	%	88			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	77			70-130	Pass	
TRH C6-C10	%	84			70-130	Pass	
TRH >C10-C16	%	84			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	75			70-130	Pass	
Acenaphthylene	%	84			70-130	Pass	
Anthracene	%	87			70-130	Pass	
Benz(a)anthracene	%	86			70-130	Pass	
Benzo(a)pyrene	%	88			70-130	Pass	
Benzo(b&j)fluoranthene	%	83			70-130	Pass	
Benzo(g.h.i)perylene	%	102			70-130	Pass	
Benzo(k)fluoranthene	%	94			70-130	Pass	
Chrysene	%	94			70-130	Pass	
Dibenz(a.h)anthracene	%	95			70-130	Pass	
Fluoranthene	%	93			70-130	Pass	
Fluorene	%	90			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	97			70-130	Pass	
Naphthalene	%	83			70-130	Pass	
Phenanthrene	%	91			70-130	Pass	
Pyrene	%	96			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	116			70-130	Pass	
4.4'-DDE	%	130			70-130	Pass	
4.4'-DDT	%	86			70-130	Pass	
a-BHC	%	125			70-130	Pass	
Aldrin	%	128			70-130	Pass	
b-BHC	%	125			70-130	Pass	
d-BHC	%	103			70-130	Pass	
Dieldrin	%	129			70-130	Pass	
Endosulfan I	%	127			70-130	Pass	
Endosulfan II	%	126			70-130	Pass	
Endosulfan sulphate	%	120			70-130	Pass	
Endrin	%	127			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	%	129			70-130	Pass	
Endrin ketone	%	130			70-130	Pass	
g-BHC (Lindane)	%	122			70-130	Pass	
Heptachlor	%	118			70-130	Pass	
Heptachlor epoxide	%	123			70-130	Pass	
Hexachlorobenzene	%	123			70-130	Pass	
Methoxychlor	%	95			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	85			70-130	Pass	
Dimethoate	%	74			70-130	Pass	
Ethion	%	72			70-130	Pass	
Fenitrothion	%	78			70-130	Pass	
Methyl parathion	%	83			70-130	Pass	
Mevinphos	%	73			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	81			80-120	Pass	
Cadmium	%	82			80-120	Pass	
Chromium	%	89			80-120	Pass	
Copper	%	85			80-120	Pass	
Lead	%	89			80-120	Pass	
Mercury	%	88			75-125	Pass	
Molybdenum	%	84			80-120	Pass	
Nickel	%	87			80-120	Pass	
Selenium	%	103			80-120	Pass	
Silver	%	83			80-120	Pass	
Tin	%	81			80-120	Pass	
Zinc	%	85			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M18-Se27562	NCP	%	80			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M18-Se27562	NCP	%	73			70-130	Pass	
Toluene	M18-Se27562	NCP	%	76			70-130	Pass	
Ethylbenzene	M18-Se27562	NCP	%	92			70-130	Pass	
m&p-Xylenes	M18-Se27562	NCP	%	95			70-130	Pass	
o-Xylene	M18-Se27562	NCP	%	99			70-130	Pass	
Xylenes - Total	M18-Se27562	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M18-Se27562	NCP	%	91			70-130	Pass	
TRH C6-C10	M18-Se27562	NCP	%	78			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	P18-Se26851	NCP	%	106			70-130	Pass	
4.4'-DDE	P18-Se26851	NCP	%	107			70-130	Pass	
4.4'-DDT	P18-Se26851	NCP	%	97			70-130	Pass	
a-BHC	P18-Se26851	NCP	%	110			70-130	Pass	
Aldrin	P18-Se26851	NCP	%	112			70-130	Pass	
b-BHC	P18-Se26851	NCP	%	106			70-130	Pass	
d-BHC	P18-Se26851	NCP	%	105			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dieldrin	P18-Se26851	NCP	%	101			70-130	Pass	
Endosulfan I	P18-Se26851	NCP	%	95			70-130	Pass	
Endosulfan II	P18-Se26851	NCP	%	95			70-130	Pass	
Endosulfan sulphate	P18-Se26851	NCP	%	100			70-130	Pass	
Endrin	P18-Se26851	NCP	%	107			70-130	Pass	
Endrin aldehyde	P18-Se26851	NCP	%	107			70-130	Pass	
Endrin ketone	P18-Se26851	NCP	%	98			70-130	Pass	
g-BHC (Lindane)	P18-Se26851	NCP	%	106			70-130	Pass	
Heptachlor	P18-Se26851	NCP	%	109			70-130	Pass	
Heptachlor epoxide	P18-Se26851	NCP	%	102			70-130	Pass	
Hexachlorobenzene	P18-Se26851	NCP	%	110			70-130	Pass	
Methoxychlor	P18-Se26851	NCP	%	93			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M18-Se30070	CP	%	74			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M18-Se30070	CP	%	74			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M18-Se27627	NCP	%	76			70-130	Pass	
Acenaphthylene	M18-Se27627	NCP	%	84			70-130	Pass	
Anthracene	M18-Se27627	NCP	%	95			70-130	Pass	
Benz(a)anthracene	M18-Se27627	NCP	%	87			70-130	Pass	
Benzo(a)pyrene	M18-Se27627	NCP	%	94			70-130	Pass	
Benzo(b&j)fluoranthene	M18-Se27627	NCP	%	92			70-130	Pass	
Benzo(g.h.i)perylene	M18-Se27627	NCP	%	106			70-130	Pass	
Benzo(k)fluoranthene	M18-Se27627	NCP	%	96			70-130	Pass	
Chrysene	M18-Se27627	NCP	%	93			70-130	Pass	
Dibenz(a.h)anthracene	M18-Se27627	NCP	%	101			70-130	Pass	
Fluoranthene	M18-Se27627	NCP	%	109			70-130	Pass	
Fluorene	M18-Se27627	NCP	%	94			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M18-Se27627	NCP	%	108			70-130	Pass	
Naphthalene	M18-Se27627	NCP	%	83			70-130	Pass	
Phenanthrene	M18-Se27627	NCP	%	99			70-130	Pass	
Pyrene	M18-Se27627	NCP	%	113			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M18-Se30072	CP	%	89			75-125	Pass	
Cadmium	M18-Se30072	CP	%	89			75-125	Pass	
Chromium	M18-Se30072	CP	%	95			75-125	Pass	
Copper	M18-Se30072	CP	%	94			75-125	Pass	
Lead	M18-Se30072	CP	%	92			75-125	Pass	
Mercury	M18-Se30072	CP	%	92			70-130	Pass	
Molybdenum	M18-Se30072	CP	%	88			75-125	Pass	
Nickel	M18-Se30072	CP	%	90			75-125	Pass	
Selenium	M18-Se30072	CP	%	85			75-125	Pass	
Silver	M18-Se30072	CP	%	84			75-125	Pass	
Tin	M18-Se30072	CP	%	86			75-125	Pass	
Zinc	M18-Se30072	CP	%	84			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M18-Se27894	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M18-Se26552	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M18-Se26552	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M18-Se26552	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M18-Se27894	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M18-Se27894	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M18-Se27894	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M18-Se27894	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M18-Se27894	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	M18-Se27894	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M18-Se27894	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M18-Se27894	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M18-Se26552	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M18-Se30351	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M18-Se30351	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M18-Se30351	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	M18-Se31253	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Dimethoate	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	M18-Se31253	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	M18-Se31253	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	M18-Se31253	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M18-Se30069	CP	%	16	16	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-Se30071	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	M18-Se30071	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M18-Se30071	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	M18-Se30071	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	M18-Se30071	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	M18-Se30071	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M18-Se30071	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M18-Se30071	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Selenium	M18-Se30071	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M18-Se30071	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tin	M18-Se30071	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M18-Se30071	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Fluorene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M18-Se31253	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-Se30072	CP	mg/kg	2.7	2.6	6.0	30%	Pass	
Cadmium	M18-Se30072	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M18-Se30072	CP	mg/kg	6.0	6.0	1.0	30%	Pass	
Copper	M18-Se30072	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	M18-Se30072	CP	mg/kg	10	9.9	4.0	30%	Pass	
Mercury	M18-Se30072	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M18-Se30072	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M18-Se30072	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Selenium	M18-Se30072	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	M18-Se30072	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tin	M18-Se30072	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M18-Se30072	CP	mg/kg	32	32	1.0	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

Authorised By

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)

Glenn Jackson

National Operations 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.

018115

EUROFINS.

1 of 1

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54993
PROJECT NAME: PEAT ISLAND.
DATE NEEDED BY: ~~standard TAT~~
LABORATORY BATCH NO.:
SAMPLERS: EH RG RL
QC LEVEL: NEPM (2013)
PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBENNET@jbsg.com.au; (3) SBURROWS@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy Metals	TRH/BTEX	PAHs	Asbestos	OCP/PCB	pH, CEC, %Clay	BTEX	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
GW-01_0-0.1	SOIL	19.9.18		JAR + BAG + ICE		X	X								
GW-01_0.4-0.5															
GW-01_0.9-1.0															
GW-02_0-0.1						X	X								
GW-02=0.4-0.5															
GW-03_0-0.1															
GW-03_1.9-2.0															
GW-03_2.9-3.0				JAR + ICE											
GW-04_0-0.1				JAR + BAG + ICE		X	X								
GW-04_0.4-0.5				JAR + ICE		X	X								
GW-05_0-0.1				JAR + BAG + ICE											
GW-05_0.4-0.5						X	X								
QA20180919-RG01						X	X								
QC20180919-RG01						PLEASE FORWARD TO ENVIROLAB.									
GW03_0.4-0.5															
GW03_0.9-1.0															
GW03_3.4-3.5				JAR + ICE		X	X	X							
TS	Water			Vials								X			
TB												X			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: CB DATE: 19.9.18 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: DATE: 19/9 OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: 21/9 8.32a OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

619071

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Claudia Bennett
Project name: PEAT ISLAND
Project ID: 54993
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Sep 19, 2018 5:29 PM
Eurofins | mgt reference: **619071**

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 | mgt Sample Receipt : 11.1 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:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Claudia Bennett - CBennett@jbsg.com.au.

Note: A copy of these results will also be delivered to the general JBS & G Australia (NSW) P/L email address.

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

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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

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54993

Order No.:
Report #: 619071
Phone: 02 8245 0300
Fax:

Received: Sep 19, 2018 5:29 PM
Due: Sep 26, 2018
Priority: 5 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	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	GW01_0.0-0.1	Sep 19, 2018		Soil	M18-Se30046			X	X	X	X
2	GW02_0.0-0.1	Sep 19, 2018		Soil	M18-Se30047			X	X	X	X
3	GW04_0.0-0.1	Sep 19, 2018		Soil	M18-Se30048			X	X	X	X
4	GW05_0.4-0.5	Sep 19, 2018		Soil	M18-Se30049			X	X	X	X
5	QA20180919-RG01	Sep 19, 2018		Soil	M18-Se30050			X	X	X	X
6	GW03_3.4-3.4	Sep 19, 2018		Soil	M18-Se30051		X	X	X	X	X
7	TS	Sep 19, 2018		Water	M18-Se30052				X		
8	TB	Sep 19, 2018		Water	M18-Se30053				X		
9	GW01_0.4-0.5	Sep 19, 2018		Soil	M18-Se30054	X					

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

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Received: Sep 19, 2018 5:29 PM
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Contact Name: Claudia Bennett

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Sample Detail						HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
10	GW01_0.9-1.0	Sep 19, 2018		Soil	M18-Se30055	X					
11	GW02_0.4-0.5	Sep 19, 2018		Soil	M18-Se30056	X					
12	GW03_0.0-0.1	Sep 19, 2018		Soil	M18-Se30057	X					
13	GW03_1.9-2.0	Sep 19, 2018		Soil	M18-Se30058	X					
14	GW03_2.9-3.0	Sep 19, 2018		Soil	M18-Se30059	X					
15	GW04_0.4-0.5	Sep 19, 2018		Soil	M18-Se30060	X					
16	GW05_0.0-0.1	Sep 19, 2018		Soil	M18-Se30061	X					
17	GW03_0.4-0.5	Sep 19, 2018		Soil	M18-Se30062	X					
18	GW03_0.9-1.0	Sep 19, 2018		Soil	M18-Se30063	X					
Test Counts						10	1	6	8	6	6

eurofins | mgt

30 years Testing For Life 1987–2017
Celebrating 30 years Testing and Protecting Human Health

Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
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: **Claudia Bennett**

Report **619071-S**
Project name PEAT ISLAND
Project ID 54993
Received Date Sep 19, 2018

Client Sample ID			**GW01_0.0-0.1**	**GW02_0.0-0.1**	**GW04_0.0-0.1**	**GW05_0.4-0.5**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-Se30046**	**M18-Se30047**	**M18-Se30048**	**M18-Se30049**
Date Sampled			**Sep 19, 2018**	**Sep 19, 2018**	**Sep 19, 2018**	**Sep 19, 2018**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	87	59	92	51
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	2.4	5.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	16	7.9	7.9	6.4
Copper	5	mg/kg	18	< 5	19	22
Lead	5	mg/kg	7.6	9.9	130	68
Mercury	0.1	mg/kg	< 0.1	< 0.1	0.1	0.1
Nickel	5	mg/kg	27	< 5	< 5	< 5
Zinc	5	mg/kg	19	6.3	170	88
% Moisture	1	%	7.0	7.9	12	9.4

Client Sample ID			QA20180919-RG01	GW03_3.4-3.4
Sample Matrix			**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-Se30050**	**M18-Se30051**
Date Sampled			**Sep 19, 2018**	**Sep 19, 2018**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
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	110	< 50
TRH C10-36 (Total)	50	mg/kg	110	< 50
BTEX				
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	%	95	96
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	110	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	110	< 100
Polycyclic Aromatic Hydrocarbons				
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[N07]	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	%	-	93
p-Terphenyl-d14 (surr.)	1	%	-	128

Client Sample ID			QA20180919-RG01	GW03_3.4-3.4
Sample Matrix			**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-Se30050**	**M18-Se30051**
Date Sampled			**Sep 19, 2018**	**Sep 19, 2018**
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	2	mg/kg	2.4	6.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	9.5	40
Copper	5	mg/kg	31	< 5
Lead	5	mg/kg	90	19
Mercury	0.1	mg/kg	0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5
Zinc	5	mg/kg	170	11
% Moisture	1	%	12	11

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 (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 24, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C36			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 24, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 24, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Melbourne	Sep 24, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Sep 24, 2018	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Melbourne	Sep 24, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Sep 22, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

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NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54993

Order No.:
Report #: 619071
Phone: 02 8245 0300
Fax:

Received: Sep 19, 2018 5:29 PM
Due: Sep 26, 2018
Priority: 5 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	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	GW01_0.0-0.1	Sep 19, 2018		Soil	M18-Se30046			X	X	X	X
2	GW02_0.0-0.1	Sep 19, 2018		Soil	M18-Se30047			X	X	X	X
3	GW04_0.0-0.1	Sep 19, 2018		Soil	M18-Se30048			X	X	X	X
4	GW05_0.4-0.5	Sep 19, 2018		Soil	M18-Se30049			X	X	X	X
5	QA20180919-RG01	Sep 19, 2018		Soil	M18-Se30050			X	X	X	X
6	GW03_3.4-3.4	Sep 19, 2018		Soil	M18-Se30051		X	X	X	X	X
7	TS	Sep 19, 2018		Water	M18-Se30052				X		
8	TB	Sep 19, 2018		Water	M18-Se30053				X		
9	GW01_0.4-0.5	Sep 19, 2018		Soil	M18-Se30054	X					

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Sample Detail						HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
10	GW01_0.9-1.0	Sep 19, 2018		Soil	M18-Se30055	X					
11	GW02_0.4-0.5	Sep 19, 2018		Soil	M18-Se30056	X					
12	GW03_0.0-0.1	Sep 19, 2018		Soil	M18-Se30057	X					
13	GW03_1.9-2.0	Sep 19, 2018		Soil	M18-Se30058	X					
14	GW03_2.9-3.0	Sep 19, 2018		Soil	M18-Se30059	X					
15	GW04_0.4-0.5	Sep 19, 2018		Soil	M18-Se30060	X					
16	GW05_0.0-0.1	Sep 19, 2018		Soil	M18-Se30061	X					
17	GW03_0.4-0.5	Sep 19, 2018		Soil	M18-Se30062	X					
18	GW03_0.9-1.0	Sep 19, 2018		Soil	M18-Se30063	X					
Test Counts						10	1	6	8	6	6

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil 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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
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	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
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	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	99			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14	%	91			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	94			70-130	Pass	
Toluene	%	92			70-130	Pass	
Ethylbenzene	%	94			70-130	Pass	
m&p-Xylenes	%	84			70-130	Pass	
Xylenes - Total	%	83			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	97			70-130	Pass	
TRH C6-C10	%	93			70-130	Pass	
TRH >C10-C16	%	105			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	108			70-130	Pass	
Acenaphthylene	%	101			70-130	Pass	
Anthracene	%	94			70-130	Pass	
Benz(a)anthracene	%	101			70-130	Pass	
Benzo(a)pyrene	%	105			70-130	Pass	
Benzo(b&j)fluoranthene	%	97			70-130	Pass	
Benzo(g.h.i)perylene	%	85			70-130	Pass	
Benzo(k)fluoranthene	%	124			70-130	Pass	
Chrysene	%	117			70-130	Pass	
Dibenz(a.h)anthracene	%	75			70-130	Pass	
Fluoranthene	%	119			70-130	Pass	
Fluorene	%	104			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	98			70-130	Pass	
Naphthalene	%	102			70-130	Pass	
Phenanthrene	%	93			70-130	Pass	
Pyrene	%	119			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	83			80-120	Pass	
Cadmium	%	85			80-120	Pass	
Chromium	%	91			80-120	Pass	
Copper	%	87			80-120	Pass	
Lead	%	90			80-120	Pass	
Mercury	%	99			75-125	Pass	
Nickel	%	90			80-120	Pass	
Zinc	%	87			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M18-Se29678	NCP	%	75			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M18-Se29678	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M18-Se30048	CP	%	90			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M18-Se30048	CP	%	74			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	M18-Se30048	CP	%	74			70-130	Pass	
Ethylbenzene	M18-Se30048	CP	%	83			70-130	Pass	
m&p-Xylenes	M18-Se30048	CP	%	71			70-130	Pass	
o-Xylene	M18-Se30048	CP	%	75			70-130	Pass	
Xylenes - Total	M18-Se30048	CP	%	72			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M18-Se30048	CP	%	85			70-130	Pass	
TRH C6-C10	M18-Se30048	CP	%	85			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M18-Se30050	CP	%	94			75-125	Pass	
Cadmium	M18-Se30050	CP	%	90			75-125	Pass	
Chromium	M18-Se30050	CP	%	90			75-125	Pass	
Copper	M18-Se30050	CP	%	77			75-125	Pass	
Lead	M18-Se30050	CP	%	73			75-125	Fail	Q08
Mercury	M18-Se30050	CP	%	87			70-130	Pass	
Nickel	M18-Se30050	CP	%	90			75-125	Pass	
Zinc	M18-Se30050	CP	%	95			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M18-Se27562	NCP	%	89			70-130	Pass	
Acenaphthylene	M18-Se27562	NCP	%	88			70-130	Pass	
Anthracene	M18-Se27562	NCP	%	85			70-130	Pass	
Benz(a)anthracene	M18-Se27562	NCP	%	83			70-130	Pass	
Benzo(a)pyrene	M18-Se27562	NCP	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	M18-Se27562	NCP	%	91			70-130	Pass	
Benzo(g.h.i)perylene	M18-Se27562	NCP	%	91			70-130	Pass	
Benzo(k)fluoranthene	M18-Se27562	NCP	%	103			70-130	Pass	
Chrysene	M18-Se27562	NCP	%	94			70-130	Pass	
Dibenz(a.h)anthracene	M18-Se27562	NCP	%	78			70-130	Pass	
Fluoranthene	M18-Se27562	NCP	%	97			70-130	Pass	
Fluorene	M18-Se27562	NCP	%	91			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M18-Se27562	NCP	%	103			70-130	Pass	
Naphthalene	M18-Se27562	NCP	%	89			70-130	Pass	
Phenanthrene	M18-Se27562	NCP	%	80			70-130	Pass	
Pyrene	M18-Se27562	NCP	%	100			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M18-Se29677	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M18-Se29677	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M18-Se29677	NCP	mg/kg	59	69	15	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M18-Se29677	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M18-Se29677	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M18-Se29677	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M18-Se30047	CP	mg/kg	< 20	< 20	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M18-Se30047	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M18-Se30047	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M18-Se30047	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M18-Se30047	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M18-Se30047	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	M18-Se30047	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M18-Se30047	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M18-Se30047	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M18-Se30047	CP	%	7.9	7.8	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-Se30049	CP	mg/kg	5.7	7.5	27	30%	Pass	
Cadmium	M18-Se30049	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M18-Se30049	CP	mg/kg	6.4	6.6	3.0	30%	Pass	
Copper	M18-Se30049	CP	mg/kg	22	21	6.0	30%	Pass	
Lead	M18-Se30049	CP	mg/kg	68	74	10	30%	Pass	
Mercury	M18-Se30049	CP	mg/kg	0.1	0.1	12	30%	Pass	
Nickel	M18-Se30049	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	M18-Se30049	CP	mg/kg	88	91	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-Se30050	CP	mg/kg	2.4	2.5	2.0	30%	Pass	
Cadmium	M18-Se30050	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M18-Se30050	CP	mg/kg	9.5	8.6	10	30%	Pass	
Copper	M18-Se30050	CP	mg/kg	31	28	11	30%	Pass	
Lead	M18-Se30050	CP	mg/kg	90	80	11	30%	Pass	
Mercury	M18-Se30050	CP	mg/kg	0.1	0.1	7.0	30%	Pass	
Nickel	M18-Se30050	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	M18-Se30050	CP	mg/kg	170	170	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M18-Se29678	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)

Glenn Jackson

National Operations 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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30 years Testing For Life 1987–2017
Celebrating 30 years Testing and Protecting Human Health

Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
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: **Claudia Bennett**

Report **619071-W**
Project name PEAT ISLAND
Project ID 54993
Received Date Sep 19, 2018

Client Sample ID			R20 **TS**	**TB**
Sample Matrix			**Water**	**Water**
Eurofins | mgt Sample No.			**M18-Se30052**	**M18-Se30053**
Date Sampled			**Sep 19, 2018**	**Sep 19, 2018**
Test/Reference	LOR	Unit		
BTEX				
Benzene	0.001	mg/L	98	< 0.001
Toluene	0.001	mg/L	100	< 0.001
Ethylbenzene	0.001	mg/L	100	< 0.001
m&p-Xylenes	0.002	mg/L	97	< 0.002
o-Xylene	0.001	mg/L	110	< 0.001
Xylenes - Total	0.003	mg/L	100	< 0.003
4-Bromofluorobenzene (surr.)	1	%	110	55

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 (regarding both quality and NATA accreditation).

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
BTEX	Melbourne	Sep 22, 2018	14 Day

- Method: TRH C6-C40 - LTM-ORG-2010

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2-5 Kingston Town Close
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Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54993

Order No.:
Report #: 619071
Phone: 02 8245 0300
Fax:

Received: Sep 19, 2018 5:29 PM
Due: Sep 26, 2018
Priority: 5 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	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	GW01_0.0-0.1	Sep 19, 2018		Soil	M18-Se30046			X	X	X	X
2	GW02_0.0-0.1	Sep 19, 2018		Soil	M18-Se30047			X	X	X	X
3	GW04_0.0-0.1	Sep 19, 2018		Soil	M18-Se30048			X	X	X	X
4	GW05_0.4-0.5	Sep 19, 2018		Soil	M18-Se30049			X	X	X	X
5	QA20180919-RG01	Sep 19, 2018		Soil	M18-Se30050			X	X	X	X
6	GW03_3.4-3.4	Sep 19, 2018		Soil	M18-Se30051		X	X	X	X	X
7	TS	Sep 19, 2018		Water	M18-Se30052				X		
8	TB	Sep 19, 2018		Water	M18-Se30053				X		
9	GW01_0.4-0.5	Sep 19, 2018		Soil	M18-Se30054	X					

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Received: Sep 19, 2018 5:29 PM
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Sample Detail						HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
10	GW01_0.9-1.0	Sep 19, 2018		Soil	M18-Se30055	X					
11	GW02_0.4-0.5	Sep 19, 2018		Soil	M18-Se30056	X					
12	GW03_0.0-0.1	Sep 19, 2018		Soil	M18-Se30057	X					
13	GW03_1.9-2.0	Sep 19, 2018		Soil	M18-Se30058	X					
14	GW03_2.9-3.0	Sep 19, 2018		Soil	M18-Se30059	X					
15	GW04_0.4-0.5	Sep 19, 2018		Soil	M18-Se30060	X					
16	GW05_0.0-0.1	Sep 19, 2018		Soil	M18-Se30061	X					
17	GW03_0.4-0.5	Sep 19, 2018		Soil	M18-Se30062	X					
18	GW03_0.9-1.0	Sep 19, 2018		Soil	M18-Se30063	X					
Test Counts						10	1	6	8	6	6

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil 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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
BTEX							
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	
LCS - % Recovery							
BTEX							
Benzene	%	100			70-130	Pass	
Toluene	%	100			70-130	Pass	
Ethylbenzene	%	89			70-130	Pass	
m&p-Xylenes	%	89			70-130	Pass	
Xylenes - Total	%	89			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
BTEX				Result 1					
Benzene	B18-Se26664	NCP	%	97			70-130	Pass	
Toluene	B18-Se26664	NCP	%	103			70-130	Pass	
Ethylbenzene	B18-Se26664	NCP	%	110			70-130	Pass	
m&p-Xylenes	B18-Se26664	NCP	%	102			70-130	Pass	
o-Xylene	B18-Se26664	NCP	%	101			70-130	Pass	
Xylenes - Total	B18-Se26664	NCP	%	102			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	B18-Se26627	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	B18-Se26627	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	B18-Se26627	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	B18-Se26627	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	B18-Se26627	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	B18-Se26627	NCP	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
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Nibha Vaidya	Analytical Services Manager
Harry Bacalis	Senior Analyst-Volatile (VIC)

Glenn Jackson
National Operations 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.

016262

EUROFINS 1 of 3.

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54933
PROJECT NAME: Peat Island
DATE NEEDED BY: STANDARD TAT.
PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) sburrows@jbsg.com.au; (3) cbennett@jbsg.com.au

LABORATORY BATCH NO.:
SAMPLERS: RL + RG
QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

620448

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TRH/BTEX	PAHs	Heavy metals	OCP/PCB	Asbestos	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
SS_56_0.0-0.1	Soil	28.9.18		1x bag, 1x jar		X		X	X	X			
SS_56_0.2-0.3								X					
SS_57_0.0-0.1						X	X	X					
SS_58_0.0-0.1								X					
SS_58_0.2-0.3													
SS_59_0.0-0.1								X					
SS_60_0.0-0.1								X					
SS_61_0.0-0.1						X		X	X				
SS_61_0.2-0.3													
SS_62_0.0-0.1													
SS_62_0.2-0.3								X					
SS_63_0.0-0.1						X		X					
SS_63_0.2-0.3													
SS_64_0.0-0.1													
SS_64_0.2-0.3								X					
SS_65_0.0-0.1								X	X				
SS_65_0.2-0.3													
SS_66_0-0.1								X					
SS_66_0.2-0.3													

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DATE: 28.9.18 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Elvis P DATE: 28/9/18 OF: Eurofins	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP 4.7 deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

EUROFINS 1 of 3.

016263

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54933	LABORATORY BATCH NO.:
PROJECT NAME: Peat Island.	SAMPLERS: CB RL JC RG.
DATE NEEDED BY: STANDARD TAT.	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBENNET@jbsg.com.au; (3) SBURROWS@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TRH/BTEX	PAHs	Heavy Metals	OCP/PCB	Asbestos	PFAS	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA
SS-66_0.5-0.6	SOIL	28.9.18		JAR + BAG + ICE		X	X	X	X	X			
SS-67_0-0.1				"		X	X	X					
SS-68_0-0.1				PFAS JAR + ICE							X		
SS-69_0-0.1											X		
SS-70_0-0.1											X		
SS-71_0-0.1											X		
SS73 0-0.1				1x B, 1x Jar + ice.		X	X	X	X	X			
QA-CB 20180928						X	X	X	X	X			
QC-CB 20180928						PLEASE FORWARD TO ENVIROLAB							
QC01 20180928						"							
QA01 20180928						X		X		X			
SS72 0-0.1						X		X		X			

NOTES: 620449

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DATE: 28.9.18 OF: JBS&G UB	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Elvis P DATE: 28/9/18 OF: Eurofins	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP 4.7 deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

016264

EUROFINS.

3 of 3

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54933

PROJECT NAME: Peat Island.

DATE NEEDED BY: STANDARD TAT

LABORATORY BATCH NO.:

SAMPLERS: CB RL RG JC.

QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) CBENNET.....@jbsg.com.au; (3) S.BURROWS.....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Please forward QC20180928-01 to Envirolab.

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	HEAVY METALS*	VOCs	PAHs	BTEX/TRH	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA
GW-01	WATER.	28.9.18		2 x VIALS, 1 x METAL 1 x AMBER + ICE		X	X	X	X		
GW-02						X	X	X	X		
GW-03						X	X	X	X		
GW-04						X	X	X	X		
GW-05						X		X	X		
MW-01						X		X	X		
MW-02						X		X	X		
MW-03						X		X	X		
QA20180928-01						X		X	X		
QC20180928-01						X	X	X	X		
RINS280918.				1 x BOTTLE + ICE, 2 x V, 1 x A		X	PLEASE FORWARD TO ENVIROLAB.				
RIN-W20180928.				1 x METAL + ICE + 2 x V, 1 x A		X		X	X		
FIELD BLANK				1 x PFAS BOTTLE + ICE							
TS/TB				2 x VIALS					X		

G20448

NOTES:

* Heavy Metals = Filtered (Standard)

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: CB DATE: 28/9/18. OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Envirol DATE: 28/9/18 OF: Eurofins	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP 4.7C deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Scott Burrows
Project name: PEAT ISLAND
Project ID: 54933
COC number: 016262-016264
Turn around time: 5 Day
Date/Time received: Sep 28, 2018 4:58 PM
Eurofins | mgt reference: **620448**

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 | mgt Sample Receipt : 4.8 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).

Notes

Triplicate samples sent to Envirolab for analysis. Additional PFAS tub for SS_68_0.1-0.2 received and placed on hold.

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Scott Burrows - SBurrows@jbsg.com.au.

Note: A copy of these results will also be delivered to the general JBS & G Australia (NSW) P/L email address.

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 620448
Phone: 02 8245 0300
Fax:

Received: Sep 28, 2018 4:58 PM
Due: Oct 8, 2018
Priority: 5 Day
Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	HOLD	HOLD	Metals M8	Metals M8 filtered	BTEX	Eurofins | mgt Suite B13	Volatile Organics	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7	Eurofins | mgt Suite B7 (filtered metals)	BTEXN and Volatile TRH	JBS&G Suite 2	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																
1	SS_56_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01706	X			X		X	X		X		X					
2	SS_56_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01707				X					X							
3	SS_57_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01708									X			X				
4	SS_58_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01709				X					X							
5	SS_59_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01710				X					X							
6	SS_60_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01711				X					X							
7	SS_61_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01712				X		X	X		X		X					
8	SS_62_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01713				X					X							
9	SS_63_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01714				X		X			X		X					

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
10	SS_64_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01715				X					X							
11	SS_65_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01716				X			X		X							
12	SS_66_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01717				X					X							
13	SS_66_0.5-0.6	Sep 28, 2018		Soil	S18-Oc01718	X								X						X	
14	SS_67_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01719									X			X				
15	SS_68_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01720										X						X
16	SS_69_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01721										X						X
17	SS_70_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01722										X						X
18	SS_71_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01723										X						X
19	SS_73_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01724	X								X						X	
20	QA20180928	Sep 28, 2018		Soil	S18-Oc01725	X								X						X	
21	QA01	Sep 28, 2018		Soil	S18-Oc01726	X			X		X			X		X					

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
	20180928																				
22	SS_72_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01727	X			X		X			X		X					
23	GW_01	Sep 28, 2018		Water	S18-Oc01728								X					X			
24	GW_02	Sep 28, 2018		Water	S18-Oc01729													X			
25	GW_03	Sep 28, 2018		Water	S18-Oc01730								X					X			
26	GW_04	Sep 28, 2018		Water	S18-Oc01731								X					X			
27	GW_05	Sep 28, 2018		Water	S18-Oc01732													X			
28	MW_01	Sep 28, 2018		Water	S18-Oc01733													X			
29	MW_02	Sep 28, 2018		Water	S18-Oc01734													X			
30	MW_03	Sep 28, 2018		Water	S18-Oc01735													X			
31	QA20180928-01	Sep 28, 2018		Water	S18-Oc01736								X					X			

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
32	RINS280918	Sep 28, 2018		Water	S18-Oc01737					X											
33	RIN-W20180928	Sep 28, 2018		Water	S18-Oc01738													X			
34	TS	Sep 28, 2018		Water	S18-Oc01739														X		
35	TB	Sep 28, 2018		Water	S18-Oc01740														X		
36	SS_58_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01741		X														
37	SS_62_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01742		X														
38	SS_62_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01743		X														
39	SS_63_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01744		X														
40	SS_64_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01745		X														
41	SS_65_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01746		X														
42	SS_66_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01747		X														

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
43	FIELD BLANK	Sep 28, 2018		Water	S18-Oc01748			X													
44	SS_68_0.1-0.2	Sep 28, 2018		Soil	S18-Oc01770			X													
Test Counts						6	9	9	13	1	5	3	4	22	22	5	2	10	2	3	4

Certificate of Analysis

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.

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Scott Burrows
Report	620448-AID
Project Name	PEAT ISLAND
Project ID	54933
Received Date	Sep 28, 2018
Date Reported	Oct 08, 2018

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 AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w).The examination of large sample sizes(500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction.The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA(friable asbestos) and AF(asbestos fines) then applies where they are able to be quantified by gravimetric procedures.This quantitative screening is not generally applicable to FF(free fibres) and results of Trace Analysis are referred. *NOTE: NATA News March 2014, p.7, states in relation to AS4964: "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". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk).* *This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the 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, June 2011.*

Project Name PEAT ISLAND
Project ID 54933
Date Sampled Sep 28, 2018
Report 620448-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
SS_56_0.0-0.1	18-Oc01706	Sep 28, 2018	Approximate Sample 658g Sample consisted of: Brown fine-grained sandy soil	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
SS_66_0.5-0.6	18-Oc01718	Sep 28, 2018	Approximate Sample 891g Sample consisted of: Brown fine-grained sandy soil	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
SS_73_0.0-0.1	18-Oc01724	Sep 28, 2018	Approximate Sample 679g Sample consisted of: Brown fine-grained sandy soil	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
QA20180928	18-Oc01725	Sep 28, 2018	Approximate Sample 699g Sample consisted of: Brown fine-grained sandy soil	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
QA01 20180928	18-Oc01726	Sep 28, 2018	Approximate Sample 644g Sample consisted of: Brown fine-grained sandy soil	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
SS_72_0.0-0.1	18-Oc01727	Sep 28, 2018	Approximate Sample 687g Sample consisted of: Brown fine-grained sandy soil	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres 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 (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Oct 02, 2018	Indefinite

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Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	HOLD	HOLD	Metals M8	Metals M8 filtered	BTEX	Eurofins | mgt Suite B13	Volatile Organics	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7	Eurofins | mgt Suite B7 (filtered metals)	BTEXN and Volatile TRH	JBS&G Suite 2	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																
1	SS_56_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01706	X			X		X	X		X		X					
2	SS_56_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01707				X					X							
3	SS_57_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01708									X			X				
4	SS_58_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01709				X					X							
5	SS_59_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01710				X					X							
6	SS_60_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01711				X					X							
7	SS_61_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01712				X		X	X		X		X					
8	SS_62_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01713				X					X							
9	SS_63_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01714				X		X			X		X					

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Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 620448
Phone: 02 8245 0300
Fax:

Received: Sep 28, 2018 4:58 PM
Due: Oct 8, 2018
Priority: 5 Day
Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	HOLD	HOLD	Metals M8	Metals M8 filtered	BTEX	Eurofins | mgt Suite B13	Volatile Organics	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7	Eurofins | mgt Suite B7 (filtered metals)	BTEXN and Volatile TRH	JBS&G Suite 2	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
10	SS_64_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01715				X					X							
11	SS_65_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01716				X			X		X							
12	SS_66_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01717				X					X							
13	SS_66_0.5-0.6	Sep 28, 2018		Soil	S18-Oc01718	X								X						X	
14	SS_67_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01719									X			X				
15	SS_68_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01720										X						X
16	SS_69_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01721										X						X
17	SS_70_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01722										X						X
18	SS_71_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01723										X						X
19	SS_73_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01724	X								X						X	
20	QA20180928	Sep 28, 2018		Soil	S18-Oc01725	X								X						X	
21	QA01	Sep 28, 2018		Soil	S18-Oc01726	X			X		X			X		X					

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
	20180928																				
22	SS_72_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01727	X			X		X			X		X					
23	GW_01	Sep 28, 2018		Water	S18-Oc01728								X					X			
24	GW_02	Sep 28, 2018		Water	S18-Oc01729													X			
25	GW_03	Sep 28, 2018		Water	S18-Oc01730								X					X			
26	GW_04	Sep 28, 2018		Water	S18-Oc01731								X					X			
27	GW_05	Sep 28, 2018		Water	S18-Oc01732													X			
28	MW_01	Sep 28, 2018		Water	S18-Oc01733													X			
29	MW_02	Sep 28, 2018		Water	S18-Oc01734													X			
30	MW_03	Sep 28, 2018		Water	S18-Oc01735													X			
31	QA20180928-01	Sep 28, 2018		Water	S18-Oc01736								X					X			

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
32	RINS280918	Sep 28, 2018		Water	S18-Oc01737					X											
33	RIN-W20180928	Sep 28, 2018		Water	S18-Oc01738													X			
34	TS	Sep 28, 2018		Water	S18-Oc01739														X		
35	TB	Sep 28, 2018		Water	S18-Oc01740														X		
36	SS_58_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01741		X														
37	SS_62_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01742		X														
38	SS_62_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01743		X														
39	SS_63_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01744		X														
40	SS_64_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01745		X														
41	SS_65_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01746		X														
42	SS_66_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01747		X														

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
43	FIELD BLANK	Sep 28, 2018		Water	S18-Oc01748			X													
44	SS_68_0.1-0.2	Sep 28, 2018		Soil	S18-Oc01770			X													
Test Counts						6	9	9	13	1	5	3	4	22	22	5	2	10	2	3	4

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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substatntial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

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:

Karthik Surisetty	Senior Analyst-Asbestos (NSW)

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Glenn Jackson
National Operations 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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Celebrating 30 years Testing and Protecting Human Health

Certificate of Analysis

JBS & G Australia (NSW) P/L
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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: **Scott Burrows**

Report **620448-S**
Project name PEAT ISLAND
Project ID 54933
Received Date Sep 28, 2018

Client Sample ID			**SS_56_0.0-0.1**	**SS_56_0.2-0.3**	**SS_57_0.0-0.1**	**SS_58_0.0-0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-Oc01706**	**S18-Oc01707**	**S18-Oc01708**	**S18-Oc01709**
Date Sampled			**Sep 28, 2018**	**Sep 28, 2018**	**Sep 28, 2018**	**Sep 28, 2018**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	< 50	-	< 50	-
BTEX						
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	-	74	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	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	-
Polycyclic Aromatic Hydrocarbons						
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[N07]	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	-

Client Sample ID			SS_56_0.0-0.1	SS_56_0.2-0.3	SS_57_0.0-0.1	SS_58_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc01706	S18-Oc01707	S18-Oc01708	S18-Oc01709
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	-	-	117	-
p-Terphenyl-d14 (surr.)	1	%	-	-	111	-
Organochlorine Pesticides						
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	%	107	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	95	-	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	107	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	95	-	-	-

Client Sample ID			SS_56_0.0-0.1	SS_56_0.2-0.3	SS_57_0.0-0.1	SS_58_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc01706	S18-Oc01707	S18-Oc01708	S18-Oc01709
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	8.4	7.3	11	7.3
Copper	5	mg/kg	< 5	< 5	11	< 5
Lead	5	mg/kg	11	32	110	41
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	7.2	< 5
Zinc	5	mg/kg	18	26	180	83
% Moisture	1	%	11	9.3	18	15

Client Sample ID			SS_59_0.0-0.1	SS_60_0.0-0.1	SS_61_0.0-0.1	SS_62_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc01710	S18-Oc01711	S18-Oc01712	S18-Oc01713
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	-
TRH C10-C14	20	mg/kg	-	-	< 20	-
TRH C15-C28	50	mg/kg	-	-	< 50	-
TRH C29-C36	50	mg/kg	-	-	< 50	-
TRH C10-36 (Total)	50	mg/kg	-	-	< 50	-
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	89	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	-
TRH C6-C10	20	mg/kg	-	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	-
TRH >C10-C16	50	mg/kg	-	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	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	-
Organochlorine Pesticides						
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	-

Client Sample ID			SS_59_0.0-0.1	SS_60_0.0-0.1	SS_61_0.0-0.1	SS_62_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc01710	S18-Oc01711	S18-Oc01712	S18-Oc01713
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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	%	-	-	97	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	92	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1221	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1232	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1242	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1248	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1254	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1260	0.1	mg/kg	-	-	< 0.1	-
Total PCB*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchlorendate (surr.)	1	%	-	-	97	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	92	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	11	10	30
Copper	5	mg/kg	12	15	< 5	< 5
Lead	5	mg/kg	32	12	19	9.4
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	9.4	< 5	< 5
Zinc	5	mg/kg	54	46	20	6.0
% Moisture	1	%	12	12	11	9.7

Client Sample ID			SS_63_0.0-0.1	SS_64_0.2-0.3	SS_65_0.0-0.1	SS_66_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc01714	S18-Oc01715	S18-Oc01716	S18-Oc01717
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	-	-
TRH C10-C14	20	mg/kg	< 20	-	-	-
TRH C15-C28	50	mg/kg	170	-	-	-
TRH C29-C36	50	mg/kg	95	-	-	-
TRH C10-36 (Total)	50	mg/kg	265	-	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	-
4-Bromofluorobenzene (surr.)	1	%	81	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	-	-
TRH C6-C10	20	mg/kg	< 20	-	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	-	-
TRH >C10-C16	50	mg/kg	< 50	-	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-	-
TRH >C16-C34	100	mg/kg	230	-	-	-
TRH >C34-C40	100	mg/kg	< 100	-	-	-
TRH >C10-C40 (total)*	100	mg/kg	230	-	-	-
Organochlorine Pesticides						
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	%	-	-	135	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	104	-

Client Sample ID			SS_63_0.0-0.1	SS_64_0.2-0.3	SS_65_0.0-0.1	SS_66_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc01714	S18-Oc01715	S18-Oc01716	S18-Oc01717
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1221	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1232	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1242	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1248	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1254	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1260	0.1	mg/kg	-	-	< 0.1	-
Total PCB*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchlorendate (surr.)	1	%	-	-	135	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	104	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	20	39	< 5	6.2
Copper	5	mg/kg	9.1	21	6.5	5.7
Lead	5	mg/kg	21	19	< 5	21
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	36	< 5	7.6
Zinc	5	mg/kg	43	53	31	20
% Moisture	1	%	8.8	15	70	11

Client Sample ID			SS_66_0.5-0.6	SS_67_0.0-0.1	SS_68_0.0-0.1	SS_69_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc01718	S18-Oc01719	S18-Oc01720	S18-Oc01721
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	< 50	< 50	-	-
BTEX						
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	%	112	106	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	-
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	< 100	< 100	-	-

Client Sample ID			SS_66_0.5-0.6	SS_67_0.0-0.1	SS_68_0.0-0.1	SS_69_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc01718	S18-Oc01719	S18-Oc01720	S18-Oc01721
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C34-C40	100	mg/kg	< 100	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	-	-
Polycyclic Aromatic Hydrocarbons						
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[N07]	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	%	113	97	-	-
p-Terphenyl-d14 (surr.)	1	%	119	93	-	-
Organochlorine Pesticides						
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	-	-	-

Client Sample ID			SS_66_0.5-0.6	SS_67_0.0-0.1	SS_68_0.0-0.1	SS_69_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc01718	S18-Oc01719	S18-Oc01720	S18-Oc01721
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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	%	110	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	117	-	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	110	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	117	-	-	-
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	-	-	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	-	-	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	-	-	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	-	-	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	-	-	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	-	-	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	-	-	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	-	-	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	-	-	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	-	-	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	-	-	< 5	< 5
13C4-PFBA (surr.)	1	%	-	-	75	58
13C5-PFPeA (surr.)	1	%	-	-	111	61
13C5-PFHxA (surr.)	1	%	-	-	92	77
13C4-PFHpA (surr.)	1	%	-	-	88	86
13C8-PFOA (surr.)	1	%	-	-	92	87
13C5-PFNA (surr.)	1	%	-	-	108	110
13C6-PFDA (surr.)	1	%	-	-	114	107
13C2-PFUnDA (surr.)	1	%	-	-	136	134
13C2-PFDoDA (surr.)	1	%	-	-	113	114
13C2-PFTeDA (surr.)	1	%	-	-	115	124
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	-	-	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	-	-	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	-	-	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	-	-	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	-	-	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	-	-	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	-	-	< 10	< 10
13C8-FOSA (surr.)	1	%	-	-	86	87

Client Sample ID			SS_66_0.5-0.6	SS_67_0.0-0.1	SS_68_0.0-0.1	SS_69_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc01718	S18-Oc01719	S18-Oc01720	S18-Oc01721
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D3-N-MeFOSA (surr.)	1	%	-	-	111	103
D5-N-EtFOSA (surr.)	1	%	-	-	97	100
D7-N-MeFOSE (surr.)	1	%	-	-	97	79
D9-N-EtFOSE (surr.)	1	%	-	-	90	97
D5-N-EtFOSAA (surr.)	1	%	-	-	113	118
D3-N-MeFOSAA (surr.)	1	%	-	-	114	127
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	-	-	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	-	-	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	-	-	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	-	-	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	-	-	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	-	-	< 5	< 5
13C3-PFBS (surr.)	1	%	-	-	89	81
18O2-PFHxS (surr.)	1	%	-	-	107	100
13C8-PFOS (surr.)	1	%	-	-	123	110
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	-	-	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	-	-	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	-	-	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N15]	5	ug/kg	-	-	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	-	-	102	91
13C2-6:2 FTSA (surr.)	1	%	-	-	112	69
13C2-8:2 FTSA (surr.)	1	%	-	-	111	145
PFASs Summations						
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=28)*	50	ug/kg	-	-	< 50	< 50
Heavy Metals						
Arsenic	2	mg/kg	< 2	7.1	-	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	-
Chromium	5	mg/kg	< 5	11	-	-
Copper	5	mg/kg	< 5	21	-	-
Lead	5	mg/kg	5.3	44	-	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	-
Nickel	5	mg/kg	< 5	27	-	-
Zinc	5	mg/kg	6.1	64	-	-
% Moisture	1	%	13	9.9	11	10

Client Sample ID			SS_70_0.0-0.1	SS_71_0.0-0.1	SS_73_0.0-0.1	QA20180928
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc01722	S18-Oc01723	S18-Oc01724	S18-Oc01725
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	-	-	< 50	< 50
BTEX						
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	%	-	-	115	108
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	< 20
TRH >C10-C16	50	mg/kg	-	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	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
Polycyclic Aromatic Hydrocarbons						
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[N07]	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	%	-	-	94	90
p-Terphenyl-d14 (surr.)	1	%	-	-	90	85

Client Sample ID			SS_70_0.0-0.1	SS_71_0.0-0.1	SS_73_0.0-0.1	QA20180928
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc01722	S18-Oc01723	S18-Oc01724	S18-Oc01725
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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
Dibutylchlorendate (surr.)	1	%	-	-	118	123
Tetrachloro-m-xylene (surr.)	1	%	-	-	118	125
Polychlorinated Biphenyls						
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
Dibutylchlorendate (surr.)	1	%	-	-	118	123
Tetrachloro-m-xylene (surr.)	1	%	-	-	118	125
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	-	-

Client Sample ID			SS_70_0.0-0.1	SS_71_0.0-0.1	SS_73_0.0-0.1	QA20180928
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc01722	S18-Oc01723	S18-Oc01724	S18-Oc01725
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	-	-
13C4-PFBA (surr.)	1	%	55	55	-	-
13C5-PFPeA (surr.)	1	%	69	86	-	-
13C5-PFHxA (surr.)	1	%	72	83	-	-
13C4-PFHpA (surr.)	1	%	78	86	-	-
13C8-PFOA (surr.)	1	%	79	81	-	-
13C5-PFNA (surr.)	1	%	95	102	-	-
13C6-PFDA (surr.)	1	%	103	103	-	-
13C2-PFUnDA (surr.)	1	%	126	137	-	-
13C2-PFDoDA (surr.)	1	%	108	117	-	-
13C2-PFTeDA (surr.)	1	%	105	109	-	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	-	-
13C8-FOSA (surr.)	1	%	82	86	-	-
D3-N-MeFOSA (surr.)	1	%	101	106	-	-
D5-N-EtFOSA (surr.)	1	%	96	104	-	-
D7-N-MeFOSE (surr.)	1	%	93	97	-	-
D9-N-EtFOSE (surr.)	1	%	90	97	-	-
D5-N-EtFOSAA (surr.)	1	%	113	118	-	-
D3-N-MeFOSAA (surr.)	1	%	126	137	-	-
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	-	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	-	-
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	-	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	-	-
13C3-PFBS (surr.)	1	%	63	83	-	-
18O2-PFHxS (surr.)	1	%	95	98	-	-
13C8-PFOS (surr.)	1	%	110	104	-	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N15]	5	ug/kg	< 5	< 5	-	-
13C2-4:2 FTSA (surr.)	1	%	83	102	-	-
13C2-6:2 FTSA (surr.)	1	%	113	109	-	-
13C2-8:2 FTSA (surr.)	1	%	105	99	-	-

Client Sample ID			SS_70_0.0-0.1	SS_71_0.0-0.1	SS_73_0.0-0.1	QA20180928
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-Oc01722**	**S18-Oc01723**	**S18-Oc01724**	**S18-Oc01725**
Date Sampled			**Sep 28, 2018**	**Sep 28, 2018**	**Sep 28, 2018**	**Sep 28, 2018**
Test/Reference	LOR	Unit				
PFASs Summations						
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=28)*	50	ug/kg	< 50	< 50	-	-
Heavy Metals						
Arsenic	2	mg/kg	-	-	4.1	4.2
Cadmium	0.4	mg/kg	-	-	< 0.4	< 0.4
Chromium	5	mg/kg	-	-	11	11
Copper	5	mg/kg	-	-	8.0	6.6
Lead	5	mg/kg	-	-	86	66
Mercury	0.1	mg/kg	-	-	< 0.1	< 0.1
Nickel	5	mg/kg	-	-	< 5	< 5
Zinc	5	mg/kg	-	-	78	59
% Moisture	1	%	12	15	12	11

Client Sample ID			QA01 20180928	SS_72_0.0-0.1
Sample Matrix			**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-Oc01726**	**S18-Oc01727**
Date Sampled			**Sep 28, 2018**	**Sep 28, 2018**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
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	76
TRH C10-36 (Total)	50	mg/kg	< 50	76
BTEX				
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	%	125	115
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	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			QA01 20180928	SS_72_0.0-0.1
Sample Matrix			**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-Oc01726**	**S18-Oc01727**
Date Sampled			**Sep 28, 2018**	**Sep 28, 2018**
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	2	mg/kg	4.3	4.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	15	18
Copper	5	mg/kg	38	38
Lead	5	mg/kg	150	140
Mercury	0.1	mg/kg	0.1	< 0.1
Nickel	5	mg/kg	17	15
Zinc	5	mg/kg	99	110
% Moisture	1	%	8.0	5.8

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 (regarding both quality and NATA accreditation).

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
JBS&G Suite 2			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Oct 05, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Oct 05, 2018	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 05, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 05, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Oct 05, 2018	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Oct 05, 2018	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Oct 05, 2018	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Melbourne	Oct 05, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Oct 03, 2018	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Oct 03, 2018	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Oct 03, 2018	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Oct 03, 2018	180 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
% Moisture	Melbourne	Oct 02, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

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Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 620448
Phone: 02 8245 0300
Fax:

Received: Sep 28, 2018 4:58 PM
Due: Oct 8, 2018
Priority: 5 Day
Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	HOLD	HOLD	Metals M8	Metals M8 filtered	BTEX	Eurofins | mgt Suite B13	Volatile Organics	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7	Eurofins | mgt Suite B7 (filtered metals)	BTEXN and Volatile TRH	JBS&G Suite 2	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																
1	SS_56_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01706	X			X		X	X		X		X					
2	SS_56_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01707				X					X							
3	SS_57_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01708									X			X				
4	SS_58_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01709				X					X							
5	SS_59_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01710				X					X							
6	SS_60_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01711				X					X							
7	SS_61_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01712				X		X	X		X		X					
8	SS_62_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01713				X					X							
9	SS_63_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01714				X		X			X		X					

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
10	SS_64_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01715				X					X							
11	SS_65_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01716				X			X		X							
12	SS_66_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01717				X					X							
13	SS_66_0.5-0.6	Sep 28, 2018		Soil	S18-Oc01718	X								X						X	
14	SS_67_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01719									X			X				
15	SS_68_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01720										X						X
16	SS_69_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01721										X						X
17	SS_70_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01722										X						X
18	SS_71_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01723										X						X
19	SS_73_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01724	X								X						X	
20	QA20180928	Sep 28, 2018		Soil	S18-Oc01725	X								X						X	
21	QA01	Sep 28, 2018		Soil	S18-Oc01726	X			X		X			X		X					

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
	20180928																				
22	SS_72_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01727	X			X		X			X		X					
23	GW_01	Sep 28, 2018		Water	S18-Oc01728								X					X			
24	GW_02	Sep 28, 2018		Water	S18-Oc01729													X			
25	GW_03	Sep 28, 2018		Water	S18-Oc01730								X					X			
26	GW_04	Sep 28, 2018		Water	S18-Oc01731								X					X			
27	GW_05	Sep 28, 2018		Water	S18-Oc01732													X			
28	MW_01	Sep 28, 2018		Water	S18-Oc01733													X			
29	MW_02	Sep 28, 2018		Water	S18-Oc01734													X			
30	MW_03	Sep 28, 2018		Water	S18-Oc01735													X			
31	QA20180928-01	Sep 28, 2018		Water	S18-Oc01736								X					X			

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
32	RINS280918	Sep 28, 2018		Water	S18-Oc01737					X											
33	RIN-W20180928	Sep 28, 2018		Water	S18-Oc01738													X			
34	TS	Sep 28, 2018		Water	S18-Oc01739														X		
35	TB	Sep 28, 2018		Water	S18-Oc01740														X		
36	SS_58_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01741		X														
37	SS_62_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01742		X														
38	SS_62_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01743		X														
39	SS_63_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01744		X														
40	SS_64_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01745		X														
41	SS_65_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01746		X														
42	SS_66_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01747		X														

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
43	FIELD BLANK	Sep 28, 2018		Water	S18-Oc01748			X													
44	SS_68_0.1-0.2	Sep 28, 2018		Soil	S18-Oc01770			X													
Test Counts						6	9	9	13	1	5	3	4	22	22	5	2	10	2	3	4

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil 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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
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	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

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	
Method Blank							
Polychlorinated Biphenyls							
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	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
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 (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
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	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	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	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
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	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	98			70-130	Pass	
TRH C10-C14	%	79			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	103			70-130	Pass	
Toluene	%	107			70-130	Pass	
Ethylbenzene	%	110			70-130	Pass	
m&p-Xylenes	%	111			70-130	Pass	
Xylenes - Total	%	111			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	119			70-130	Pass	
TRH C6-C10	%	95			70-130	Pass	
TRH >C10-C16	%	84			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	79			70-130	Pass	
Acenaphthylene	%	85			70-130	Pass	
Anthracene	%	78			70-130	Pass	
Benz(a)anthracene	%	91			70-130	Pass	
Benzo(a)pyrene	%	103			70-130	Pass	
Benzo(b&j)fluoranthene	%	90			70-130	Pass	
Benzo(g.h.i)perylene	%	93			70-130	Pass	
Benzo(k)fluoranthene	%	124			70-130	Pass	
Chrysene	%	113			70-130	Pass	
Dibenz(a.h)anthracene	%	85			70-130	Pass	
Fluoranthene	%	130			70-130	Pass	
Fluorene	%	82			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	93			70-130	Pass	
Naphthalene	%	76			70-130	Pass	
Phenanthrene	%	75			70-130	Pass	
Pyrene	%	117			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	109			70-130	Pass	
4.4'-DDE	%	104			70-130	Pass	
4.4'-DDT	%	126			70-130	Pass	
a-BHC	%	111			70-130	Pass	
Aldrin	%	111			70-130	Pass	
b-BHC	%	94			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
d-BHC	%	97			70-130	Pass	
Dieldrin	%	107			70-130	Pass	
Endosulfan I	%	105			70-130	Pass	
Endosulfan II	%	100			70-130	Pass	
Endosulfan sulphate	%	105			70-130	Pass	
Endrin	%	115			70-130	Pass	
Endrin aldehyde	%	111			70-130	Pass	
Endrin ketone	%	110			70-130	Pass	
g-BHC (Lindane)	%	104			70-130	Pass	
Heptachlor	%	106			70-130	Pass	
Heptachlor epoxide	%	104			70-130	Pass	
Hexachlorobenzene	%	97			70-130	Pass	
Methoxychlor	%	116			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	94			70-130	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	90			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	98			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	85			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	84			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	89			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	82			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	76			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	88			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	83			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	76			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	89			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	86			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	88			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	103			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	88			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	90			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	70			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	84			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	89			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	86			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	101			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	86			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	89			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	63			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	75			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	92			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	76			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	68			50-150	Pass	
LCS - % Recovery							
Heavy Metals							

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Arsenic			%	93			80-120	Pass	
Cadmium			%	91			80-120	Pass	
Chromium			%	105			80-120	Pass	
Copper			%	103			80-120	Pass	
Lead			%	103			80-120	Pass	
Mercury			%	111			75-125	Pass	
Nickel			%	104			80-120	Pass	
Zinc			%	105			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M18-Oc02622	NCP	%	91			70-130	Pass	
4.4'-DDE	M18-Oc02622	NCP	%	82			70-130	Pass	
4.4'-DDT	M18-Oc02622	NCP	%	108			70-130	Pass	
a-BHC	M18-Oc02622	NCP	%	90			70-130	Pass	
Aldrin	M18-Oc02622	NCP	%	97			70-130	Pass	
b-BHC	M18-Oc02622	NCP	%	70			70-130	Pass	
d-BHC	M18-Oc02622	NCP	%	75			70-130	Pass	
Dieldrin	M18-Oc02622	NCP	%	96			70-130	Pass	
Endosulfan I	M18-Oc02622	NCP	%	81			70-130	Pass	
Endosulfan II	M18-Oc02622	NCP	%	94			70-130	Pass	
Endosulfan sulphate	M18-Oc02622	NCP	%	94			70-130	Pass	
Endrin	M18-Oc02622	NCP	%	101			70-130	Pass	
Endrin aldehyde	S18-Oc01876	NCP	%	97			70-130	Pass	
Endrin ketone	M18-Oc02622	NCP	%	95			70-130	Pass	
g-BHC (Lindane)	M18-Oc02622	NCP	%	84			70-130	Pass	
Heptachlor	M18-Oc02622	NCP	%	90			70-130	Pass	
Heptachlor epoxide	M18-Oc02622	NCP	%	88			70-130	Pass	
Hexachlorobenzene	M18-Oc02622	NCP	%	75			70-130	Pass	
Methoxychlor	M18-Oc02622	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S18-Oc01868	NCP	%	85			70-130	Pass	
Acenaphthylene	S18-Oc01868	NCP	%	91			70-130	Pass	
Anthracene	S18-Oc01868	NCP	%	88			70-130	Pass	
Benz(a)anthracene	S18-Oc01868	NCP	%	79			70-130	Pass	
Benzo(a)pyrene	S18-Oc01868	NCP	%	93			70-130	Pass	
Benzo(b&j)fluoranthene	S18-Oc01868	NCP	%	82			70-130	Pass	
Benzo(g.h.i)perylene	S18-Oc01868	NCP	%	77			70-130	Pass	
Benzo(k)fluoranthene	S18-Oc01868	NCP	%	104			70-130	Pass	
Chrysene	S18-Oc01868	NCP	%	92			70-130	Pass	
Dibenz(a.h)anthracene	S18-Oc01868	NCP	%	76			70-130	Pass	
Fluoranthene	S18-Oc01868	NCP	%	102			70-130	Pass	
Fluorene	S18-Oc01868	NCP	%	86			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S18-Oc01868	NCP	%	85			70-130	Pass	
Naphthalene	S18-Oc01868	NCP	%	84			70-130	Pass	
Phenanthrene	S18-Oc01868	NCP	%	80			70-130	Pass	
Pyrene	S18-Oc01868	NCP	%	102			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-Oc01710	CP	%	94			75-125	Pass	
Cadmium	S18-Oc01710	CP	%	94			75-125	Pass	
Chromium	S18-Oc01710	CP	%	102			75-125	Pass	
Copper	S18-Oc01710	CP	%	112			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead	S18-Oc01710	CP	%	95			75-125	Pass	
Mercury	S18-Oc01710	CP	%	92			70-130	Pass	
Nickel	S18-Oc01710	CP	%	100			75-125	Pass	
Zinc	S18-Oc01710	CP	%	116			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-Oc01719	CP	%	106			75-125	Pass	
Cadmium	S18-Oc01719	CP	%	100			75-125	Pass	
Chromium	S18-Oc01719	CP	%	106			75-125	Pass	
Copper	S18-Oc01719	CP	%	123			75-125	Pass	
Lead	S18-Oc01719	CP	%	93			75-125	Pass	
Mercury	S18-Oc01719	CP	%	95			70-130	Pass	
Nickel	S18-Oc01719	CP	%	113			75-125	Pass	
Zinc	S18-Oc01719	CP	%	101			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M18-Se36888	NCP	%	86			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M18-Se36888	NCP	%	82			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M18-Se36888	NCP	%	71			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M18-Se36888	NCP	%	72			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M18-Se36888	NCP	%	52			50-150	Pass	
Perfluorononanoic acid (PFNA)	M18-Se36888	NCP	%	61			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M18-Se36888	NCP	%	57			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M18-Se36888	NCP	%	82			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M18-Se36888	NCP	%	75			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M18-Se36888	NCP	%	123			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M18-Se36888	NCP	%	76			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M18-Se36888	NCP	%	74			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M18-Se36888	NCP	%	79			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M18-Se36888	NCP	%	92			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M18-Se36888	NCP	%	88			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M18-Se36888	NCP	%	111			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M18-Se36888	NCP	%	66			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M18-Se36888	NCP	%	82			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M18-Se36888	NCP	%	72			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M18-Se36888	NCP	%	66			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M18-Se36888	NCP	%	72			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M18-Se36888	NCP	%	102			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorooctanesulfonic acid (PFOS)	M18-Se36888	NCP	%	ND			50-150	Fail	Q05
Perfluorodecanesulfonic acid (PFDS)	M18-Se36888	NCP	%	100			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M18-Se36888	NCP	%	78			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M18-Se36888	NCP	%	57			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M18-Se36888	NCP	%	84			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M18-Se36888	NCP	%	80			50-150	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S18-Oc01724	CP	%	88			70-130	Pass	
TRH C10-C14	S18-Oc01724	CP	%	92			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S18-Oc01724	CP	%	86			70-130	Pass	
Toluene	S18-Oc01724	CP	%	96			70-130	Pass	
Ethylbenzene	S18-Oc01724	CP	%	105			70-130	Pass	
m&p-Xylenes	S18-Oc01724	CP	%	101			70-130	Pass	
o-Xylene	S18-Oc01724	CP	%	106			70-130	Pass	
Xylenes - Total	S18-Oc01724	CP	%	103			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S18-Oc01724	CP	%	75			70-130	Pass	
TRH C6-C10	S18-Oc01724	CP	%	88			70-130	Pass	
TRH >C10-C16	S18-Oc01724	CP	%	93			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M18-Oc01657	NCP	%	18	18	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Mercury	S18-Oc01709	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-Oc01710	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S18-Oc01710	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S18-Oc01710	CP	mg/kg	12	12	2.0	30%	Pass	
Copper	S18-Oc01710	CP	mg/kg	12	12	2.0	30%	Pass	
Lead	S18-Oc01710	CP	mg/kg	32	32	1.0	30%	Pass	
Mercury	S18-Oc01710	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S18-Oc01710	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S18-Oc01710	CP	mg/kg	54	55	1.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-Oc01718	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S18-Oc01718	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S18-Oc01718	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S18-Oc01718	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S18-Oc01718	CP	mg/kg	5.3	5.6	7.0	30%	Pass	
Mercury	S18-Oc01718	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S18-Oc01718	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S18-Oc01718	CP	mg/kg	6.1	6.6	8.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S18-Oc01719	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S18-Oc01719	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S18-Oc01719	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S18-Oc01719	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S18-Oc01719	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S18-Oc01719	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S18-Oc01719	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S18-Oc01719	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S18-Oc01719	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S18-Oc01719	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S18-Oc01719	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S18-Oc01719	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S18-Oc01719	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-Oc01719	CP	mg/kg	7.1	7.5	5.0	30%	Pass	
Cadmium	S18-Oc01719	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S18-Oc01719	CP	mg/kg	11	11	1.0	30%	Pass	
Copper	S18-Oc01719	CP	mg/kg	21	20	1.0	30%	Pass	
Lead	S18-Oc01719	CP	mg/kg	44	45	1.0	30%	Pass	
Mercury	S18-Oc01719	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S18-Oc01719	CP	mg/kg	27	28	2.0	30%	Pass	
Zinc	S18-Oc01719	CP	mg/kg	64	64	1.0	30%	Pass	

Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M18-Oc00968	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M18-Oc00968	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M18-Oc00968	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M18-Oc00968	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S18-Oc01724	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S18-Oc01724	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S18-Oc01724	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S18-Oc01724	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S18-Oc01724	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S18-Oc01724	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S18-Oc01724	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S18-Oc01724	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S18-Oc01724	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S18-Oc01724	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S18-Oc01724	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S18-Oc01725	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S18-Oc01725	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S18-Oc01725	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S18-Oc01725	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S18-Oc01725	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S18-Oc01725	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S18-Oc01725	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S18-Oc01725	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S18-Oc01725	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S18-Oc01725	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S18-Oc01725	CP	mg/kg	< 0.1	< 0.1	<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
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).
Q05	The matrix spike concentration is less than five times the background concentration in the sample - therefore the spike recovery cannot be determined

Authorised By

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Jonathon Angell	Senior Analyst-Organic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)

Glenn Jackson

National Operations 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
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: **Scott Burrows**

Report **620448-W**
Project name PEAT ISLAND
Project ID 54933
Received Date Sep 28, 2018

Client Sample ID			**GW_01**	**GW_02**	**GW_03**	**GW_04**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S18-Oc01728**	**S18-Oc01729**	**S18-Oc01730**	**S18-Oc01731**
Date Sampled			**Sep 28, 2018**	**Sep 28, 2018**	**Sep 28, 2018**	**Sep 28, 2018**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	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)[N04]	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)[N01]	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
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
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	%	124	126	108	107
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001

Client Sample ID			GW_01	GW_02	GW_03	GW_04
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S18-Oc01728	S18-Oc01729	S18-Oc01730	S18-Oc01731
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Volatile Organics						
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
2-Butanone (MEK)	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
2-Propanone (Acetone)	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
4-Chlorotoluene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Allyl chloride	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Benzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Bromobenzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Bromoform	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Bromomethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Carbon disulfide	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Chloroethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Chloroform	0.005	mg/L	< 0.005	-	< 0.005	< 0.005
Chloromethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Dibromomethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Dichlorodifluoromethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Iodomethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	-	< 0.002	< 0.002
Methylene Chloride	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
o-Xylene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Styrene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Trichloroethene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Trichlorofluoromethane	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Vinyl chloride	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	-	< 0.003	< 0.003
Total MAH*	0.003	mg/L	< 0.003	-	< 0.003	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005	-	< 0.005	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005	-	< 0.005	< 0.005
4-Bromofluorobenzene (surr.)	1	%	124	-	108	107
Toluene-d8 (surr.)	1	%	114	-	104	99

Client Sample ID			GW_01	GW_02	GW_03	GW_04
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S18-Oc01728	S18-Oc01729	S18-Oc01730	S18-Oc01731
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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[N07]	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
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	%	106	81	98	94
p-Terphenyl-d14 (surr.)	1	%	104	77	110	105
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	0.002	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	0.0002	0.0006	0.0005
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.012	0.013	0.006	0.021
Lead (filtered)	0.001	mg/L	< 0.001	0.003	< 0.001	0.002
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.012	0.016	0.020	0.007
Zinc (filtered)	0.005	mg/L	0.22	0.14	0.11	0.17

Client Sample ID			GW_05	MW_01	MW_02	MW_03
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S18-Oc01732	S18-Oc01733	S18-Oc01734	S18-Oc01735
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	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)[N04]	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)[N01]	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
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			GW_05	MW_01	MW_02	MW_03
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S18-Oc01732	S18-Oc01733	S18-Oc01734	S18-Oc01735
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
BTEX						
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	%	121	127	116	121
Polycyclic Aromatic Hydrocarbons						
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[N07]	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
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	%	86	78	90	86
p-Terphenyl-d14 (surr.)	1	%	107	89	96	98
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
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	0.004	0.027	0.034	0.035
Lead (filtered)	0.001	mg/L	0.001	0.004	0.005	0.004
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.003	0.005	0.007	0.006
Zinc (filtered)	0.005	mg/L	0.056	0.14	0.14	0.15

Client Sample ID			QA20180928-01	RINS280918	RIN-W20180928	[R20]TS
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S18-Oc01736**	**S18-Oc01737**	**S18-Oc01738**	**S18-Oc01739**
Date Sampled			**Sep 28, 2018**	**Sep 28, 2018**	**Sep 28, 2018**	**Sep 28, 2018**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	-	< 0.01	96
TRH C6-C10	0.02	mg/L	< 0.02	-	< 0.02	84
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	-	< 0.02	-
TRH >C10-C16	0.05	mg/L	< 0.05	-	< 0.05	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	-	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	-	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	-	< 0.1	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	-	< 0.1	-
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	-	< 0.02	83
TRH C10-C14	0.05	mg/L	< 0.05	-	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	-	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	-	< 0.1	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	-	< 0.1	-
BTEX						
Benzene	0.001	mg/L	< 0.001	-	< 0.001	97
Toluene	0.001	mg/L	< 0.001	-	< 0.001	93
Ethylbenzene	0.001	mg/L	< 0.001	-	< 0.001	97
m&p-Xylenes	0.002	mg/L	< 0.002	-	< 0.002	92
o-Xylene	0.001	mg/L	< 0.001	-	< 0.001	100
Xylenes - Total	0.003	mg/L	< 0.003	-	< 0.003	96
4-Bromofluorobenzene (surr.)	1	%	120	-	122	130
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	-	-	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	-	-	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	-	-	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	-	-	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	-	-	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	-	-	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	-	-	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	-	-	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	-	-	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	-	-	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	-	-	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	-	-	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	-	-	-
1.3-Dichloropropane	0.001	mg/L	< 0.001	-	-	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	-	-	-
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	-	-	-
2-Butanone (MEK)	0.001	mg/L	< 0.001	-	-	-
2-Propanone (Acetone)	0.001	mg/L	< 0.001	-	-	-
4-Chlorotoluene	0.001	mg/L	< 0.001	-	-	-
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	-	-	-
Allyl chloride	0.001	mg/L	< 0.001	-	-	-
Benzene	0.001	mg/L	< 0.001	-	-	-
Bromobenzene	0.001	mg/L	< 0.001	-	-	-
Bromochloromethane	0.001	mg/L	< 0.001	-	-	-
Bromodichloromethane	0.001	mg/L	< 0.001	-	-	-
Bromoform	0.001	mg/L	< 0.001	-	-	-

Client Sample ID			QA20180928-01	RINS280918	RIN-W20180928	[R20]TS
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S18-Oc01736	S18-Oc01737	S18-Oc01738	S18-Oc01739
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Volatile Organics						
Bromomethane	0.001	mg/L	< 0.001	-	-	-
Carbon disulfide	0.001	mg/L	< 0.001	-	-	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	-	-	-
Chlorobenzene	0.001	mg/L	< 0.001	-	-	-
Chloroethane	0.001	mg/L	< 0.001	-	-	-
Chloroform	0.005	mg/L	< 0.005	-	-	-
Chloromethane	0.001	mg/L	< 0.001	-	-	-
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	-	-	-
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	-	-	-
Dibromochloromethane	0.001	mg/L	< 0.001	-	-	-
Dibromomethane	0.001	mg/L	< 0.001	-	-	-
Dichlorodifluoromethane	0.001	mg/L	< 0.001	-	-	-
Ethylbenzene	0.001	mg/L	< 0.001	-	-	-
Iodomethane	0.001	mg/L	< 0.001	-	-	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	-	-	-
m&p-Xylenes	0.002	mg/L	< 0.002	-	-	-
Methylene Chloride	0.001	mg/L	< 0.001	-	-	-
o-Xylene	0.001	mg/L	< 0.001	-	-	-
Styrene	0.001	mg/L	< 0.001	-	-	-
Tetrachloroethene	0.001	mg/L	< 0.001	-	-	-
Toluene	0.001	mg/L	< 0.001	-	-	-
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	-	-	-
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	-	-	-
Trichloroethene	0.001	mg/L	< 0.001	-	-	-
Trichlorofluoromethane	0.001	mg/L	< 0.001	-	-	-
Vinyl chloride	0.001	mg/L	< 0.001	-	-	-
Xylenes - Total	0.003	mg/L	< 0.003	-	-	-
Total MAH*	0.003	mg/L	< 0.003	-	-	-
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005	-	-	-
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005	-	-	-
4-Bromofluorobenzene (surr.)	1	%	120	-	-	-
Toluene-d8 (surr.)	1	%	114	-	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	-	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	-	< 0.001	-
Anthracene	0.001	mg/L	< 0.001	-	< 0.001	-
Benz(a)anthracene	0.001	mg/L	< 0.001	-	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	-	< 0.001	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	-	< 0.001	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	-	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-	< 0.001	-
Chrysene	0.001	mg/L	< 0.001	-	< 0.001	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	-	< 0.001	-
Fluoranthene	0.001	mg/L	< 0.001	-	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	-	< 0.001	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	-	< 0.001	-
Naphthalene	0.001	mg/L	< 0.001	-	< 0.001	-
Phenanthrene	0.001	mg/L	< 0.001	-	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	-	< 0.001	-

Client Sample ID			QA20180928-01	RINS280918	RIN-W20180928	[R20]TS
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S18-Oc01736	S18-Oc01737	S18-Oc01738	S18-Oc01739
Date Sampled			Sep 28, 2018	Sep 28, 2018	Sep 28, 2018	Sep 28, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Total PAH*	0.001	mg/L	< 0.001	-	< 0.001	-
2-Fluorobiphenyl (surr.)	1	%	101	-	105	-
p-Terphenyl-d14 (surr.)	1	%	117	-	112	-
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Copper (filtered)	0.001	mg/L	0.007	< 0.001	< 0.001	-
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Nickel (filtered)	0.001	mg/L	0.008	< 0.001	< 0.001	-
Zinc (filtered)	0.005	mg/L	0.11	0.009	0.008	-

Client Sample ID			TB
Sample Matrix			Water
Eurofins | mgt Sample No.			S18-Oc01740
Date Sampled			Sep 28, 2018
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	100

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 (regarding both quality and NATA accreditation).

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	Melbourne	Oct 03, 2018	7 Day
- Method: LTM-ORG-2010 TRH C6-C40			
JBS&G Suite 2			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 04, 2018	7 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 04, 2018	7 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Oct 04, 2018	7 Day
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Oct 04, 2018	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Polycyclic Aromatic Hydrocarbons	Melbourne	Oct 04, 2018	7 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Volatile Organics	Melbourne	Oct 04, 2018	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Eurofins | mgt Suite B7 (filtered metals)			
Metals M8 filtered	Melbourne	Oct 04, 2018	28 Day
- Method:			

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Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 620448
Phone: 02 8245 0300
Fax:

Received: Sep 28, 2018 4:58 PM
Due: Oct 8, 2018
Priority: 5 Day
Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	HOLD	HOLD	Metals M8	Metals M8 filtered	BTEX	Eurofins | mgt Suite B13	Volatile Organics	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7	Eurofins | mgt Suite B7 (filtered metals)	BTEXN and Volatile TRH	JBS&G Suite 2	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																
1	SS_56_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01706	X			X		X	X		X		X					
2	SS_56_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01707				X					X							
3	SS_57_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01708									X			X				
4	SS_58_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01709				X					X							
5	SS_59_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01710				X					X							
6	SS_60_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01711				X					X							
7	SS_61_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01712				X		X	X		X		X					
8	SS_62_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01713				X					X							
9	SS_63_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01714				X		X			X		X					

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 620448
Phone: 02 8245 0300
Fax:

Received: Sep 28, 2018 4:58 PM
Due: Oct 8, 2018
Priority: 5 Day
Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	HOLD	HOLD	Metals M8	Metals M8 filtered	BTEX	Eurofins | mgt Suite B13	Volatile Organics	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7	Eurofins | mgt Suite B7 (filtered metals)	BTEXN and Volatile TRH	JBS&G Suite 2	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
10	SS_64_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01715				X					X							
11	SS_65_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01716				X			X		X							
12	SS_66_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01717				X					X							
13	SS_66_0.5-0.6	Sep 28, 2018		Soil	S18-Oc01718	X								X						X	
14	SS_67_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01719									X			X				
15	SS_68_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01720										X						X
16	SS_69_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01721										X						X
17	SS_70_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01722										X						X
18	SS_71_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01723										X						X
19	SS_73_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01724	X								X						X	
20	QA20180928	Sep 28, 2018		Soil	S18-Oc01725	X								X						X	
21	QA01	Sep 28, 2018		Soil	S18-Oc01726	X			X		X			X		X					

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
	20180928																				
22	SS_72_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01727	X			X		X			X		X					
23	GW_01	Sep 28, 2018		Water	S18-Oc01728								X					X			
24	GW_02	Sep 28, 2018		Water	S18-Oc01729													X			
25	GW_03	Sep 28, 2018		Water	S18-Oc01730								X					X			
26	GW_04	Sep 28, 2018		Water	S18-Oc01731								X					X			
27	GW_05	Sep 28, 2018		Water	S18-Oc01732													X			
28	MW_01	Sep 28, 2018		Water	S18-Oc01733													X			
29	MW_02	Sep 28, 2018		Water	S18-Oc01734													X			
30	MW_03	Sep 28, 2018		Water	S18-Oc01735													X			
31	QA20180928-01	Sep 28, 2018		Water	S18-Oc01736								X					X			

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
32	RINS280918	Sep 28, 2018		Water	S18-Oc01737					X											
33	RIN-W20180928	Sep 28, 2018		Water	S18-Oc01738													X			
34	TS	Sep 28, 2018		Water	S18-Oc01739														X		
35	TB	Sep 28, 2018		Water	S18-Oc01740														X		
36	SS_58_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01741		X														
37	SS_62_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01742		X														
38	SS_62_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01743		X														
39	SS_63_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01744		X														
40	SS_64_0.0-0.1	Sep 28, 2018		Soil	S18-Oc01745		X														
41	SS_65_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01746		X														
42	SS_66_0.2-0.3	Sep 28, 2018		Soil	S18-Oc01747		X														

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217						X															
Brisbane Laboratory - NATA Site # 20794								X						X	X						X
Perth Laboratory - NATA Site # 23736																					
43	FIELD BLANK	Sep 28, 2018		Water	S18-Oc01748			X													
44	SS_68_0.1-0.2	Sep 28, 2018		Soil	S18-Oc01770			X													
Test Counts						6	9	9	13	1	5	3	4	22	22	5	2	10	2	3	4

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil 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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
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	
Method Blank							
BTEX							
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	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.001			0.001	Pass	
2-Propanone (Acetone)	mg/L	< 0.001			0.001	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.001			0.001	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.001			0.001	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloroethane	mg/L	< 0.001			0.001	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.001			0.001	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.001			0.001	Pass	
Vinyl chloride	mg/L	< 0.001			0.001	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
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	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	84			70-130	Pass	
TRH C6-C10	%	113			70-130	Pass	
TRH >C10-C16	%	78			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	128			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14	%	88			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	113			70-130	Pass	
Toluene	%	109			70-130	Pass	
Ethylbenzene	%	87			70-130	Pass	
m&p-Xylenes	%	87			70-130	Pass	
Xylenes - Total	%	87			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	88			70-130	Pass	
1.1.1-Trichloroethane	%	103			70-130	Pass	
1.2-Dichlorobenzene	%	95			70-130	Pass	
1.2-Dichloroethane	%	110			70-130	Pass	
Trichloroethene	%	102			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	83			70-130	Pass	
Acenaphthylene	%	104			70-130	Pass	
Anthracene	%	92			70-130	Pass	
Benz(a)anthracene	%	98			70-130	Pass	
Benzo(a)pyrene	%	84			70-130	Pass	
Benzo(b&j)fluoranthene	%	81			70-130	Pass	
Benzo(g.h.i)perylene	%	88			70-130	Pass	
Benzo(k)fluoranthene	%	99			70-130	Pass	
Chrysene	%	82			70-130	Pass	
Dibenz(a.h)anthracene	%	86			70-130	Pass	
Fluoranthene	%	81			70-130	Pass	
Fluorene	%	93			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	84			70-130	Pass	
Naphthalene	%	73			70-130	Pass	
Phenanthrene	%	114			70-130	Pass	
Pyrene	%	81			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic (filtered)	%	99			80-120	Pass	
Cadmium (filtered)	%	95			80-120	Pass	
Chromium (filtered)	%	95			80-120	Pass	
Copper (filtered)	%	94			80-120	Pass	
Lead (filtered)	%	92			80-120	Pass	
Mercury (filtered)	%	90			70-130	Pass	
Nickel (filtered)	%	94			80-120	Pass	
Zinc (filtered)	%	97			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M18-Oc01171	NCP	%	73			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M18-Oc01171	NCP	%	75			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	P18-Oc00771	NCP	%	84			70-130	Pass	
Acenaphthylene	P18-Oc00771	NCP	%	108			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Anthracene	P18-Oc00771	NCP	%	96			70-130	Pass	
Benz(a)anthracene	P18-Oc00771	NCP	%	115			70-130	Pass	
Benzo(a)pyrene	P18-Oc00771	NCP	%	93			70-130	Pass	
Benzo(b&j)fluoranthene	P18-Oc00771	NCP	%	86			70-130	Pass	
Benzo(g.h.i)perylene	P18-Oc00771	NCP	%	101			70-130	Pass	
Benzo(k)fluoranthene	P18-Oc00771	NCP	%	100			70-130	Pass	
Chrysene	P18-Oc00771	NCP	%	91			70-130	Pass	
Dibenz(a.h)anthracene	P18-Oc00771	NCP	%	112			70-130	Pass	
Fluoranthene	P18-Oc00771	NCP	%	82			70-130	Pass	
Fluorene	P18-Oc00771	NCP	%	99			70-130	Pass	
Indeno(1.2.3-cd)pyrene	P18-Oc00771	NCP	%	101			70-130	Pass	
Naphthalene	P18-Oc00771	NCP	%	77			70-130	Pass	
Phenanthrene	P18-Oc00771	NCP	%	117			70-130	Pass	
Pyrene	P18-Oc00771	NCP	%	81			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S18-Oc01728	CP	%	100			70-130	Pass	
Cadmium (filtered)	S18-Oc01728	CP	%	94			70-130	Pass	
Chromium (filtered)	S18-Oc01728	CP	%	96			70-130	Pass	
Copper (filtered)	S18-Oc01728	CP	%	92			70-130	Pass	
Lead (filtered)	S18-Oc01728	CP	%	91			70-130	Pass	
Mercury (filtered)	S18-Oc01728	CP	%	76			70-130	Pass	
Nickel (filtered)	S18-Oc01728	CP	%	92			70-130	Pass	
Zinc (filtered)	S18-Oc01728	CP	%	88			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S18-Oc01738	CP	%	102			70-130	Pass	
Cadmium (filtered)	S18-Oc01738	CP	%	100			70-130	Pass	
Chromium (filtered)	S18-Oc01738	CP	%	101			70-130	Pass	
Copper (filtered)	S18-Oc01738	CP	%	101			70-130	Pass	
Lead (filtered)	S18-Oc01738	CP	%	97			70-130	Pass	
Mercury (filtered)	S18-Oc01738	CP	%	95			70-130	Pass	
Nickel (filtered)	S18-Oc01738	CP	%	101			70-130	Pass	
Zinc (filtered)	S18-Oc01738	CP	%	96			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S18-Se37053	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S18-Se37053	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S18-Se37053	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S18-Se37053	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Dibenz(a.h)anthracene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	P18-Oc00770	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S18-Oc01728	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	S18-Oc01728	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S18-Oc01728	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S18-Oc01728	CP	mg/L	0.012	0.012	2.0	30%	Pass	
Lead (filtered)	S18-Oc01728	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	S18-Oc01728	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S18-Oc01728	CP	mg/L	0.012	0.013	3.0	30%	Pass	
Zinc (filtered)	S18-Oc01728	CP	mg/L	0.22	0.23	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S18-Oc01738	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	S18-Oc01738	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S18-Oc01738	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S18-Oc01738	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S18-Oc01738	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	S18-Oc01738	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S18-Oc01738	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc (filtered)	S18-Oc01738	CP	mg/L	0.008	0.008	2.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S18-Oc01740	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S18-Oc01740	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S18-Oc01740	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S18-Oc01740	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S18-Oc01740	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S18-Oc01740	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S18-Oc01740	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S18-Oc01740	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S18-Oc01740	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
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
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
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)

Glenn Jackson

National Operations 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.

Enviro Sample Vic

From: Nibha Vaidya
Sent: Tuesday, 2 October 2018 5:29 PM
To: Enviro Sample Vic
Cc: Alena Bounkeua
Subject: 5 DAY TAT - FW: 54933 Additional Analysis
Attachments: image001.png

Additional analysis please – 5 day TAT

Samples from various reports as listed below.

JBS & G Australia (NSW) P/L

Details | Contacts | Samples | Schedule | Quotes

Report No: | Sample No: | Site: 54933 | Lab: Se

Report #	Recd Date	Sample #	Site	Location
620448	Sep 28, 2018	S18-Oc01706 S18-Oc01770	PEAT ISLAND (54933)	TS
618949	Sep 21, 2018	S18-Se28908 S18-Se28914	PEAT ISLAND (54933)	TS
618880	Sep 20, 2018	S18-Se28412 S18-Se28603	PEAT ISLAND (54933)	TS
618500	Sep 18, 2018	M18-Se25567 M18-Se26813	PEAT ISLAND (54933)	SS16 0.9-1.

Kind Regards,

Nibha Vaidya
Phone : +61 2 9900 8415
Mobile : +61 499 900 805
Email : NibhaVaidya@eurofins.com

2/10 529r 620797

From: Claudia Bennett [mailto:cbennett@jbsg.com.au]
Sent: Tuesday, 2 October 2018 4:57 PM
To: Nibha Vaidya
Cc: Scott Burrows
Subject: 54933 Additional Analysis

EXTERNAL EMAIL*

Hi Nibha

Hope you've been well and enjoyed the long weekend.

Can I please schedule the following additional analysis for job 54933 PEAT ISLAND

SS02 0.5-0.6 - Metals (8) Se25588- Hold

SS03 0-0.1 – Asbestos (NEPM) Se 25591 – Hold.

SS05 0.5-0.6 – Asbestos (NEPM) Se25593 – Hold.

SS07 0.9-1.0 – Metals (8) Se25599 – Hold.

SS13 0-0.1 – Metals (8) Se25605 – Hold

SS16 0-0.1 – TRH/BTEX, PAH, OCP/PCB Se 25588 – G1122.

SS22 0-0.1 – Metals (8), TRH/BTEX, OCP/PCB No sample with this ID.

SS28 0-0.1 – Metals (8) No sample with this ID.

SS28 0.2-0.3 – Metals (8), TRH/BTEX, PAH " "

SS30 0-0.1 – Metals (8), TRH/BTEX Se 28435 – G1178 114

SS32 0-0.1 – Metals (8), TRH/BTEX, PAH, OCP/PCB Se28436 – G1178.

SS34 0-0.1 – Metals (8), TRH/BTEX Se28419 – G1178.

SS37 0-0.1 – Metals (8), TRH/BTEX, PAH, OCP/PCB Se28565 – Hold. 145

SS39 0-0.1 – TRH/BTEX, PAH, OCP/PCB Se28602 – Hold

SS40 0-0.1 – Metals (8), TRH/BTEX, PAH, OCP/PCB Se28438 – G1178. 146

SS41 0.2-0.3 – TRH/BTEX, PAH Se28420 – G1178

SS44 0-0.1 – OCP/PCB Se28423 – G1178

SS47 0-0.1 – TRH/BTEX, PAH, OCP/PCB Se28427 – G1178

SS61 0.2-0.3 – pH, % clay, CEC No sample with this ID.

GW03 1.9-2.0 – Metals (8), TRH/BTEX " "

GW03 3.4-3.5 – Metals (8), TRH/BTEX, PAH " "

GW05 0.4-0.5 – Metals (8), TRH/BTEX, PAH " "

Thanks and kind regards.

Claudia

Get Outlook for iOS

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Phone : +61 3 8564 5000
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Site # 1254 & 14271

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name:	**JBS & G Australia (NSW) P/L**
Contact name:	Claudia Bennett
Project name:	PEAT ISLAND
Project ID:	54933
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Oct 2, 2018 5:29 PM
Eurofins | mgt reference:	**620797**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☒ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☒ Split sample sent to requested external lab.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

SOME SAMPLES NOT IN PREVIOUS REPORTS

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Claudia Bennett - CBennett@jbsg.com.au.

Note: A copy of these results will also be delivered to the general JBS & G Australia (NSW) P/L email address.

eurofins | mgt

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e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

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NATA # 1261 Site # 18217

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 620797
Phone: 02 8245 0300
Fax:

Received: Oct 2, 2018 5:29 PM
Due: Oct 9, 2018
Priority: 5 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X							
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	SS02 0.5-0.6	Sep 18, 2018		Soil	M18-Oc04219					X		X	
2	SS03 0-0.1	Sep 18, 2018		Soil	M18-Oc04220	X							
3	SS05 0.5-0.6	Sep 18, 2018		Soil	M18-Oc04221	X							
4	SS07 0.9-1.0	Sep 18, 2018		Soil	M18-Oc04222					X		X	
5	SS13 0-0.1	Sep 18, 2018		Soil	M18-Oc04223					X		X	
6	SS16 0-0.1	Sep 18, 2018		Soil	M18-Oc04224		X	X	X		X	X	X
7	SS30 0-0.1	Sep 20, 2018		Soil	M18-Oc04225					X	X	X	X
8	SS32 0-0.1	Sep 20, 2018		Soil	M18-Oc04226		X	X	X	X	X	X	X
9	SS34 0-0.1	Sep 20, 2018		Soil	M18-Oc04227					X	X	X	X

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

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NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 620797
Phone: 02 8245 0300
Fax:

Received: Oct 2, 2018 5:29 PM
Due: Oct 9, 2018
Priority: 5 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X							
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
10	SS37 0-0.1	Sep 20, 2018		Soil	M18-Oc04228		X	X	X	X	X	X	X
11	SS39 0-0.1	Sep 20, 2018		Soil	M18-Oc04229		X	X	X		X	X	X
12	SS40 0-0.1	Sep 20, 2018		Soil	M18-Oc04230		X	X	X	X	X	X	X
13	SS41 0.2-0.3	Sep 20, 2018		Soil	M18-Oc04231		X				X	X	X
14	SS44 0-0.1	Sep 20, 2018		Soil	M18-Oc04232			X	X			X	
15	SS47 0-0.1	Sep 20, 2018		Soil	M18-Oc04233		X	X	X		X	X	X
Test Counts						2	7	7	7	8	9	13	9

Certificate of Analysis

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.

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Claudia Bennett
Report	620797-AID
Project Name	PEAT ISLAND
Project ID	54933
Received Date	Oct 02, 2018
Date Reported	Oct 09, 2018

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 AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w).The examination of large sample sizes(500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction.The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA(friable asbestos) and AF(asbestos fines) then applies where they are able to be quantified by gravimetric procedures.This quantitative screening is not generally applicable to FF(free fibres) and results of Trace Analysis are referred. *NOTE: NATA News March 2014, p.7, states in relation to AS4964: "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". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk).* *This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the 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, June 2011.*

Project Name PEAT ISLAND
Project ID 54933
Date Sampled Sep 18, 2018
Report 620797-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
SS03 0-0.1	18-Oc04220	Sep 18, 2018	Approximate Sample 256g Sample consisted of: Dark brown fine-grained soil and organic debris	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
SS05 0.5-0.6	18-Oc04221	Sep 18, 2018	Approximate Sample 298g Sample consisted of: Brown fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres 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 (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Oct 04, 2018	Indefinite

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3-5 Kingston Town Close
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NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 620797
Phone: 02 8245 0300
Fax:

Received: Oct 2, 2018 5:29 PM
Due: Oct 9, 2018
Priority: 5 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X							
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	SS02 0.5-0.6	Sep 18, 2018		Soil	M18-Oc04219					X		X	
2	SS03 0-0.1	Sep 18, 2018		Soil	M18-Oc04220	X							
3	SS05 0.5-0.6	Sep 18, 2018		Soil	M18-Oc04221	X							
4	SS07 0.9-1.0	Sep 18, 2018		Soil	M18-Oc04222					X		X	
5	SS13 0-0.1	Sep 18, 2018		Soil	M18-Oc04223					X		X	
6	SS16 0-0.1	Sep 18, 2018		Soil	M18-Oc04224		X	X	X		X	X	X
7	SS30 0-0.1	Sep 20, 2018		Soil	M18-Oc04225					X	X	X	X
8	SS32 0-0.1	Sep 20, 2018		Soil	M18-Oc04226		X	X	X	X	X	X	X
9	SS34 0-0.1	Sep 20, 2018		Soil	M18-Oc04227					X	X	X	X

ABN – 50 005 085 521
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web : www.eurofins.com.au

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Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X							
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
10	SS37 0-0.1	Sep 20, 2018		Soil	M18-Oc04228		X	X	X	X	X	X	X
11	SS39 0-0.1	Sep 20, 2018		Soil	M18-Oc04229		X	X	X		X	X	X
12	SS40 0-0.1	Sep 20, 2018		Soil	M18-Oc04230		X	X	X	X	X	X	X
13	SS41 0.2-0.3	Sep 20, 2018		Soil	M18-Oc04231		X				X	X	X
14	SS44 0-0.1	Sep 20, 2018		Soil	M18-Oc04232			X	X			X	
15	SS47 0-0.1	Sep 20, 2018		Soil	M18-Oc04233		X	X	X		X	X	X
Test Counts						2	7	7	7	8	9	13	9

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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substatntial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Sample received was less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

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:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Authorised by:

Nibha Vaidya	Senior Analyst-Asbestos (NSW)

Glenn Jackson
National Operations 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.

Certificate of Analysis

JBS & G Australia (NSW) P/L
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NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 1254

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Attention: **Claudia Bennett**

Report **620797-S**
Project name PEAT ISLAND
Project ID 54933
Received Date Oct 02, 2018

Client Sample ID			**SS02 0.5-0.6**	**SS07 0.9-1.0**	**SS13 0-0.1**	**SS16 0-0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-Oc04219**	**M18-Oc04222**	**M18-Oc04223**	**M18-Oc04224**
Date Sampled			**Sep 18, 2018**	**Sep 18, 2018**	**Sep 18, 2018**	**Sep 18, 2018**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	-	< 20
TRH C10-C14	20	mg/kg	-	-	-	< 20
TRH C15-C28	50	mg/kg	-	-	-	< 50
TRH C29-C36	50	mg/kg	-	-	-	< 50
TRH C10-36 (Total)	50	mg/kg	-	-	-	< 50
BTEX						
Benzene	0.1	mg/kg	-	-	-	< 0.1
Toluene	0.1	mg/kg	-	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
o-Xylene	0.1	mg/kg	-	-	-	< 0.1
Xylenes - Total	0.3	mg/kg	-	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	-	111
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	-	< 0.5
TRH C6-C10	20	mg/kg	-	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	-	< 20
TRH >C10-C16	50	mg/kg	-	-	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	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
Polycyclic Aromatic Hydrocarbons						
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[N07]	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

Client Sample ID			SS02 0.5-0.6	SS07 0.9-1.0	SS13 0-0.1	SS16 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Oc04219	M18-Oc04222	M18-Oc04223	M18-Oc04224
Date Sampled			Sep 18, 2018	Sep 18, 2018	Sep 18, 2018	Sep 18, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	-	-	-	104
p-Terphenyl-d14 (surr.)	1	%	-	-	-	110
Organochlorine Pesticides						
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	%	-	-	-	101
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	94
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1221	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1232	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1242	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1248	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1254	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1260	0.1	mg/kg	-	-	-	< 0.1
Total PCB*	0.1	mg/kg	-	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	-	101
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	94

Client Sample ID			SS02 0.5-0.6	SS07 0.9-1.0	SS13 0-0.1	SS16 0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-Oc04219**	**M18-Oc04222**	**M18-Oc04223**	**M18-Oc04224**
Date Sampled			**Sep 18, 2018**	**Sep 18, 2018**	**Sep 18, 2018**	**Sep 18, 2018**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	< 2	2.3	4.1	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	30	6.8	15	-
Copper	5	mg/kg	32	7.2	< 5	-
Lead	5	mg/kg	180	52	13	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	50	< 5	< 5	-
Zinc	5	mg/kg	41	180	< 5	-
% Moisture	1	%	5.9	15	8.4	5.3

Client Sample ID			SS30 0-0.1	SS32 0-0.1	SS34 0-0.1	SS37 0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-Oc04225**	**M18-Oc04226**	**M18-Oc04227**	**M18-Oc04228**
Date Sampled			**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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	78	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	200	78	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	278	78	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	96	101	108	94
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	240	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	240	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
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			SS30 0-0.1	SS32 0-0.1	SS34 0-0.1	SS37 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Oc04225	M18-Oc04226	M18-Oc04227	M18-Oc04228
Date Sampled			Sep 20, 2018	Sep 20, 2018	Sep 20, 2018	Sep 20, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(b&j)fluoranthene[N07]	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	%	-	117	-	68
p-Terphenyl-d14 (surr.)	1	%	-	126	-	66
Organochlorine Pesticides						
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
Dibutylchlorendate (surr.)	1	%	-	98	-	99
Tetrachloro-m-xylene (surr.)	1	%	-	73	-	96
Polychlorinated Biphenyls						
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

Client Sample ID			SS30 0-0.1	SS32 0-0.1	SS34 0-0.1	SS37 0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-Oc04225**	**M18-Oc04226**	**M18-Oc04227**	**M18-Oc04228**
Date Sampled			**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1260	0.1	mg/kg	-	< 0.1	-	< 0.1
Total PCB*	0.1	mg/kg	-	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	98	-	99
Tetrachloro-m-xylene (surr.)	1	%	-	73	-	96
Heavy Metals						
Arsenic	2	mg/kg	3.8	5.2	3.7	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	9.1	25	12	5.3
Copper	5	mg/kg	30	25	11	< 5
Lead	5	mg/kg	110	34	22	13
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	15	9.2	< 5
Zinc	5	mg/kg	350	100	40	6.7
% Moisture	1	%	9.0	11	7.2	5.9

Client Sample ID			SS39 0-0.1	SS40 0-0.1	SS41 0.2-0.3	SS44 0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-Oc04229**	**M18-Oc04230**	**M18-Oc04231**	**M18-Oc04232**
Date Sampled			**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**	**Sep 20, 2018**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	100	102	98	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	-

Client Sample ID			SS39 0-0.1	SS40 0-0.1	SS41 0.2-0.3	SS44 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Oc04229	M18-Oc04230	M18-Oc04231	M18-Oc04232
Date Sampled			Sep 20, 2018	Sep 20, 2018	Sep 20, 2018	Sep 20, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	119	95	90	-
p-Terphenyl-d14 (surr.)	1	%	120	94	93	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	103	89	-	102
Tetrachloro-m-xylene (surr.)	1	%	100	83	-	85

Client Sample ID			SS39 0-0.1	SS40 0-0.1	SS41 0.2-0.3	SS44 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Oc04229	M18-Oc04230	M18-Oc04231	M18-Oc04232
Date Sampled			Sep 20, 2018	Sep 20, 2018	Sep 20, 2018	Sep 20, 2018
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	103	89	-	102
Tetrachloro-m-xylene (surr.)	1	%	100	83	-	85
Heavy Metals						
Arsenic	2	mg/kg	-	8.4	-	-
Cadmium	0.4	mg/kg	-	< 0.4	-	-
Chromium	5	mg/kg	-	94	-	-
Copper	5	mg/kg	-	15	-	-
Lead	5	mg/kg	-	27	-	-
Mercury	0.1	mg/kg	-	< 0.1	-	-
Nickel	5	mg/kg	-	6.2	-	-
Zinc	5	mg/kg	-	37	-	-
% Moisture	1	%	6.9	13	6.0	8.7

Client Sample ID			SS47 0-0.1
Sample Matrix			Soil
Eurofins | mgt Sample No.			M18-Oc04233
Date Sampled			Sep 20, 2018
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	110
TRH C29-C36	50	mg/kg	120
TRH C10-36 (Total)	50	mg/kg	230
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	92
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	210

Client Sample ID			SS47 0-0.1
Sample Matrix			Soil
Eurofins | mgt Sample No.			M18-Oc04233
Date Sampled			Sep 20, 2018
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	210
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	1.6
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.8
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	2.1
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	0.9
Benz(a)anthracene	0.5	mg/kg	1.3
Benzo(a)pyrene	0.5	mg/kg	1.2
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	0.9
Benzo(g.h.i)perylene	0.5	mg/kg	0.6
Benzo(k)fluoranthene	0.5	mg/kg	1.1
Chrysene	0.5	mg/kg	1.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	3.3
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	1.9
Pyrene	0.5	mg/kg	3.5
Total PAH*	0.5	mg/kg	16.2
2-Fluorobiphenyl (surr.)	1	%	107
p-Terphenyl-d14 (surr.)	1	%	102
Organochlorine Pesticides			
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

Client Sample ID			SS47 0-0.1
Sample Matrix			**Soil**
Eurofins | mgt Sample No.			**M18-Oc04233**
Date Sampled			**Sep 20, 2018**
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
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	%	99
Tetrachloro-m-xylene (surr.)	1	%	77
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	99
Tetrachloro-m-xylene (surr.)	1	%	77
% Moisture	1	%	11

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 (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Oct 05, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 05, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 05, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Oct 05, 2018	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Polycyclic Aromatic Hydrocarbons	Melbourne	Oct 05, 2018	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Oct 05, 2018	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Oct 05, 2018	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Melbourne	Oct 05, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Oct 04, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

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Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 620797
Phone: 02 8245 0300
Fax:

Received: Oct 2, 2018 5:29 PM
Due: Oct 9, 2018
Priority: 5 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X							
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	SS02 0.5-0.6	Sep 18, 2018		Soil	M18-Oc04219					X		X	
2	SS03 0-0.1	Sep 18, 2018		Soil	M18-Oc04220	X							
3	SS05 0.5-0.6	Sep 18, 2018		Soil	M18-Oc04221	X							
4	SS07 0.9-1.0	Sep 18, 2018		Soil	M18-Oc04222					X		X	
5	SS13 0-0.1	Sep 18, 2018		Soil	M18-Oc04223					X		X	
6	SS16 0-0.1	Sep 18, 2018		Soil	M18-Oc04224		X	X	X		X	X	X
7	SS30 0-0.1	Sep 20, 2018		Soil	M18-Oc04225					X	X	X	X
8	SS32 0-0.1	Sep 20, 2018		Soil	M18-Oc04226		X	X	X	X	X	X	X
9	SS34 0-0.1	Sep 20, 2018		Soil	M18-Oc04227					X	X	X	X

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Project ID: 54933

Order No.:
Report #: 620797
Phone: 02 8245 0300
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Received: Oct 2, 2018 5:29 PM
Due: Oct 9, 2018
Priority: 5 Day
Contact Name: Claudia Bennett

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X							
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
10	SS37 0-0.1	Sep 20, 2018		Soil	M18-Oc04228		X	X	X	X	X	X	X
11	SS39 0-0.1	Sep 20, 2018		Soil	M18-Oc04229		X	X	X		X	X	X
12	SS40 0-0.1	Sep 20, 2018		Soil	M18-Oc04230		X	X	X	X	X	X	X
13	SS41 0.2-0.3	Sep 20, 2018		Soil	M18-Oc04231		X				X	X	X
14	SS44 0-0.1	Sep 20, 2018		Soil	M18-Oc04232			X	X			X	
15	SS47 0-0.1	Sep 20, 2018		Soil	M18-Oc04233		X	X	X		X	X	X
Test Counts						2	7	7	7	8	9	13	9

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil 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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
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	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

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	
Method Blank							
Polychlorinated Biphenyls							
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	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
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	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	120			70-130	Pass	
TRH C10-C14	%	83			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	74			70-130	Pass	
Toluene	%	110			70-130	Pass	
Ethylbenzene	%	117			70-130	Pass	
m&p-Xylenes	%	112			70-130	Pass	
Xylenes - Total	%	114			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	120			70-130	Pass	
TRH C6-C10	%	117			70-130	Pass	
TRH >C10-C16	%	88			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	100			70-130	Pass	
Acenaphthylene	%	98			70-130	Pass	
Anthracene	%	108			70-130	Pass	
Benz(a)anthracene	%	74			70-130	Pass	
Benzo(a)pyrene	%	87			70-130	Pass	
Benzo(b&j)fluoranthene	%	83			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(g.h.i)perylene	%	86			70-130	Pass	
Benzo(k)fluoranthene	%	110			70-130	Pass	
Chrysene	%	100			70-130	Pass	
Dibenz(a.h)anthracene	%	91			70-130	Pass	
Fluoranthene	%	102			70-130	Pass	
Fluorene	%	94			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	86			70-130	Pass	
Naphthalene	%	93			70-130	Pass	
Phenanthrene	%	98			70-130	Pass	
Pyrene	%	99			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	129			70-130	Pass	
4.4'-DDE	%	122			70-130	Pass	
4.4'-DDT	%	73			70-130	Pass	
a-BHC	%	89			70-130	Pass	
Aldrin	%	103			70-130	Pass	
b-BHC	%	93			70-130	Pass	
d-BHC	%	85			70-130	Pass	
Dieldrin	%	104			70-130	Pass	
Endosulfan I	%	96			70-130	Pass	
Endosulfan II	%	90			70-130	Pass	
Endosulfan sulphate	%	85			70-130	Pass	
Endrin	%	110			70-130	Pass	
Endrin aldehyde	%	106			70-130	Pass	
Endrin ketone	%	100			70-130	Pass	
g-BHC (Lindane)	%	86			70-130	Pass	
Heptachlor	%	91			70-130	Pass	
Heptachlor epoxide	%	98			70-130	Pass	
Hexachlorobenzene	%	94			70-130	Pass	
Methoxychlor	%	80			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	90			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	110			80-120	Pass	
Cadmium	%	99			80-120	Pass	
Chromium	%	113			80-120	Pass	
Copper	%	112			80-120	Pass	
Lead	%	112			80-120	Pass	
Mercury	%	112			75-125	Pass	
Nickel	%	114			80-120	Pass	
Zinc	%	114			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	Z18-Oc04309	NCP	%	94			70-130	Pass	
TRH C10-C14	M18-Oc05129	NCP	%	90			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	Z18-Oc04309	NCP	%	76			70-130	Pass	
Toluene	Z18-Oc04309	NCP	%	83			70-130	Pass	
Ethylbenzene	Z18-Oc04309	NCP	%	97			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
m&p-Xylenes	Z18-Oc04309	NCP	%	92			70-130	Pass	
o-Xylene	Z18-Oc04309	NCP	%	99			70-130	Pass	
Xylenes - Total	Z18-Oc04309	NCP	%	94			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	Z18-Oc04309	NCP	%	117			70-130	Pass	
TRH C6-C10	Z18-Oc04309	NCP	%	93			70-130	Pass	
TRH >C10-C16	M18-Oc05129	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S18-Oc01647	NCP	%	83			70-130	Pass	
Acenaphthylene	S18-Oc01647	NCP	%	79			70-130	Pass	
Anthracene	S18-Oc01647	NCP	%	79			70-130	Pass	
Benz(a)anthracene	S18-Oc01647	NCP	%	77			70-130	Pass	
Benzo(a)pyrene	S18-Oc01647	NCP	%	94			70-130	Pass	
Benzo(b&j)fluoranthene	S18-Oc01647	NCP	%	89			70-130	Pass	
Benzo(g.h.i)perylene	S18-Oc01647	NCP	%	87			70-130	Pass	
Benzo(k)fluoranthene	S18-Oc01647	NCP	%	128			70-130	Pass	
Chrysene	S18-Oc01647	NCP	%	103			70-130	Pass	
Dibenz(a.h)anthracene	S18-Oc01647	NCP	%	88			70-130	Pass	
Fluoranthene	S18-Oc01647	NCP	%	99			70-130	Pass	
Fluorene	S18-Oc01647	NCP	%	74			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S18-Oc01647	NCP	%	85			70-130	Pass	
Naphthalene	S18-Oc01647	NCP	%	81			70-130	Pass	
Phenanthrene	S18-Oc01647	NCP	%	75			70-130	Pass	
Pyrene	S18-Oc01647	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M18-Oc02652	NCP	%	126			70-130	Pass	
4.4'-DDE	M18-Oc02652	NCP	%	128			70-130	Pass	
4.4'-DDT	M18-Oc02652	NCP	%	82			70-130	Pass	
a-BHC	M18-Oc02652	NCP	%	96			70-130	Pass	
Aldrin	M18-Oc02652	NCP	%	115			70-130	Pass	
b-BHC	M18-Oc02652	NCP	%	97			70-130	Pass	
d-BHC	M18-Oc02652	NCP	%	93			70-130	Pass	
Dieldrin	M18-Oc02652	NCP	%	112			70-130	Pass	
Endosulfan I	M18-Oc02652	NCP	%	112			70-130	Pass	
Endosulfan II	M18-Oc02652	NCP	%	111			70-130	Pass	
Endosulfan sulphate	M18-Oc02652	NCP	%	106			70-130	Pass	
Endrin	M18-Oc02652	NCP	%	118			70-130	Pass	
Endrin aldehyde	M18-Oc02652	NCP	%	115			70-130	Pass	
Endrin ketone	M18-Oc02652	NCP	%	107			70-130	Pass	
g-BHC (Lindane)	M18-Oc02652	NCP	%	107			70-130	Pass	
Heptachlor	M18-Oc02652	NCP	%	104			70-130	Pass	
Heptachlor epoxide	M18-Oc02652	NCP	%	106			70-130	Pass	
Hexachlorobenzene	M18-Oc02652	NCP	%	100			70-130	Pass	
Methoxychlor	M18-Oc02652	NCP	%	88			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	M18-Oc02648	NCP	%	92			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M18-Oc00559	NCP	%	112			75-125	Pass	
Cadmium	M18-Oc04743	NCP	%	107			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium	M18-Oc04743	NCP	%	79			75-125	Pass	
Copper	M18-Oc04743	NCP	%	77			75-125	Pass	
Lead	M18-Oc00559	NCP	%	96			75-125	Pass	
Mercury	M18-Se35452	NCP	%	98			70-130	Pass	
Nickel	M18-Oc04743	NCP	%	70			75-125	Fail	Q08
Zinc	M18-Oc04743	NCP	%	100			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	Z18-Oc04308	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M18-Oc04386	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M18-Oc04386	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M18-Oc04386	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	Z18-Oc04308	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	Z18-Oc04308	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	Z18-Oc04308	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	Z18-Oc04308	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	Z18-Oc04308	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	Z18-Oc04308	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	Z18-Oc04308	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	Z18-Oc04308	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M18-Oc04386	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M18-Oc04386	NCP	mg/kg	< 100		<1	30%	Pass	
TRH >C34-C40	M18-Oc04386	NCP	mg/kg	< 100		<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M18-Oc05349	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M18-Oc04224	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
b-BHC	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M18-Oc04224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M18-Oc04224	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M18-Oc04224	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	M18-Oc04224	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	M18-Oc04224	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	M18-Oc04224	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	M18-Oc04224	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	M18-Oc04224	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M18-Oc04224	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	M18-Oc04224	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-Oc01528	NCP	mg/kg	2.0	2.5	20	30%	Pass	
Cadmium	M18-Oc01528	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M18-Oc01528	NCP	mg/kg	35	38	7.0	30%	Pass	
Copper	M18-Oc01528	NCP	mg/kg	32	29	12	30%	Pass	
Lead	M18-Oc01528	NCP	mg/kg	7.4	9.1	20	30%	Pass	
Mercury	M18-Oc01528	NCP	mg/kg	0.8	0.6	23	30%	Pass	
Nickel	M18-Oc01528	NCP	mg/kg	17	14	15	30%	Pass	
Zinc	M18-Oc01528	NCP	mg/kg	5.5	< 5	12	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M18-Oc04228	CP	%	5.9	6.0	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
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

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)

Glenn Jackson

National Operations 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.

Vic

Alena Bounkeua
Thursday, 11 October 2018 5:13 PM
Enviro Sample Vic; Nibha Vaidya; Tony Wong
RE: Urgent 1 DAY TAT - FW: Eurofins | mgt Test Results - Report 620797 : Site PEAT ISLAND (54933)

Attachments: image001.png; image002.jpg

Hi Guys,

D.S 19/09

Please see below:

- SS22 0-0.1 is likely called SS-22_0-0.1 Report: 619070 Se30086 HOLD 147
- SS28 0-0.1 is likely called SS-28_0-0.1 Report: 619070 Se30098 HOLD 147
- SS28 0.2-0.3 is likely called SS-28_0.2-0.3 Report: 619070 Se30099 - HOLD 147
- SS61 0.2-0.3 is likely called SS-61_0.2-0.3 Report: 620448, this sample is on the COC but I don't see it logged in the report and nothing in SRA either - OC0742 - 41309
- GW03 1.9-2.0 is likely called GW-03_1.9-2.0 Report: 619071 Se30058 - HOLD 146
- GW03 3.4-3.5 is likely called GW-03_3.4-.3.5 Report: 619071 Se30051 - 41179
- GW05 0.4-0.5 is likely called GW-05_0.4-0.5 Report 619071 Se30049 - 41179

Thanks!

Received: D JONES

Report: 622153

Warm Regards,

Alena Bounkeua
Eurofins | mgt
Phone: (02) 9900 8414
Email: AlenaBounkeua@eurofins.com

From: Enviro Sample Vic
Sent: Thursday, 11 October 2018 5:04 PM
To: Nibha Vaidya; Tony Wong
Cc: Alena Bounkeua
Subject: RE: Urgent 1 DAY TAT - FW: Eurofins | mgt Test Results - Report 620797 : Site PEAT ISLAND (54933)

Hi Nhiba,

We tried calling you but went to voicemail.

We spoke to Alena regarding the first report, 620797.

She can explain the situation to you

Thanks,
Canh

Enviro Sample VIC
Phone: +61 3 8564 5043
Email: EnviroSampleVic@eurofins.com

SS03 0-0.1 – Asbestos (NEPM) Se 25591 – Hold.

SS05 0.5-0.6 – Asbestos (NEPM) Se25593 – Hold.

SS07 0.9-1.0 – Metals (8) Se25599 – Hold.

SS13 0-0.1 – Metals (8) Se25605 – Hold

SS16 0-0.1 – TRH/BTEX, PAH, OCP/PCB Se 25588 – G1122.

SS22 0-0.1 – Metals (8), TRH/BTEX, OCP/PCB No sample with this ID.

SS28 0-0.1 – Metals (8) No sample with this ID.

SS28 0.2-0.3 – Metals (8), TRH/BTEX, PAH " "

SS30 0-0.1 – Metals (8), TRH/BTEX Se 28435 – G1178

SS32 0-0.1 – Metals (8), TRH/BTEX, PAH, OCP/PCB Se28436 – G1178.

SS34 0-0.1 – Metals (8), TRH/BTEX Se28419 – G1178.

SS37 0-0.1 – Metals (8), TRH/BTEX, PAH, OCP/PCB Se28565 – Hold.

SS39 0-0.1 – TRH/BTEX, PAH, OCP/PCB Se28602 – Hold

SS40 0-0.1 – Metals (8), TRH/BTEX, PAH, OCP/PCB Se28438 – G1178.

SS41 0.2-0.3 – TRH/BTEX, PAH Se28420 – G1178

SS44 0-0.1 – OCP/PCB Se28423 – G1178

SS47 0-0.1 – TRH/BTEX, PAH, OCP/PCB Se28427 – G1178

SS61 0.2-0.3 – pH, % clay, CEC No sample with this ID.

GW03 1.9-2.0 – Metals (8), TRH/BTEX " "

GW03 3.4-3.5 – Metals (8), TRH/BTEX, PAH " "

GW05 0.4-0.5 – Metals (8), TRH/BTEX, PAH " "

114

145

146

Thanks and kind regards.

Claudia

Get Outlook for iOS

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
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Site # 1254 & 14271

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Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Scott Burrows
Project name: PEAT ISLAND
Project ID: 54933
COC number: Not provided
Turn around time: 3 Day
Date/Time received: Oct 11, 2018 5:13 PM
Eurofins | mgt reference: **622153**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☒ 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:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Scott Burrows - SBurrows@jbsg.com.au.

Note: A copy of these results will also be delivered to the general JBS & G Australia (NSW) P/L email address.

eurofins | mgt

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Melbourne
2-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 622153
Phone: 02 8245 0300
Fax:

Received: Oct 11, 2018 5:13 PM
Due: Oct 16, 2018
Priority: 3 Day
Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217															
Brisbane Laboratory - NATA Site # 20794						X									
Perth Laboratory - NATA Site # 23736															
External Laboratory															
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
1	SS22 0-0.1	Not Provided		Soil	M18-Oc14106				X	X	X	X	X		X
2	SS28 0-0.1	Not Provided		Soil	M18-Oc14107						X		X		
3	SS28 0.2-0.3	Not Provided		Soil	M18-Oc14108			X			X	X	X		X
4	SS61 0.2-0.3	Not Provided		Soil	M18-Oc14109	X	X						X	X	
5	GW03 1.9-2.0	Not Provided		Soil	M18-Oc14110						X	X	X		X
6	GW03 3.4-3.5	Not Provided		Soil	M18-Oc14111			X			X	X	X		X
7	GW05 0.4-0.5	Not Provided		Soil	M18-Oc14112			X			X	X	X		X
Test Counts						1	1	3	1	1	6	5	7	1	5

Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
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: **Scott Burrows**

Report **622153-S**
Project name PEAT ISLAND
Project ID 54933
Received Date Oct 11, 2018

Client Sample ID			**SS22 0-0.1**	**SS28 0-0.1**	**SS28 0.2-0.3**	**SS61 0.2-0.3**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-Oc14106**	**M18-Oc14107**	**M18-Oc14108**	**M18-Oc14109**
Date Sampled			**Not Provided**	**Not Provided**	**Not Provided**	**Not Provided**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	< 50	-	< 50	-
BTEX						
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	%	74	-	68	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	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	-
Polycyclic Aromatic Hydrocarbons						
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[N07]	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	-

Client Sample ID			SS22 0-0.1	SS28 0-0.1	SS28 0.2-0.3	SS61 0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Oc14106	M18-Oc14107	M18-Oc14108	M18-Oc14109
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	-	-	116	-
p-Terphenyl-d14 (surr.)	1	%	-	-	134	-
Organochlorine Pesticides						
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	%	111	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	99	-	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	111	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	99	-	-	-

Client Sample ID			SS22 0-0.1	SS28 0-0.1	SS28 0.2-0.3	SS61 0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Oc14106	M18-Oc14107	M18-Oc14108	M18-Oc14109
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
% Clay	1	%	-	-	-	8.8
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	-	21
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	-	6.9
% Moisture	1	%	8.4	9.2	8.5	8.1
Heavy Metals						
Arsenic	2	mg/kg	4.3	5.5	2.5	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	13	11	6.2	-
Copper	5	mg/kg	< 5	15	< 5	-
Lead	5	mg/kg	12	110	12	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	< 5	11	< 5	-
Zinc	5	mg/kg	< 5	37	9.5	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	-	-	2.1

Client Sample ID			GW03 1.9-2.0	GW03 3.4-3.5	GW05 0.4-0.5
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			M18-Oc14110	M18-Oc14111	M18-Oc14112
Date Sampled			Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
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 C10-36 (Total)	50	mg/kg	< 50	< 50	< 50
BTEX					
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	90	75	69
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	GW03 1.9-2.0 Soil M18-Oc14110 Not Provided	GW03 3.4-3.5 Soil M18-Oc14111 Not Provided	GW05 0.4-0.5 Soil M18-Oc14112 Not Provided
Polycyclic Aromatic Hydrocarbons					
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[N07]	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	%	-	98	119
p-Terphenyl-d14 (surr.)	1	%	-	106	128
% Moisture	1	%	11	12	9.9
Heavy Metals					
Arsenic	2	mg/kg	2.8	3.8	7.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	30	23	8.2
Copper	5	mg/kg	5.8	7.4	40
Lead	5	mg/kg	21	29	76
Mercury	0.1	mg/kg	< 0.1	< 0.1	0.2
Nickel	5	mg/kg	< 5	< 5	< 5
Zinc	5	mg/kg	7.8	15	140

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 (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Oct 11, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 11, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 11, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Oct 11, 2018	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Polycyclic Aromatic Hydrocarbons	Melbourne	Oct 11, 2018	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Oct 11, 2018	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Oct 11, 2018	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Clay	Brisbane	Oct 15, 2018	6 Day
- Method: LTM-GEN-7040			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Oct 11, 2018	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals M8	Melbourne	Oct 11, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Melbourne	Oct 11, 2018	7 Day
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Oct 12, 2018	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
% Moisture	Melbourne	Oct 11, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

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NSW 2000

Project Name: PEAT ISLAND
Project ID: 54933

Order No.:
Report #: 622153
Phone: 02 8245 0300
Fax:

Received: Oct 11, 2018 5:13 PM
Due: Oct 16, 2018
Priority: 3 Day
Contact Name: Scott Burrows

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217															
Brisbane Laboratory - NATA Site # 20794						X									
Perth Laboratory - NATA Site # 23736															
External Laboratory															
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
1	SS22 0-0.1	Not Provided		Soil	M18-Oc14106				X	X	X	X	X		X
2	SS28 0-0.1	Not Provided		Soil	M18-Oc14107						X		X		
3	SS28 0.2-0.3	Not Provided		Soil	M18-Oc14108			X			X	X	X		X
4	SS61 0.2-0.3	Not Provided		Soil	M18-Oc14109	X	X						X	X	
5	GW03 1.9-2.0	Not Provided		Soil	M18-Oc14110						X	X	X		X
6	GW03 3.4-3.5	Not Provided		Soil	M18-Oc14111			X			X	X	X		X
7	GW05 0.4-0.5	Not Provided		Soil	M18-Oc14112			X			X	X	X		X
Test Counts						1	1	3	1	1	6	5	7	1	5

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil 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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
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	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

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	
Method Blank							
Polychlorinated Biphenyls							
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	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
% Clay	%	< 1			1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
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	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	108			70-130	Pass	
TRH C10-C14	%	105			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	107			70-130	Pass	
Toluene	%	89			70-130	Pass	
Ethylbenzene	%	97			70-130	Pass	
m&p-Xylenes	%	92			70-130	Pass	
Xylenes - Total	%	93			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	107			70-130	Pass	
TRH C6-C10	%	94			70-130	Pass	
TRH >C10-C16	%	123			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	114			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acenaphthylene	%	115			70-130	Pass	
Anthracene	%	108			70-130	Pass	
Benz(a)anthracene	%	110			70-130	Pass	
Benzo(a)pyrene	%	103			70-130	Pass	
Benzo(b&j)fluoranthene	%	96			70-130	Pass	
Benzo(g.h.i)perylene	%	95			70-130	Pass	
Benzo(k)fluoranthene	%	94			70-130	Pass	
Chrysene	%	102			70-130	Pass	
Dibenz(a.h)anthracene	%	73			70-130	Pass	
Fluoranthene	%	104			70-130	Pass	
Fluorene	%	113			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	98			70-130	Pass	
Naphthalene	%	110			70-130	Pass	
Phenanthrene	%	112			70-130	Pass	
Pyrene	%	105			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	104			70-130	Pass	
4.4'-DDE	%	115			70-130	Pass	
4.4'-DDT	%	130			70-130	Pass	
a-BHC	%	110			70-130	Pass	
Aldrin	%	120			70-130	Pass	
b-BHC	%	97			70-130	Pass	
d-BHC	%	93			70-130	Pass	
Dieldrin	%	117			70-130	Pass	
Endosulfan I	%	113			70-130	Pass	
Endosulfan II	%	104			70-130	Pass	
Endosulfan sulphate	%	108			70-130	Pass	
Endrin	%	118			70-130	Pass	
Endrin aldehyde	%	114			70-130	Pass	
Endrin ketone	%	115			70-130	Pass	
g-BHC (Lindane)	%	110			70-130	Pass	
Heptachlor	%	115			70-130	Pass	
Heptachlor epoxide	%	113			70-130	Pass	
Hexachlorobenzene	%	105			70-130	Pass	
Methoxychlor	%	120			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	96			70-130	Pass	
LCS - % Recovery							
% Clay	%	100			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	88			80-120	Pass	
Cadmium	%	88			80-120	Pass	
Chromium	%	96			80-120	Pass	
Copper	%	97			80-120	Pass	
Lead	%	94			80-120	Pass	
Mercury	%	97			75-125	Pass	
Nickel	%	95			80-120	Pass	
Zinc	%	87			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M18-Oc10399	NCP	%	116			70-130	Pass	
4.4'-DDE	M18-Oc10399	NCP	%	114			70-130	Pass	
4.4'-DDT	M18-Oc10399	NCP	%	80			70-130	Pass	
a-BHC	M18-Oc10399	NCP	%	98			70-130	Pass	
Aldrin	M18-Oc10399	NCP	%	113			70-130	Pass	
b-BHC	M18-Oc10399	NCP	%	94			70-130	Pass	
d-BHC	M18-Oc10399	NCP	%	90			70-130	Pass	
Dieldrin	M18-Oc10399	NCP	%	104			70-130	Pass	
Endosulfan I	M18-Oc10399	NCP	%	103			70-130	Pass	
Endosulfan II	M18-Oc10399	NCP	%	97			70-130	Pass	
Endosulfan sulphate	M18-Oc10399	NCP	%	98			70-130	Pass	
Endrin	M18-Oc10399	NCP	%	108			70-130	Pass	
Endrin aldehyde	M18-Oc10399	NCP	%	93			70-130	Pass	
Endrin ketone	M18-Oc10399	NCP	%	101			70-130	Pass	
g-BHC (Lindane)	M18-Oc10399	NCP	%	102			70-130	Pass	
Heptachlor	M18-Oc10399	NCP	%	100			70-130	Pass	
Heptachlor epoxide	M18-Oc10399	NCP	%	102			70-130	Pass	
Hexachlorobenzene	M18-Oc10399	NCP	%	97			70-130	Pass	
Methoxychlor	M18-Oc10399	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	M18-Oc02648	NCP	%	92			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Lead	M18-Oc08674	NCP	%	89			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M18-Oc14107	CP	%	105			75-125	Pass	
Cadmium	M18-Oc14107	CP	%	103			75-125	Pass	
Chromium	M18-Oc14107	CP	%	107			75-125	Pass	
Copper	M18-Oc14107	CP	%	112			75-125	Pass	
Mercury	M18-Oc14107	CP	%	98			70-130	Pass	
Nickel	M18-Oc14107	CP	%	99			75-125	Pass	
Zinc	M18-Oc14107	CP	%	93			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S18-Oc09344	NCP	%	109			70-130	Pass	
Acenaphthylene	S18-Oc09344	NCP	%	114			70-130	Pass	
Anthracene	S18-Oc09344	NCP	%	102			70-130	Pass	
Benz(a)anthracene	S18-Oc09344	NCP	%	112			70-130	Pass	
Benzo(a)pyrene	S18-Oc09344	NCP	%	98			70-130	Pass	
Benzo(b&j)fluoranthene	S18-Oc09344	NCP	%	97			70-130	Pass	
Benzo(g.h.i)perylene	S18-Oc09344	NCP	%	120			70-130	Pass	
Benzo(k)fluoranthene	S18-Oc09344	NCP	%	86			70-130	Pass	
Chrysene	S18-Oc09344	NCP	%	96			70-130	Pass	
Dibenz(a.h)anthracene	S18-Oc09344	NCP	%	91			70-130	Pass	
Fluoranthene	S18-Oc09344	NCP	%	109			70-130	Pass	
Fluorene	S18-Oc09344	NCP	%	111			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S18-Oc09344	NCP	%	123			70-130	Pass	
Naphthalene	S18-Oc09344	NCP	%	106			70-130	Pass	
Phenanthrene	S18-Oc09344	NCP	%	104			70-130	Pass	
Pyrene	S18-Oc09344	NCP	%	109			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M18-Oc14110	CP	%	125			70-130	Pass	
TRH C10-C14	M18-Oc14110	CP	%	103			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M18-Oc14110	CP	%	124			70-130	Pass	
Toluene	M18-Oc14110	CP	%	104			70-130	Pass	
Ethylbenzene	M18-Oc14110	CP	%	105			70-130	Pass	
m&p-Xylenes	M18-Oc14110	CP	%	102			70-130	Pass	
o-Xylene	M18-Oc14110	CP	%	101			70-130	Pass	
Xylenes - Total	M18-Oc14110	CP	%	102			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M18-Oc14110	CP	%	104			70-130	Pass	
TRH C6-C10	M18-Oc14110	CP	%	126			70-130	Pass	
TRH >C10-C16	M18-Oc14110	CP	%	119			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M18-Oc10398	NCP	mg/kg	0.9	0.7	22	30%	Pass	
4.4'-DDD	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M18-Oc10398	NCP	mg/kg	0.23	0.22	7.0	30%	Pass	
Endosulfan I	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M18-Oc10398	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M18-Oc10398	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M18-Oc13259	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	M18-Oc13259	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	M18-Oc13259	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	M18-Oc13259	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	M18-Oc13259	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	M18-Oc13259	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M18-Oc13259	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	M18-Oc13259	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-Oc14106	CP	mg/kg	4.3	2.2	64	30%	Fail	Q15
Cadmium	M18-Oc14106	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M18-Oc14106	CP	mg/kg	13	10	21	30%	Pass	
Copper	M18-Oc14106	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	M18-Oc14106	CP	mg/kg	12	7.7	44	30%	Fail	Q15
Mercury	M18-Oc14106	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M18-Oc14106	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	M18-Oc14106	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-Oc14107	CP	mg/kg	5.5	5.9	6.0	30%	Pass	
Cadmium	M18-Oc14107	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M18-Oc14107	CP	mg/kg	11	11	1.0	30%	Pass	
Copper	M18-Oc14107	CP	mg/kg	15	15	1.0	30%	Pass	
Mercury	M18-Oc14107	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M18-Oc14107	CP	mg/kg	11	11	<1	30%	Pass	
Zinc	M18-Oc14107	CP	mg/kg	37	39	7.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M18-Oc14108	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M18-Oc14108	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M18-Oc14108	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M18-Oc14108	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M18-Oc14108	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M18-Oc14108	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M18-Oc14108	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M18-Oc14108	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M18-Oc14108	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	M18-Oc14108	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M18-Oc14108	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M18-Oc14108	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M18-Oc14108	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M18-Oc14108	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M18-Oc14108	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Phenanthrene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M18-Oc10824	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Clay	M18-Oc01004	NCP	%	< 1	< 1	<1	30%	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)	M18-Oc12370	NCP	uS/cm	650	610	6.7	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	M18-Oc12370	NCP	pH Units	8.2	8.1	pass	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M18-Oc14111	CP	%	12	12	6.0	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 | mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)
Julie Kay	Senior Analyst-Inorganic (VIC)

Glenn Jackson

National Operations 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.

Appendix G Field Sheets

Glass NW Servo.

Groundwater Sampling Form
FIELD RECORD SHEETS

JBS&G

Project name: Peet Island	**Location:** Service Station	**Well ID:** MW01
Project number: 54933		
Person sampling: SC/CB/RG/RL	**Sampling Date:**	**Weather:** Fine

Casing Diameter (mm):		**Depth to NAPL (mBTOC):**	
Well Completion:	Flush Mount / Monument	**Depth to SWL (mBTOC):**	6.616
Well Cap Type:	Locking Cap / PVC / Other	**NAPL Thickness (m):**	
Well Condition:	Good / Compromised (see notes)	**Depth to EoH (mbtoc):**	10.145
Calculated Well Volume (L):		**Water Column Depth (m):**	
Sampling Method:	Purge Volume: 4 Casings Vol. (L):	**NAPL Visually Verified?**	
	Low Flow: Pump Submersion depth (mBTOC):		

Time	Volume Purged	Dissolved Oxygen	Temp.	pH	EC	ORP	Comments
	L	% mgL/ppm ☐ ☒	°C	pH units	S/cm	mV	include SWL for low flow (mBTOC)
12.50	0.5	7.8	22.3	3.97	455.1	116.8	turbide.
12.52	1.0	3.5	21.7	3.98	451.6	122.8	"
12.54	1.5	2.9	21.7	3.95	450.1	123.9	"
12.56	2.0	2.8	21.7	3.94	449.1	124.2	"
12.58	2.5	2.8	21.6	3.93	448.4	123.5	"
N:00	3.0	3.0	21.6	3.90	448.5	122.2	"
Acceptable Variation*		+/-10%	+/- 0.2 °C	+/-0.1 pH	+/-5%	+/-10mV	**Results Acceptable: YES / NO**

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:		**Sheen:**	YES / NO
Colour:	Slightly turbid.	**Odour:**	YES / NO

		No.	Container / Preservative
Primary sample ID:	MW01		
Duplicate sample:	YES / NO ID:		
Triplicate sample:	YES / NO ID:		
Rinsate sample:	YES / NO ID:		
Sample on ice:	YES / NO		
Field Filter Method:	0.45µm Filter / Not Filtered		
Water Quality Meter:			
Guaging Equipment:			
Pump Type:			

Notes:

Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)

Casing Diameter	25mm	50mm	100mm	150mm	300mm
Conversion Factor	0.98	1.96	7.85	49.1	196.3

Volume of water in well (L) = π * radius of gravel pack $(m)^2$ * height of water column (m)

*SA EPA Guidelines (June 2007) as referenced in NEPM

W Servo - bowser area

Groundwater Sampling Form
FIELD RECORD SHEETS

JBS&G

Project name: Penrhyn Island	**Location:** Four Seasons Station	**Well ID:** MW-02
Project number: 59933		
Person sampling: JC	**Sampling Date:** 28.9.18	**Weather:**

Casing Diameter (mm):		**Depth to NAPL (mBTOC):**	
Well Completion:	Flush Mount / Monument	**Depth to SWL (mBTOC):**	5.546
Well Cap Type:	Locking Cap / PVC / Other	**NAPL Thickness (m):**	
Well Condition:	Good / Compromised (see notes)	**Depth to EoH (mbtoc):**	9.324
Calculated Well Volume (L):		**Water Column Depth (m):**	~3.7m
Sampling Method:	Purge Volume: 4 Casings Vol. (L):	**NAPL Visually Verified?**	
	Low Flow: Pump Submersion depth (mBTOC):		

Time	Volume Purged	Dissolved Oxygen	Temp.	pH	EC	ORP	Comments
	L	% ☐ mgL/ppm ☒	°C	pH units	µS/cm	mV	include SWL for low flow (mBTOC)
12:28	0.5	0.85	22.0	3.96	420.7	92.7	clear.
12:29	1.0	0.44	21.4	4.03	416.3	70.8	
12:31	1.5	0.33	21.2	4.05	414.1	56.6	
12:33	2.0	0.29	21.2	4.05	413.7	45.2	
12:35	2.5	0.25	21.2	4.05	414.4	43.0	
12:36	3.0	0.24	21.2	4.05	414.9	41.6	
	3.5	0.26	21.2	4.05	415.7	42.0	
Acceptable Variation*		+/-10%	+/- 0.2 °C	+/-0.1 pH	+/-5%	+/-10mV	**Results Acceptable: YES / NO**

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:	Slight turbidity	**Sheen:**	YES / NO
Colour:		**Odour:**	YES / NO

		No.	Container / Preservative
Primary sample ID:	MW02		
Duplicate sample:	YES / NO ID:		
Triplicate sample:	YES / NO ID:		
Rinsate sample:	YES / NO ID:		
Sample on ice:	YES / NO		
Field Filter Method:	0.45µm Filter / Not Filtered		
Water Quality Meter:			
Guaging Equipment:			
Pump Type:			

Notes:

Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)

Casing Diameter	25mm	50mm	100mm	150mm	300mm
Conversion Factor	0.98	1.96	7.85	49.1	196.3

Volume of water in well (L) = π * radius of gravel pack $(m)^2$ * height of water column (m)

*SA EPA Guidelines (June 2007) as referenced in NEPM

Roadside Servo

Groundwater Sampling Form
FIELD RECORD SHEETS

Project name:	Peat Island	**Location:**	**Well ID:** RLW ~~GW~~
Project number:	51933	Service Station North West.	MW_03
Person sampling:	RL RA JC	**Sampling Date:** 28.9.18	**Weather:**

Casing Diameter (mm):		**Depth to NAPL (mBTOC):**	
Well Completion:	(Flush Mount / Monument)	**Depth to SWL (mBTOC):**	5.673
Well Cap Type:	(Locking Cap / PVC / Other)	**NAPL Thickness (m):**	
Well Condition:	(Good / Compromised (see notes))	**Depth to EoH (mbtoc):**	9.074
Calculated Well Volume (L):		**Water Column Depth (m):**	3.401
Sampling Method:	Purge Volume: 4 Casings Vol. (L):	**NAPL Visually Verified?**	
	Low Flow: Pump Submersion depth (mBTOC):		

Time	Volume Purged	Dissolved Oxygen	Temp.	pH	EC	ORP	Comments
	L	% ☐ mgL/ppm ☒	°C	pH units	__S/cm	mV	include SWL for low flow (mBTOC)
12:04	0.5	1.36	19.8	3.74	380.6	139.5	clear.
12:05	1.0	1.04	19.2	3.69	379.5	145.1	
12:06	1.5	0.77	19.1	3.64	377.2	153.0	
12:07	2.0	0.69	19.1	3.60	377.8	151.2	
12:08	2.5	0.63	19.1	3.56	386.8	145.6	
12:10	3.0	0.56	19.1	3.54	406.3	140.4	
12:11	3.5	0.60	19.1	3.52	407.2	140.1	
12:12	4.0	0.61	19.0	3.54	392.6	139.4	
12:14	4.5	0.59	19.0	3.54	396.7	127.6	
12:15	5.0	0.59	19.0	3.54	398.7	126.2	
Acceptable Variation*		+/-10%	+/- 0.2 °C	+/-0.1 pH	+/-5%	+/-10mV	**Results Acceptable:** (YES) / NO

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:	clear.	**Sheen:**	YES / (NO)
Colour:		**Odour:**	YES / (NO)

Primary sample ID:	MW03	**No.**	**Container / Preservative**
Duplicate sample:	YES / (NO) ID:		
Triplicate sample:	YES / (NO) ID:		
Rinsate sample:	YES / NO ID:		
Sample on ice:	YES / NO		
Field Filter Method:	0.45µm Filter / Not Filtered		
Water Quality Meter:			
Guaging Equipment:			
Pump Type:			

Notes:

Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)

Casing Diameter	25mm	50mm	100mm	150mm	300mm
Conversion Factor	0.98	1.96	7.85	49.1	196.3

Volume of water in well (L) = π * radius of gravel pack $(m)^2$ * height of water column (m)

*SA EPA Guidelines (June 2007) as referenced in NEPM

Groundwater Sampling Form
FIELD RECORD SHEETS

JBS&G

Project name: Port Island	**Location:** SW laundry	**Well ID:** GW-01	
Project number: 54933			
Person sampling: RL/JC	**Sampling Date:** 28.9.18	**Weather:** Fine	

Casing Diameter (mm):		**Depth to NAPL (mBTOC):**	
Well Completion:	Flush Mount / Monument	**Depth to SWL (mBTOC):**	1.752
Well Cap Type:	Locking Cap / PVC / Other	**NAPL Thickness (m):**	
Well Condition:	Good / Compromised (see notes)	**Depth to EoH (mbtoc):**	2.783
Calculated Well Volume (L):		**Water Column Depth (m):**	
Sampling Method:	Purge Volume: 4 Casings Vol. (L):	**NAPL Visually Verified?**	
	Low Flow: Pump Submersion depth (mBTOC):		

Time	Volume Purged	Dissolved Oxygen	Temp.	pH	EC	ORP	Comments
	L	% ☐ mgL/ppm ☑	°C	pH units	__S/cm	mV	include SWL for low flow (mBTOC)
	0.5	~~1.94~~ 1.44	20.9	5.72	894	-2.2	clear
	1.0	1.24	19.9	5.59	832	-14.0	
	1.5	1.39	19.9	5.59	797	-18.0	
	2.0	1.38	19.8	5.60	774	-22.9	
	2.5	1.33	19.8	5.59	766	-25.1	
	3.0	1.28	19.7	5.58	760	-29.3	
Acceptable Variation*		+/-10%	+/- 0.2 °C	+/-0.1 pH	+/-5%	+/-10mV	**Results Acceptable: YES / NO**

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:	clear	**Sheen:**	YES / (NO)
Colour:		**Odour:**	YES / (NO)

Primary sample ID:	GW01			**No.**	**Container / Preservative**
Duplicate sample:	(YES) / NO	ID:	QA 20180928 01		
Triplicate sample:	(YES) / NO	ID:			
Rinsate sample:	YES / (NO)	ID:			
Sample on ice:	(YES) / NO				
Field Filter Method:	0.45µm Filter / (Not Filtered)				
Water Quality Meter:					
Guaging Equipment:					
Pump Type:					

Notes: QA taken at this well

QA20180928_01

Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)

Casing Diameter	25mm	50mm	100mm	150mm	300mm
Conversion Factor	0.98	1.96	7.85	49.1	196.3

Volume of water in well (L) = π * radius of gravel pack $(m)^2$ * height of water column (m)

*SA EPA Guidelines (June 2007) as referenced in NEPM

Groundwater Sampling Form
FIELD RECORD SHEETS

Project name:	59933	**Location:** NE laundry	**Well ID:** GW02
Project number:	Peat Island		
Person sampling:	JC/RL	**Sampling Date:** 28.9.18	**Weather:** Fine.

Casing Diameter (mm):		**Depth to NAPL (mBTOC):**	
Well Completion:	Flush Mount / Monument	**Depth to SWL (mBTOC):**	3.214
Well Cap Type:	Locking Cap / PVC / Other	**NAPL Thickness (m):**	
Well Condition:	Good / Compromised (see notes)	**Depth to EoH (mbtoc):**	4.882
Calculated Well Volume (L):		**Water Column Depth (m):**	
Sampling Method:	Purge Volume: 4 Casings Vol. (L):	**NAPL Visually Verified?**	
	Low Flow: Pump Submersion depth (mBTOC):		

Time	Volume Purged	Dissolved Oxygen	Temp.	pH	EC	ORP	Comments
	L	% ☐ mgL/ppm ☐	°C	pH units	__S/cm	mV	include SWL for low flow (mBTOC)
1.20	0.5	4.78	18.9	4.64	300.3	82.5	Slightly turbide
1.22	1.0	4.74	18.3	4.41	297.9	93.5	"
1.23	1.5	4.75	17.9	4.11	296.2	97.4	"
1.25	2.0	4.69	17.8	4.11	296.3	96.1	"
1.27	2.5	4.70	17.8	4.10	296.2	93.9	"
Acceptable Variation*		+/-10%	+/- 0.2 °C	+/-0.1 pH	+/-5%	+/-10mV	**Results Acceptable: (YES) / NO**

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:	Slight turbid - Clear	**Sheen:**	YES / NO
Colour:		**Odour:**	YES / NO

		No.	Container / Preservative
Primary sample ID:	~~AE~~ GW02		
Duplicate sample:	YES / (NO) ID:		
Triplicate sample:	YES / (NO) ID:		
Rinsate sample:	YES / (NO) ID:		
Sample on ice:	(YES) / NO		
Field Filter Method:	0.45µm Filter / (Not Filtered)		
Water Quality Meter:			
Guaging Equipment:			
Pump Type:			

Notes:

Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)

Casing Diameter	25mm	50mm	100mm	150mm	300mm
Conversion Factor	0.98	1.96	7.85	49.1	196.3

Volume of water in well (L) = π * radius of gravel pack $(m)^2$ * height of water column (m)

*SA EPA Guidelines (June 2007) as referenced in NEPM

JBS& installed

Groundwater Sampling Form
FIELD RECORD SHEETS

JBS&G

Project name: Peat Island	**Location:**	**Well ID:** GW_03 Service Station North. ROAD
Project number: 54933		
Person sampling: JL	**Sampling Date:** 28.9.18	**Weather:** Fine

Casing Diameter (mm):		**Depth to NAPL (mBTOC):**	
Well Completion:	Flush Mount / Monument	**Depth to SWL (mBTOC):**	5.84
Well Cap Type:	Locking Cap / PVC / Other	**NAPL Thickness (m):**	
Well Condition:	Good / Compromised (see notes)	**Depth to EoH (mbtoc):**	9.510
Calculated Well Volume (L):		**Water Column Depth (m):**	~3.7m
Sampling Method:	Purge Volume: 4 Casings Vol. (L):	**NAPL Visually Verified?**	
	Low Flow: Pump Submersion depth (mBTOC):		

Time	Volume Purged	Dissolved Oxygen	Temp.	pH	EC	ORP	Comments
	L	% ☐ mgL/ppm ☒	°C	pH units	µS/cm	mV	include SWL for low flow (mBTOC)
1125	1	3.68	20.4	4.93	609	21.9	slightly turbid.
1127	2	3.53	20.1	4.91	610	17.7	"
1128	3	3.45	20.0	4.89	553	19.5	"
1129	4 3.17		20.0	4.85	608	16.2	"
11:30	5	3.00	20.0	4.86	606	17.4	
11:32	6	2.95	20.0	4.88	605	17.5	
11:33	7	2.97	20.0	4.87	606	17.3	↓
Acceptable Variation*		+/-10%	+/- 0.2 °C	+/-0.1 pH	+/-5%	+/-10mV	**Results Acceptable: YES / NO**

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:	slight turbid	**Sheen:**	YES / NO
Colour:	clear-brown	**Odour:**	YES / NO

Primary sample ID:	GW03	**No.**	**Container / Preservative**
Duplicate sample:	YES / NO ID:		
Triplicate sample:	YES / NO ID:		
Rinsate sample:	YES / NO ID:		
Sample on ice:	YES / NO		
Field Filter Method:	0.45µm Filter / Not Filtered		
Water Quality Meter:			
Guaging Equipment:			
Pump Type:			

Notes:

Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)

Casing Diameter	25mm	50mm	100mm	150mm	300mm
Conversion Factor	0.98	1.96	7.85	49.1	196.3

Volume of water in well (L) = π * radius of gravel pack $(m)^2$ * height of water column (m)

*SA EPA Guidelines (June 2007) as referenced in NEPM

Groundwater Sampling Form
FIELD RECORD SHEETS

JBS&G

Project name:	Mat Island	**Location:**	S Bridge Island
Project number:	54933	**Well ID:**	GW04
Person sampling:		**Sampling Date:**	28.9.18
		Weather:	Fine.

Casing Diameter (mm):		**Depth to NAPL (mBTOC):**	
Well Completion:	Flush Mount / Monument	**Depth to SWL (mBTOC):**	1.061
Well Cap Type:	Locking Cap / PVC / Other	**NAPL Thickness (m):**	
Well Condition:	Good / Compromised (see notes)	**Depth to EoH (mbtoc):**	3.403
Calculated Well Volume (L):		**Water Column Depth (m):**	~2.4m
Sampling Method:	Purge Volume: 4 Casings Vol. (L):	**NAPL Visually Verified?**	
	Low Flow: Pump Submersion depth (mBTOC):		

Time	Volume Purged	Dissolved Oxygen	Temp.	pH	EC	ORP	Comments
	L	% ☐ mgL/ppm ☒	°C	pH units	µS/cm	mV	include SWL for low flow (mBTOC)
14:11	0.5	2.35	18.0	5.48	31260	-29.0	Clear.
14:12	1.0	2.24	17.9	5.43	31153	-31.0	
14:13	1.5	2.09	17.9	5.38	31049	-32.8	
14:14	2.0	1.94	17.9	5.36	31010	-34.3	
14:15	2.5	1.93	17.9	5.34	30906	-33.8	
14:16	3.0	1.85	17.8	5.33	30869	-33.3	
Acceptable Variation*		+/-10%	+/- 0.2 °C	+/-0.1 pH	+/-5%	+/-10mV	**Results Acceptable:** YES / NO

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:	clear	**Sheen:**	YES / NO
Colour:	"	**Odour:**	YES / NO

			No.	Container / Preservative
Primary sample ID:	GW04			
Duplicate sample:	YES / NO	ID:		
Triplicate sample:	YES / NO	ID:		
Rinsate sample:	YES / NO	ID:		
Sample on ice:	YES / NO			
Field Filter Method:	0.45µm Filter / Not Filtered			
Water Quality Meter:				
Guaging Equipment:				
Pump Type:				

Notes:

Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)

Casing Diameter	25mm	50mm	100mm	150mm	300mm
Conversion Factor	0.98	1.96	7.85	49.1	196.3

Volume of water in well (L) = π * radius of gravel pack $(m)^2$ * height of water column (m)

*SA EPA Guidelines (June 2007) as referenced in NEPM

Groundwater Sampling Form
FIELD RECORD SHEETS

Project name: Peat IS	**Location:** S Island	**Well ID:** GWO5	
Project number: 54933			
Person sampling:	**Sampling Date:** 28.9.18	**Weather:** Fine.	

Casing Diameter (mm):		**Depth to NAPL (mBTOC):**	
Well Completion:	Flush Mount / Monument	**Depth to SWL (mBTOC):**	1.290
Well Cap Type:	Locking Cap / PVC / Other	**NAPL Thickness (m):**	
Well Condition:	Good / Compromised (see notes)	**Depth to EoH (mbtoc):**	3.382
Calculated Well Volume (L):		**Water Column Depth (m):**	
Sampling Method:	Purge Volume: 4 Casings Vol. (L):	**NAPL Visually Verified?**	
	Low Flow: Pump Submersion depth (mBTOC):		

Time	Volume Purged	Dissolved Oxygen	Temp.	pH	EC	ORP	Comments
	L	% mgL/ppm ☐ ☑	°C	pH units	__S/cm	mV	include SWL for low flow (mBTOC)
2:30	0.5	~~2.36~~	19.1	5.42	38842	10.7	turbid brown
2:35	1.0	1.43	17.9	5.44	38494	2.1	
2:40	1.5	1.17	17.7	5.37	38494	-5.9	
2:45	2.0	1m 2.4	17.5	5.38	~~38501~~	-17.1	
2:50	2.5	12.1	17.5	5.40	38490	-17.5	
2:55	3.0	11.7	17.5	5.38	38491	-17.5	
Acceptable Variation*		+/-10%	+/- 0.2 °C	+/-0.1 pH	+/-5%	+/-10mV	**Results Acceptable: YES / NO**

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:	Clear - brown	**Sheen:**	YES / NO
Colour:		**Odour:**	YES / NO

Primary sample ID:	GWO5	**No.**	**Container / Preservative**
Duplicate sample:	YES / NO ID:		
Triplicate sample:	YES / NO ID:		
Rinsate sample:	YES / NO ID:		
Sample on ice:	YES / NO		
Field Filter Method:	0.45µm Filter / Not Filtered		
Water Quality Meter:			
Guaging Equipment:			
Pump Type:			

Notes:

Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)

Casing Diameter	25mm	50mm	100mm	150mm	300mm
Conversion Factor	0.98	1.96	7.85	49.1	196.3

Volume of water in well (L) = π * radius of gravel pack $(m)^2$ * height of water column (m)

*SA EPA Guidelines (June 2007) as referenced in NEPM

Appendix H Statistical Assessment

UCL Statistics for Uncensored Full Data Sets		
User Selected Options		
Date/Time of Computation	ProUCL 5.116/10/2018 4:56:12 PM	
From File	Lead - Peat Island.xls	
Full Precision	OFF	
Confidence Coefficient	95%	
Number of Bootstrap Operations	2000	

Lead

General Statistics

Total Number of Observations	81	Number of Distinct Observations	51
		Number of Missing Observations	4
Minimum	5	Mean	49.09
Maximum	530	Median	20
SD	81.16	Std. Error of Mean	9.018
Coefficient of Variation	1.653	Skewness	3.825

Normal GOF Test

Shapiro Wilk Test Statistic	0.551	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.303	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0985	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	64.09	95% Adjusted-CLT UCL (Chen-1995)	68.01
		95% Modified-t UCL (Johnson-1978)	64.73

Gamma GOF Test

A-D Test Statistic	4.738	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.789	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.2	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.103	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.852	k star (bias corrected MLE)	0.829
Theta hat (MLE)	57.59	Theta star (bias corrected MLE)	59.21
nu hat (MLE)	138.1	nu star (bias corrected)	134.3
MLE Mean (bias corrected)	49.09	MLE Sd (bias corrected)	53.91
		Approximate Chi Square Value (0.05)	108.5
Adjusted Level of Significance	0.047	Adjusted Chi Square Value	108.1

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	60.74	95% Adjusted Gamma UCL (use when n<50)	60.98

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.926	**Shapiro Wilk Lognormal GOF Test**

53	5% Shapiro Wilk P Value					8.9653E-5	Data Not Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic					0.134	**Lilliefors Lognormal GOF Test**					
55	5% Lilliefors Critical Value					0.0985	Data Not Lognormal at 5% Significance Level					
56	**Data Not Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59	Minimum of Logged Data					1.609	Mean of logged Data					3.203
60	Maximum of Logged Data					6.273	SD of logged Data					1.07
61												
62	**Assuming Lognormal Distribution**											
63	95% H-UCL					57.4	90% Chebyshev (MVUE) UCL					61.85
64	95% Chebyshev (MVUE) UCL					70.33	97.5% Chebyshev (MVUE) UCL					82.1
65	99% Chebyshev (MVUE) UCL					105.2						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data do not follow a Discernible Distribution (0.05)**											
69												
70	**Nonparametric Distribution Free UCLs**											
71	95% CLT UCL					63.92	95% Jackknife UCL					64.09
72	95% Standard Bootstrap UCL					63.76	95% Bootstrap-t UCL					73.47
73	95% Hall's Bootstrap UCL					80.85	95% Percentile Bootstrap UCL					65.08
74	95% BCA Bootstrap UCL					68.31						
75	90% Chebyshev(Mean, Sd) UCL					76.14	95% Chebyshev(Mean, Sd) UCL					88.39
76	97.5% Chebyshev(Mean, Sd) UCL					105.4	99% Chebyshev(Mean, Sd) UCL					138.8
77												
78	**Suggested UCL to Use**											
79	95% Chebyshev (Mean, Sd) UCL					88.39						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

Appendix I QA/QC Assessment

QA/QC Results - Soil

The QA/QC result for soil samples collected are summarised in **Table I.1** and discussed below. Detailed QA/QC results are included following the discussion of DQI exceedances below.

Table I.1: QA/QC Results Summary - Soil

Data Quality Indicator	Results	DQO met?
Precision		
Blind duplicates (intra laboratory)	0-75 % RPDs Intra laboratory samples were analysed at a rate greater than 1 in 20 samples.	Partial[1]
Blind duplicates (inter laboratory)	0-143 % RPDs Inter laboratory were analysed at a rate greater than 1 in 20 samples.	Partial [1]
Laboratory duplicates	0-65 % RPD Laboratory samples were analysed in accordance with the DQOs.	Partial [1]
Accuracy		
Laboratory control samples (LCS)	63-137 % recovery	Yes
Surrogate spikes	21-184 % recovery Surrogate spikes were completed for all organic sample analyses	Partial [1]
Matrix spikes	52-142 % recovery Matrix spikes were completed at a suitable density with respect to laboratory batch size and sample analyses.	Partial [1]
Representativeness		
Samples extracted and analysed within holding times	All primary and duplicate samples were extracted within appropriate holding times.	Partial [1]
Sampling appropriate for media and analytes	Samples were collected using appropriate methodology with regard to the sample media (soil and groundwater) and analytes (volatile, semi-volatile and low volatility organics and inorganics)	Yes
Trip spike	70-130% recovery One completed per sampling event and associated laboratory batch	Yes
Trip blank	<LOR One completed per sampling event and associated laboratory batch	Yes
Rinsate blank	<LOR for most analytes in all rinsate blanks. One completed per sampling event and associated laboratory batch	Partial [1]
Laboratory Blank	<LOR One completed per sampling event and associated laboratory batch	Yes
Standard operating procedures used for sample collection and handling	Standard operating procedures used as described in JBS&G SAQP (2018) employed for all sampling events and samples collected	Yes
Comparability		
Standard analytical methods used for all analyses	Standard analytical methods used as shown in **Appendix F**	Yes
Consistent field conditions, field staff and laboratories	Sampling was conducted by the same field staff members. Standard operating procedures were implemented throughout the works. Field conditions remained the same throughout the works.	Yes
Limits of reporting appropriate and consistent	Limits of reporting were consistent and appropriate	Yes
Completeness		
Soil description and COCs completed and appropriate	All field documentation and COCs were completed appropriately.	Yes
Appropriate documentation	All field documentation was appropriately completed.	Yes

Data Quality Indicator	Results	DQO met?
Satisfactory frequency and result for QC samples	The QC results are considered adequate for the purposes of the investigation	Yes
Data from critical samples	Samples were analysed at locations designed to address the requirements of the investigation. All critical samples were analysed for appropriate contaminants of concern and the QA/QC assessment confirmed the reliability of this data.	Yes
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria	Analytical methods and limits of recovery were considered appropriate for media and adopted site validation criteria for all soil analytes.	Yes

Notes: 1. See discussion below for notes

Precision

Soil Blind Duplicates (intra-laboratory)

The rate of duplicate soil sampling and analysis was 1 duplicate per 20 primary samples. As such, the frequency of duplicate sample analysis for all key contaminants of concern met the nominated DQI frequency.

Generally, all results were below the LOR. Soil RPDs were calculated according to the NEPC (2013) guidelines and fell within the JBS&G acceptable limit (0-50%), with the exception of some TPH results, reporting recoveries outside the nominated DQI; ranging from 0 to 75%. A summary of RPD calculations for identified COPCs is provided as **Appendix I.** High RPDs in the soil blind duplicate sample can be expected when materials are heterogeneous and/or when analyte concentrations are close to LOR. Therefore, the elevated RPDs are considered not to affect the overall precision of the data set.

Soil Split Duplicates (inter-laboratory)

The rate of soil split duplicate sampling and analysis was 1 triplicate per 20 primary samples. As such, the frequency of triplicate sample analysis for all key contaminants of concern met the nominated DQI frequency.

Some soil blind duplicate RPDs were reported outside of the nominated DQIs and JBS&G acceptable limits, with RPDs ranging from 0 to 143%. Generally, the reported concentrations are within 10x the laboratory limit of reporting, and therefore any RPD is acceptable. Additionally, the RPDs for the inter-laboratory duplicates are considered to be the result of heterogeneity in the material sampled. The elevated RPD results are considered not to have adversely affected the data set for the purpose of making decisions identified in **Section 5.1.2**. As a conservative measure the highest concentration for the inter-laboratory duplicate pairs has been used for this assessment.

Laboratory Duplicates

The rate of laboratory duplicate analysis was within the JBS&G acceptance criteria of 1 per 20 primary samples. As such, the frequency of duplicate sample analysis for all key contaminants of concern met the nominated DQI frequency.

Laboratory duplicate RPDs are generally within the JBS&G acceptable criteria. Those noted outside of these limits pass the laboratory acceptance criteria (concentrations are within 10x the laboratory limit of reporting and therefore any RPD is acceptable). This is not considered to affect the reliability of the data.

Accuracy

Laboratory Control Samples

Some laboratory spike control (LCS) samples reported recoveries outside of the JBS&G acceptable range of 70 – 130 %.

However, LCS recoveries outside of the target range are not considered to affect the overall reliability of the data set as concentrations in characterisation samples were below the laboratory's LOR and within the laboratories NATA accredited limits (30%-130%).

Surrogate Spikes

Soil surrogate spikes were conducted in conjunction with organic contaminant analysis of all samples. Some surrogate spikes reported recoveries outside of the JBS&G acceptable range of 70 – 130 %.

However, the surrogate spike recoveries outside of the target range are not considered to affect the overall reliability of the data set as concentrations in characterisation samples were below the laboratory's LOR and within the laboratories NATA accredited limits (50%-150%).

Matrix Spikes

Soil matrix spikes were conducted in conjunction with organic contaminant analysis of all samples. Some matrix spikes reported recoveries outside of the JBS&G acceptable range of 70 – 130 %.

However, the soil matrix spike recoveries outside of the target range are not considered to affect the overall reliability of the data set as recoveries were within the range accepted by the laboratory.

Sampling appropriate for media and analytes

All sampling works completed during the investigation were conducted in accordance with JBS&G standard operating procedures as outlined in the Sampling, Analysis, and Quality Plan prepared for the assessment. Sample locations were undertaken for the purposes of visual inspection and/or olfactory assessment of fill/soil conditions and the collection of samples was considered appropriate for identified COPC.

Where soil samples were collected for PFAS analysis, the samples were collected with the use of a hand shovel. The shovel was decontaminated between sampling points with the use of PFAS free detergent. No sticker or labels were located on the shovel. Samples were collected with a fresh pair of PFAS free disposable gloves. Sample identification numbers were completed on the PFAS appropriate jars with the use of a ball point pen.

All samples were collected wearing a new pair of disposable nitrile gloves and collected from the centre of the excavator bucket, avoiding contact with the sides.

Holding Times

Copies of Sample Receipt Notes (SRNs) are included in relevant sections of the report (**Appendix F**) and sample extraction/analysis dates were reported in each laboratory report. All groundwater sample analyses were undertaken within appropriate holding times for the respective analytes. The majority of the soil analysis was completed within appropriate holding times. Analysis completed outside of holding times are not considered to impact the outcome of the assessment as no field indicators (odours, observations and PID readings) were observed to indicate the likely presence of impacted soils. All samples were stored within refrigerators at appropriate low temperatures at the laboratory which would minimise the potential for any volatile loss or degradation. As such, it is considered that the analysis completed outside of holding times would not impact the outcome of this investigation.

Trip Spike

A trip spike was submitted with characterisation samples collected during each sampling event. All trip spike recoveries were within the JBS&G acceptable limit of 70-130 %.

Storage Blank

A storage blank was carried during all soil and groundwater sampling events and was submitted with each lab batch, meeting the overall nominated frequency thresholds. There were no reported concentrations of BTEX compounds above the laboratory LOR, achieving the nominated DQIs.

Rinsate Blank

Rinsate samples were prepared during the sampling events and subsequently submitted with the appropriate lab batch for analysis of key contaminants of concern. Generally, all analytes reported concentrations below the laboratory LOR, with the exception of Zinc (filtered) in rinsate samples collected on 28 September 2018. Results are reported as minor exceedances of the LOR and are not considered to affect the overall reliability of the data.

Laboratory Blank

One Laboratory blank was completed per sampling event and analytes were all below the laboratory limit of reporting LOR.

All non-single use field equipment was decontaminated as per the procedure identified in **Section 5.2.1**.

Experienced JBS&G personnel undertook all sampling in accordance with standard JBS&G sampling methods.

The laboratory LORs are consistent and are considered appropriate.

Comparability

Eurofins, the primary laboratory, and Envirolab, the secondary laboratory, were NATA accredited for all analytical methods used. The laboratories used similar analytical methods and the analytical data was considered to be comparable between the laboratories as indicated by the results of inter-laboratory duplicate analyses. Where different LORs were adopted by the laboratories, the primary laboratory typically had a lower LOR than the secondary laboratory, and as such, consideration of the data set was not impacted.

Furthermore, the samples collected for assessment purposes are considered comparable as all samples were collected by experienced JBS&G personnel in accordance with standard JBS&G sampling methods.

Completeness

Documentation

All laboratory documentation is complete and correct. Chain of custody documentation is provided with laboratory reports in **Appendix F.**

Frequency for QA/QC Samples

QA/QC samples were collected at a frequency of 1 per 20 primary samples, meeting the sample frequency DQOs for all analyses including asbestos, heavy metals, TRH/BTEX, PAHs and OCPs/PCBs. The data set is considered complete and reliable.

QA/QC Results - Groundwater

The QA/QC result for groundwater samples collected are summarised in **Table I.2** and discussed below. Detailed QA/QC results are included following the discussion of DQI exceedances below.

Table I.2: QA/QC Results Summary - Groundwater

Data Quality Indicator	Results	DQO met?
Precision		
Blind duplicates (intra laboratory)	0-67 % RPDs Intra laboratory samples were analysed at a rate greater than 1 in 20 samples.	Partial[1]
Blind duplicates (inter laboratory)	0-100 % RPDs	Partial [1]

Data Quality Indicator	Results	DQO met?
	Inter laboratory were analysed at a rate greater than 1 in 20 samples.	
Laboratory duplicates	0-3 % RPD Laboratory samples were analysed in accordance with the DQOs.	Yes
Accuracy		
Laboratory control samples (LCS)	78-128 % recovery	Yes
Surrogate spikes	77-127 % recovery Surrogate spikes were completed for all organic sample analyses	Yes
Matrix spikes	73-117 % recovery Matrix spikes were completed at a suitable density with respect to laboratory batch size and sample analyses.	Yes
Representativeness		
Samples extracted and analysed within holding times	All primary and duplicate samples were extracted within appropriate holding times.	Yes
Sampling appropriate for media and analytes	Samples were collected using appropriate methodology with regard to the sample media (groundwater) and analytes (volatile, semi-volatile and low volatility organics and inorganics)	Yes
Trip spike	70-130% recovery One completed per sampling event and associated laboratory batch	Yes
Trip blank	<LOR One completed per sampling event and associated laboratory batch	Yes
Rinsate blank	<LOR for most analytes in all rinsate blanks. One completed per sampling event and associated laboratory batch	Yes
Laboratory Blank	<LOR One completed per sampling event and associated laboratory batch	Yes
Standard operating procedures used for sample collection and handling	Standard operating procedures used as described in JBS&G SAQP (2018) employed for all sampling events and samples collected	Yes
Comparability		
Standard analytical methods used for all analyses	Standard analytical methods used as shown in **Appendix F**	Yes
Consistent field conditions, field staff and laboratories	Sampling was conducted by the same field staff members. Standard operating procedures were implemented throughout the works. Field conditions remained the same throughout the works.	Yes
Limits of reporting appropriate and consistent	Limits of reporting were consistent and appropriate	Yes
Completeness		
Groundwater description and COCs completed and appropriate	All field documentation and COCs were completed appropriately.	Yes
Appropriate documentation	All field documentation was appropriately completed.	Yes
Satisfactory frequency and result for QC samples	The QC results are considered adequate for the purposes of the investigation	Yes
Data from critical samples	Samples were analysed at locations designed to address the requirements of the investigation. All critical samples were analysed for appropriate contaminants of concern and the QA/QC assessment confirmed the reliability of this data.	Yes
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria	Analytical methods and limits of recovery were considered appropriate for media and adopted site validation criteria for all analytes.	Yes

Notes: 1. See discussion below for notes

Precision

Groundwater Blind Duplicates (intra-laboratory)

The rate of duplicate groundwater sampling and analysis was 1 duplicate per 8 primary samples. As such, the frequency of duplicate sample analysis for all key contaminants of concern met the nominated DQI frequency.

Generally, all results were below the LOR. The RPDs were calculated according to the NEPC (2013) guidelines and fell within the JBS&G acceptable limit (0-50%), with the exception of copper (53%) and Zinc (67%) marginally above the adopted limit. A summary of RPD calculations for identified COPCs is provided as **Appendix I.** The review of the elevated RPDs are not considered to impact the outcome of the assessment as the RPDs were marginally outside the acceptable limit and the highest reported concentrations was within the primary sample.

Groundwater Split Duplicates (inter-laboratory)

The rate of split duplicate sampling and analysis was 1 triplicate per 8 primary samples. As such, the frequency of triplicate sample analysis for all key contaminants of concern met the nominated DQI frequency.

Generally, the reported concentrations are within the JBS&G acceptable limit with the exception of copper (100%), nickel (67%) and zinc (96%). The concentrations of copper and nickel were noted to be within 10x the laboratory limit of reporting. As a conservative measure the highest concentration for the inter-laboratory duplicate pairs has been used for this assessment. The elevated RPDs are not considered to impact the outcome of the assessment.

Laboratory Duplicates

The rate of laboratory duplicate analysis was within the JBS&G acceptance criteria of at least 1 per 20 primary samples. As such, the frequency of duplicate sample analysis for all key contaminants of concern met the nominated DQI frequency.

RPDs were considered to be appropriate for this assessment.

Accuracy

Laboratory Control Samples

All laboratory spike control (LCS) samples reported recoveries were reported within the JBS&G acceptable range of 70 – 130 %.

Surrogate Spikes

All surrogate spikes reported recoveries within the JBS&G acceptable range of 70 – 130 %.

Matrix Spikes

Matrix spikes were conducted in conjunction with organic contaminant analysis of all samples. All matrix spikes reported recoveries within the JBS&G acceptable range of 70 – 130 %.

Sampling appropriate for media and analytes

All sampling works completed during the investigation were conducted in accordance with JBS&G standard operating procedures as outlined in the Sampling, Analysis, and Quality Plan prepared for the assessment. Sample locations were undertaken for the purposes of visual inspection and/or olfactory assessment of fill/soil conditions and the collection of samples was considered appropriate for identified COPC.

All samples were collected wearing a new pair of disposable nitrile gloves and collected from the centre of the excavator bucket, avoiding contact with the sides.

Holding Times

All groundwater sample analyses were undertaken within appropriate holding times for the respective analytes.

Trip Spike

A trip spike was submitted with characterisation samples collected during each sampling event. All trip spike recoveries were within the JBS&G acceptable limit of 70-130 %.

Storage Blank

A storage blank was carried during the groundwater sampling event and was submitted with each lab batch, meeting the overall nominated frequency thresholds. There were no reported concentrations of BTEX compounds above the laboratory LOR, achieving the nominated DQIs.

Rinsate Blank

Rinsate samples were prepared during the sampling events and subsequently submitted with the appropriate lab batch for analysis of key contaminants of concern. Generally, all analytes reported concentrations below the laboratory LOR, with the exception of Zinc (filtered) in rinsate sample collected on 28 September 2018. As the zinc was identified within both rinsate samples collected on the same day, it is considered that the source of the zinc was the rinsate water. It is considered unlikely that the presence of zinc within the rinsate would cross contaminate the equipment at a concentration that would alter the outcome of the assessment. As such, the presence of zinc within the rinsate water is not considered to impact the outcome of the assessment.

Laboratory Blank

One Laboratory blank was completed per sampling event and analytes were all below the laboratory limit of reporting LOR.

All non-single use field equipment was decontaminated as per the procedure identified in **Section 5.2.1**.

Experienced JBS&G personnel undertook all sampling in accordance with standard JBS&G sampling methods.

The laboratory LORs are consistent and are considered appropriate.

Comparability

Eurofins, the primary laboratory, and Envirolab, the secondary laboratory, were NATA accredited for all analytical methods used. The laboratories used similar analytical methods and the analytical data was considered to be comparable between the laboratories as indicated by the results of inter-laboratory duplicate analyses. Where different LORs were adopted by the laboratories, the primary laboratory typically had a lower LOR than the secondary laboratory, and as such, consideration of the data set was not impacted.

Furthermore, the samples collected for assessment purposes are considered comparable as all samples were collected by experienced JBS&G personnel in accordance with standard JBS&G sampling methods.

Completeness

Documentation

All laboratory documentation is complete and correct. Chain of custody documentation is provided with laboratory reports in **Appendix F.**

Frequency for QA/QC Samples

QA/QC samples were collected at a frequency of 1 per 8 primary samples, meeting the sample frequency DQOs for all analyses including heavy metals, TRH/BTEX and PAHs. The data set is considered complete and reliable.

Assessment of QA/QC

The field sampling and handling procedures produced QA/QC results which indicate that the collected soil analytical data are of an acceptable quality and suitable for use with respect to characterisation of the assessment area.

The NATA certified laboratory results sheets indicate that the project laboratory was generally achieving levels of performance within its recommended control limits during the period when the samples for this project were analysed.

On the basis of the results of the field and laboratory QA/QC program, the soil data is of an acceptable quality in order to achieve the objectives of the assessment.

Appendix J Calibration Records

Field Equipment Calibration and Decontamination

PROJECT NAME: Peat Island	PROJECT NO: 54933
FIELD DATES: 18/9/18.	FIELD STAFF: CB

CALIBRATION SUMMARY
EQUIPMENT: PID
CALIBRATION STANDARD: 100 150 ppm.

DATE	TIME	READING (ppm$_v$)	COMMENTS
18.9.18	7:19	99.8	Cal passed

DECONTAMINATION SUMMARY			
EQUIPMENT: Nil reusable.			
1. Was the equipment decontaminated appropriately prior to sampling at each location?	Y	N	NA
2. Was excess soil removed by scraping, brushing or wiping with disposable towels?	Y	N	NA
3. Was the equipment contaminated with grease, tar or similar material? If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y Y	N N	NA
4. Was phosphate-free detergent used to wash the equipment?	Y	N	NA
5. Was the equipment rinsed with clean water?	Y	N	NA
6. Was the equipment then rinsed with deionised water?	Y	N	NA
7. Were all sample containers cleaned and acid or solvent washed prior to sample collection?	Y	N	NA
WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS. Fresh nitrile gloves at each location.			

Field Equipment Calibration and Decontamination

PROJECT NAME: Peat Island	**PROJECT NO:** 54933
FIELD DATES: 19/9/18	**FIELD STAFF:** CB

CALIBRATION SUMMARY
EQUIPMENT: PID
CALIBRATION STANDARD: 100 iso ppm

DATE	TIME	READING (ppm$_v$)	COMMENTS
19/9/18	8.00	99.9	Calibration passed

DECONTAMINATION SUMMARY			
EQUIPMENT: Nil reusable.			
1. Was the equipment decontaminated appropriately prior to sampling at each location?	Y	N	NA
2. Was excess soil removed by scraping, brushing or wiping with disposable towels?	Y	N	NA
3. Was the equipment contaminated with grease, tar or similar material? If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y Y	N N	NA
4. Was phosphate-free detergent used to wash the equipment?	Y	N	NA
5. Was the equipment rinsed with clean water?	Y	N	NA
6. Was the equipment then rinsed with deionised water?	Y	N	NA
7. Were all sample containers cleaned and acid or solvent washed prior to sample collection?	Y	N	NA
WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS. Fresh nitrile gloves per sample / location.			

Field Equipment Calibration and Decontamination

JBS&G

PROJECT NAME: Peat Island	PROJECT NO: 54933
FIELD DATES: 20/9/18.	FIELD STAFF: CB

CALIBRATION SUMMARY

EQUIPMENT: PID

CALIBRATION STANDARD: 100 iso ppm

DATE	TIME	READING (ppm_v)	COMMENTS
20/9/18	8:19	99.1	
		99.9	Cal passed.

DECONTAMINATION SUMMARY

EQUIPMENT:

Hand auger, shovel

1. Was the equipment decontaminated appropriately prior to sampling at each location?	(Y)	N	NA
2. Was excess soil removed by scraping, brushing or wiping with disposable towels?	(Y)	N	NA
3. Was the equipment contaminated with grease, tar or similar material? If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y Y	(N) N	NA
4. Was phosphate-free detergent used to wash the equipment?	(Y)	N	NA
5. Was the equipment rinsed with clean water?	(Y)	N	NA
6. Was the equipment then rinsed with deionised water?	(Y)	N	NA
7. Were all sample containers cleaned and acid or solvent washed prior to sample collection? D/lab supplied	Y	N	(NA)

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS.

Fresh nitrile gloves per sample/location

Field Equipment Calibration and Decontamination

JBS&G

PROJECT NAME: Rat Island	PROJECT NO: 54933
FIELD DATES: 21/9/18	FIELD STAFF: LB

CALIBRATION SUMMARY

EQUIPMENT: PID

CALIBRATION STANDARD: 100 iso ppm.

DATE	TIME	READING (ppm_v)	COMMENTS
21/9/18	8.00	99.9	
		100.1	Cal passed

DECONTAMINATION SUMMARY

EQUIPMENT:

Hand auger, shovel.

1. Was the equipment decontaminated appropriately prior to sampling at each location?	(Y)	N	NA
2. Was excess soil removed by scraping, brushing or wiping with disposable towels?	(Y)	N	NA
3. Was the equipment contaminated with grease, tar or similar material? If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y Y	(N) ~~N~~	NA
4. Was phosphate-free detergent used to wash the equipment?	(Y)	N	NA
5. Was the equipment rinsed with clean water?	(Y)	N	NA
6. Was the equipment then rinsed with deionised water?	(Y)	N	NA
7. Were all sample containers cleaned and acid or solvent washed prior to sample collection? Lab Supplied	Y	N	(NA)

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS.

Fresh nitrile gloves per sample/location

Field Equipment Calibration and Decontamination

JBS&G

PROJECT NAME: Peat Island	
FIELD DATES: 28/9/18	PROJECT NO: 54933
	FIELD STAFF: CB

CALIBRATION SUMMARY

EQUIPMENT: PID

CALIBRATION STANDARD: 100 ISO ppm

DATE	TIME	READING (ppm_v)	COMMENTS
28.9.18	8.01	99.9	
		100.1	Cal passed

DECONTAMINATION SUMMARY

EQUIPMENT:

Hand auger, shovel

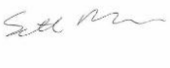
1. Was the equipment decontaminated appropriately prior to sampling at each location?	(Y)	N	NA
2. Was excess soil removed by scraping, brushing or wiping with disposable towels?	(Y)	N	NA
3. Was the equipment contaminated with grease, tar or similar material? If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y	(N)	NA
4. Was phosphate-free detergent used to wash the equipment?	Y	N	
5. Was the equipment rinsed with clean water?	(Y)	N	NA
6. Was the equipment then rinsed with deionised water?	(Y)	N	NA
7. Were all sample containers cleaned and acid or solvent washed prior to sample collection? (lab supplied)	(Y)	N	NA
WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS.	Y	(N)	NA

Fresh nitrile gloves per sample/location

Document Distribution

Rev No.	Copies	Recipient	Date
A	1 x electronic	Peter Graham (Property NSW) Brad May (Epic Environmental)	19 October 2018
0	1 x electronic	Peter Graham (Property NSW) Brad May (Epic Environmental)	30 October 2018
1	1 x electronic	Peter Graham (Property NSW) Revised for updated Concept Plan (Rev J)	30 September 2020
2	1 x electronic	Scott Burrows (Property NSW) Revised for updated Concept Plan (Rev K)	3 August 2021
3	1 x electronic	Scott Burrows (Property NSW) Revised for updated Concept Plan (Rev K)	5 August 2021

Document Status

Rev No.	Author	Reviewer	Approved for Issue		
		Name	Name	Signature	Date
A	Scott Burrows	Matthew Bennett	Matthew Bennett	DRAFT	19 October 2018
0	Scott Burrows	Seth Molinari	Seth Molinari		30 October 2018
1	Scott Burrows	Matthew Bennett	Matthew Bennett		30 September 2020
2	Scott Burrows	Matthew Bennett	Matthew Bennett		3 August 2021
3	Scott Burrows	Matthew Bennett	Matthew Bennett		5 August 2021