



Liverpool Boys and Girls High School Upgrade Project

NSW Department of Education

Data Gap Investigation

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11 February 2025





We acknowledge the Traditional Custodians of Country throughout Australia and their connections to land, sea and community.

We pay respect to Elders past and present and in the spirit of reconciliation, we commit to working together for our shared future.

Caring for Country The Journey of JBS&G
Artist: Patrick Caruso, Eastern Arrernte



Table of Contents

1.	Introduction	3
1.1	Introduction and Background	3
1.2	Objective	4
1.3	Scope of Works	4
1.4	Statement of Significance	5
1.5	REF Deliverable Requirement Reporting	5
2.	Site Conditions	7
2.1	Site identification	7
2.2	Site Description	7
2.3	Surrounding Land Use	7
2.4	Topography	8
2.5	Geology	8
2.6	Acid Sulfate Soils	8
2.7	Hydrology	8
2.8	Hydrogeology	8
2.9	Meteorology	9
3.	Site History.....	10
3.1	Summary of Site History	10
4.	Previous Investigations	11
4.1	Site Contamination Assessment	11
4.2	Asbestos and Hazardous Materials Pre-Demolition Survey (Coffey 2019b).....	12
4.3	Environmental Peer Review and Strategic Advice (JBS&G 2023)	13
5.	Data Gaps.....	14
6.	SCA Conceptual Site Model	15
6.1	Potential Areas of Environmental Concern.....	15
6.2	Potentially Contaminated Media	15
6.3	Potential for Migration, Exposure Pathways and Receptors	15
7.	Sampling and Analysis Quality Plan	17
7.1	Data Quality Objectives	17
7.1.1	State the Problem	17
7.1.2	Identify the Decision	17
7.1.3	Identify Inputs to the Decision	17
7.1.4	Define the Study Boundary.....	17
7.1.5	Develop a Decision Rule	18

7.1.6	Specific Limits on Decision Errors	18
7.2	Optimise the Design of Obtaining Data	21
7.2.1	Soil Investigation Program	21
7.2.2	Soil Sampling Methodology	21
7.2.3	Asbestos Quantification of Accessible Fill Based Soils	22
7.2.4	Duplicate and Triplicate Sample Preparation	22
7.2.5	Laboratory Analysis.....	23
8.	Assessment Criteria	24
8.1	Regulatory Guidelines	24
8.1.1	Soil Assessment Criteria Selection.....	24
9.	Quality Assurance/Quality Control.....	26
10.	Results	27
10.1	Field Observations	27
10.2	Analytical Results	27
10.2.1	Heavy Metals	27
10.2.2	TRH/BTEX	28
10.2.3	PAHs.....	28
10.2.4	OCPs/OPPS.....	28
10.2.5	Asbestos.....	28
10.2.6	sPOCAS (ASS)	28
11.	Revised Conceptual Site Model	30
11.1	Extent of Known Contamination.....	30
11.1.1	Human and Ecological Receptors	30
11.1.2	Potential and Complete Exposure Pathways.....	30
11.1.3	Potential for migration from site.....	31
12.	Assessment of Decision Rules	32
12.1	Achieving the appropriate sampling density	32
12.2	Confirming the extent of friable asbestos within the Block A crawl space	32
12.3	Confirming the Presence/Absence of Potential Acid Sulfate Soils (PASS)	32
12.4	Confirming Contamination Status of the Broader Site	32
12.5	Requirements for a Site Management Strategy	33
13.	Conclusion and Recommendations.....	34
13.1	Statement of Significance	34
14.	Limitations	35

List of Tables

Table 1.1: REF Deliverable Requirements

Table 2.1: Site Identification Details

Table 6.1: Areas of Environmental Concern and Associated Contaminants of Potential Concern

Table 7.1: Summary of Decision Rules

Table 7.2: Data Quality Indicators

Table 7.3: Analytical Schedule

Table 8.1: Derivation of Soil EILs

List of Figures

Figure 1	Site Location
Figure 2	Site Layout
Figure 3	Historical Sample Locations
Figure 4	Sample Locations
Figure 5	Exceedances

Appendices

Appendix A	Mitigation Measures
Appendix B	Photographic Log
Appendix C	Field Logs
Appendix D	Tabulated Analytical Results
Appendix E	Quality Assurance / Quality Control
Appendix F	Laboratory Documentation
Appendix G	Statistical Analysis

Abbreviations

Term	Definition
ACM	Asbestos Containing Materials
AHD	Australian Height Datum
bgs	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
CLM	Contaminated Land Management
COPC	Contaminants of Potential Concern
CSM	Conceptual Site Model
DGI	Data Gap Investigation
DP	Deposited Plan
DQI	Data Quality Indicators
DQO	Data Quality Objectives
EILs	Ecological Investigation Levels
EPA	Environment Protection Authority
HILs	Health Investigation Levels
LBHS	Liverpool Boys High School
LBGHS	Liverpool Boys and Girls High School
LGHS	Liverpool Girls High School
LBP	Lead-Based Paint
LCD	Lead Containing Dust
LGHS	Liverpool Girls High School
LOR	Limit of Reporting
NEPM	National Environment Protection Method
OCPs	Organochlorine Pesticides
ODS	Ozone Depleting Substances
OPPs	Organophosphorus Pesticide
PAHs	Polycyclic Aromatic Hydrocarbons
PARCCS	Precision, Accuracy, Representativeness, Comparability, Completeness, and Sensitivity
PASS	Potential Acid Sulfate Soil
PCB	Polychlorinated Biphenyls
PCBs	Polychlorinated Biphenyls
QAQC	Quality Assurance and Quality Control
RAP	Remedial Action Plan
REF	Review of Environmental Factors
RPD	Relative Percent Difference
SCA	Site Contamination Assessment
SINSW	School Infrastructure NSW
SMF	Synthetic Mineral Fibres
sPOCAS	Suspension Peroxide Oxidation Combined Acidity Sulfur

SVOCs	Semi-volatile Organic Compounds
TPA	Titrateable Peroxide Acidity
TRH	Total Recoverable Hydrocarbons
TSA	Titrateable Sulfidic Acidity
WA DoH	Western Australia Department of Health

Executive Summary

This contaminated land Data Gap Investigation (DGI) has been prepared by JBS&G Australia Pty Ltd (JBS&G) on behalf the NSW Department of Education (the Applicant) to assess the potential environmental impacts that could arise from the redevelopment of the Liverpool Boys High School and Liverpool Girls High School (LBGHS), at 18 Forbes Street, Liverpool NSW, 2170.

This report has been prepared to further characterise the site surface and sub-surface soils and any potential contamination requiring remediation/management.

This report accompanies a Review of Environment Factors (REF) that seeks approval for redeveloping the Liverpool Boys and Liverpool Girls High Schools into a single co-educational school, including:



- Construction and operation of a six-storey school building, including school hall and gymnasium;
- Associated parking and building services;
- Tree removal;
- Associated landscaping and play spaces;
- Augmentation of service infrastructure; and
- Associated off-site infrastructure works to support the school, including (but not limited to) services, kiss and drop point and pedestrian crossings.

Refer to the Review of Environmental Factors prepared by Ethos Urban for a full description of works.

The site is located at 18 Forbes Street, Liverpool, within the Liverpool Local Government Area (LGA). The site is legally described as Lot 1 DP1137425 and has a total area of approximately 74,973 m².

The site comprises a broadly rectangular portion of land which currently contains the existing Liverpool Boys High School, Liverpool Girls High School, and the Gulyangarri Public School, which commenced operations in January 2024 and is located to the east of the wider site.

The site's western portion contains Liverpool Boys High School and Liverpool Girls High School. Liverpool Girls High School in the site's south-west comprises three, two-storey buildings. Liverpool Boys High School in the site's northwest, comprises approximately four, two-storey buildings, with adjacent at-grade carparking and various sports courts.

With consideration to the specific DGI scope of works, JBS&G was engaged by Meinhardt (the client) on behalf of the NSW Department of Education for the completion of a DGI at a portion of LBGHS. The portion of the broader site which is subject to this investigation and herein referred to as 'the site' comprises an area of approximately 3.3 hectares. The site location and layout are shown on **Figures 1** and **2**, respectively. The Gulyangarri Public School is outside the investigation site.

The proposed redevelopment of the site will consist of new interconnected multi-storey infrastructure in the northwest, a covered outdoor learning space, hall and library in the northeast, open recreational spaces including a games field extending from the centre to the south of site and on-grade car parking along the western boundary for ongoing use as a secondary school.

A previous Site Contamination Assessment (SCA, Coffey 2019a¹) for potential contamination has been undertaken across the broader LBGHS and the adjacent land to the east in order to determine the suitability for the proposed educational land use including a primary school. This investigation identified contamination as friable asbestos in a surface soil sample located in a sub-floor area of Block A in LBHS, located in the western portion of the current site, as well as exceedances of arsenic, copper and zinc within surface and subsurface soils for the adopted site criteria of the SCA that provided for the more sensitive primary school use. The arsenic and zinc metal exceedances were captured in the greater Department of Education boundary (refer **Figure 2**), however, fall outside the investigation site boundary.

Based on an Environmental Peer Review and Strategic Advice (JBS&G 2023²), the data gap investigation (DGI) aimed to further characterise the extent of friable asbestos contamination identified by the SCA within the Block A crawl space, further characterise surface and subsurface soils across the site to ensure sufficient data coverage for the site, complying with the NSW EPA (2022) *Contaminated land guidelines: Sample design part 1 – application*; and include an assessment of potential acid sulfate soil (PASS) conditions.

Based on the scope of work completed for this assessment including the findings of previous investigations and subject to the limitations in **Section 14**, the following conclusions are made:

- JBS&G consider that the data gaps identified in the SCA and Peer Review have been adequately addressed and the site suitably characterised; and
- The site can be made suitable for educational land use (secondary school only) subject to remediation of identified asbestos and copper contamination guided by a RAP documenting the known extent of contamination and a remedial approach consistent with current relevant legislation and guidelines.

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed development, it is determined that:

- The extent and nature of potential impacts are low, and will not have significant adverse effects on the locality, community and the environment; and
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community.

¹ *Site Contamination Assessment, Department of Education (School Infrastructure) NSW Liverpool Boys and Girls High School*, Prepared for Department of Education (School Infrastructure) NSW by Coffey Services Australia Pty Ltd dated 07 November 2019 (Coffey 2019a)

² *Environmental Peer Review and Strategic Advice – Liverpool Boys and Girls High School*, Prepared for Department of Education (School Infrastructure) NSW, care of Colliers, by JBS&G Australia Pty Ltd dated 13 December 2023. (JBS&G 2023)

1. Introduction

1.1 Introduction and Background

This contaminated land Data Gap Investigation (DGI) has been prepared by JBS&G Australia Pty Ltd (JBS&G) on behalf the NSW Department of Education (the Applicant) to assess the potential environmental impacts that could arise from the redevelopment of the Liverpool Boys High School and Liverpool Girls High School (LBGHS), at 18 Forbes Street, Liverpool NSW, 2170.

This report has been prepared to further characterise the site surface and sub-surface soils and any potential contamination requiring remediation/management.

This report accompanies a Review of Environment Factors (REF) that seeks approval for redeveloping the Liverpool Boys and Liverpool Girls High Schools into a single co-educational school, including:

- 
- Construction and operation of a six-storey school building, including school hall and gymnasium;
 - Associated parking and building services;
 - Tree removal;
 - Associated landscaping and play spaces;
 - Augmentation of service infrastructure; and
 - Associated off-site infrastructure works to support the school, including (but not limited to) services, kiss and drop point and pedestrian crossings.

Refer to the Review of Environmental Factors prepared by Ethos Urban for a full description of works.

The site is located at 18 Forbes Street, Liverpool, within the Liverpool Local Government Area (LGA). The site is legally described as Lot 1 DP1137425 and has a total area of approximately 74,973 m².

The site comprises a broadly rectangular portion of land which currently contains the existing Liverpool Boys High School, Liverpool Girls High School, and the Gulyangarri Public School, which commenced operations in January 2024 and is located to the east of the wider site.

The site's western portion contains Liverpool Boys High School and Liverpool Girls High School. Liverpool Girls High School in the site's south-west comprises three, two-storey buildings. Liverpool Boys High School in the site's northwest, comprises approximately four, two-storey buildings, with adjacent at-grade carparking and various sports courts.

With consideration to the specific DGI scope of works, JBS&G was engaged by Meinhardt (the client) on behalf of the NSW Department of Education for the completion of a DGI at a portion of LBGHS. The portion of the broader site which is subject to this investigation and herein referred to as 'the site' comprises an area of approximately 3.3 hectares. The site location and layout are shown on **Figures 1** and **2**, respectively. The Gulyangarri Public School is outside the investigation site.

The proposed redevelopment of the site will consist of new interconnected multi-storey infrastructure in the northwest, a covered outdoor learning space, hall and library in the northeast, open recreational spaces including a games field extending from the centre to the south of site and on-grade car parking along the western boundary for ongoing use as a secondary school. No primary school is proposed.

The site is noted to contain several buildings varying in age of construction. Buildings onsite are constructed of brick, timber cladding or are prefabricated demountables, with the highest building reaching a maximum of two-storeys, located in the north-west portion of site. Recreational spaces of the site include multi-purpose sports courts in the east, and an open field further south. Historically, the site was a clear parcel of land that

held few residential structures prior to the development of the Liverpool Boys High School (LBHS) and Liverpool Girls High School (LGHS) in the 1950s.

A previous Site Contamination Assessment (SCA, Coffey 2019a³) for potential contamination has been undertaken across the broader LBGHS and the adjacent primary school land to the east in order to determine the suitability for the proposed educational land use including primary school. The SCA identified contamination as friable asbestos in a surface soil sample located in a sub-floor area of Block A in LBHS, located in the western portion of the current site, as well as exceedances of arsenic, copper and zinc within surface and subsurface soils for the adopted site criteria of the SCA, which provided for the more sensitive primary school land use. The arsenic and zinc metal exceedances were captured in the greater Department of Education boundary (refer **Figure 2**), however, fall outside the investigation site boundary. An asbestos and hazardous materials pre-demolition survey (Coffey, 2019b⁴) was conducted concurrently and identified the presence of hazardous building materials inclusive of asbestos containing materials (ACM) and lead-based paint.

Based on an Environmental Peer Review and Strategic Advice (JBS&G 2023⁵), the DGI aimed to further characterise the extent of friable asbestos contamination identified by the SCA within the Block A crawl space, further characterise surface and subsurface soils across the site to ensure sufficient data coverage for the site, complying with the NSW EPA (2022) *Contaminated land guidelines: Sample design part 1 – application*; and include an assessment of potential acid sulfate soil (PASS) conditions.

This DGI has been undertaken in general accordance with guidelines made or endorsed by the NSW Environment Protection Authority (EPA) including National Environment Protection Council (NEPC 2013⁶) guidelines and relevant Australian Standards.

1.2 Objective

The objective of the DGI was to collect additional data to assess the current contamination status of the site and confirm the extent of remediation required for identified contamination at the site in order to ensure the site is suitable for ongoing secondary educations (high school) land use.

1.3 Scope of Works

The following scope of works was completed for as a part of this DGI:

- A desktop review of all available previous site assessment information and publicly available information relevant to the site;
- A detailed site inspection to determine the presence of any potential contamination indicators;
- Advancement of test pits, boreholes and surface soil sampling locations (24 locations), targeting areas of uncontrolled fill, asbestos impacts within sub-floor areas below buildings, and analysis of selected soil samples for contaminants of potential concern (COPCs); and
- Preparation of a DGI report in general accordance with relevant EPA guidelines.

³ *Site Contamination Assessment, Department of Education (School Infrastructure) NSW Liverpool Boys and Girls High School*, Prepared for Department of Education (School Infrastructure) NSW by Coffey Services Australia Pty Ltd dated 07 November 2019 (Coffey 2019a)

⁴ *Asbestos and Hazardous Materials Pre-Demolition Survey, Department of Education (School Infrastructure) NSW*, Prepared for Department of Education (School Infrastructure) NSW by Coffey Services Australia Pty Ltd dated 22 November 2019 (Coffey 2019b)

⁵ *Environmental Peer Review and Strategic Advice – Liverpool Boys and Girls High School*, Prepared for Department of Education (School Infrastructure) NSW, care of Colliers, by JBS&G Australia Pty Ltd dated 13 December 2023. (JBS&G 2023)

⁶ *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended 2013). National Environment Protection Council (NEPC 2013)

1.4 Statement of Significance

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed development, it is determined that:

- The extent and nature of potential impacts are low, and will not have significant adverse effects on the locality, community and the environment; and
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community.

1.5 REF Deliverable Requirement Reporting

This DGI report accompanies a broader REF that seeks approval for the proposed redevelopment of LBGHS and addresses the following REF deliverables outlined below in **Table 1.1**.

Table 1.1: REF Deliverable Requirements

Requirement	Y	N	N/A	Comments
Contamination				
Have either of the following been prepared to inform the REF: • a Preliminary Site Investigation (PSI) and/or Detailed Site Investigation (DSI) that conclude that there is a low risk of contamination and that the site is suitable for the use of the site as a school; or • a PSI and/or DSI and a Remediation Action Plan (RAP)?	☐	☒	☐	DGI prepared in conjunction with the SCA which functionally serve as a PSI and DSI assessing the site suitability. See Section 1.1 , Section 4.1 and Section 13 . As noted in Section 13 , a RAP is recommended to outline the remedial scope of works to make the site suitable.
Does the PSI, DSI and RAP address all the potential sources of contamination mentioned in the various report?	☒	☐	☐	See Section 4 , Section 6 and Section 7.1 .
If the DSI or RAP identifies that limited further testing is required, has this been incorporated as a mitigation measure in the REF?	☐	☐	☒	No further testing required.
If remediation is required, does the REF determine if the remediation is Category 1 or 2 having regard to the Hazards and Resilience SEPP?	☐	☐	☒	Remediation procedure to be outlined in the RAP. See Section 12.5 and Section 13 .
Does the REF include an interim statement from a Site Auditor confirming that the RAP is appropriate?	☐	☒	☐	
If no interim statement, does the RAP set out actions to remediate all potential sources of contamination?	☐	☐	☒	Remediation procedure to be outlined in the RAP. See Section 12.5 and Section 13 .
Does the REF summarise investigations undertaken and conclude that contamination risk has been appropriately addressed in accordance with the Hazards and Resilience SEPP?	☒	☐	☐	See Section 1.1 , Section 4 , Section 6 , Section 7.1 and Section 11.1 .
Has the PSI, DSI and/or RAP concluded that the proposal would not be likely to result in significant environmental effects as a result of contamination and/or contamination management?	☒	☐	☐	See Section 1.5 and Section 13 .

Does the REF list any mitigation measures identified in the assessment and incorporate them into the design where applicable?	☒	☐	☐ See Appendix A.
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2. Site Conditions

2.1 Site identification

The site details are summarised in **Table 2.1**. The location of the site is provided in **Figure 1**.

Table 2.1: Site Identification Details

Lots/DPs	Part of Lot 1 DP 1137425
Site Address	18 Forbes Street, Liverpool, NSW
Local Government Authority	Liverpool City Council
Site Area	Approximately 3.3 hectares
Approximate MGA Coordinates (GDA2020 MGA56) (Site Centre)	E: 308799.90 N: 6245109.97
Site Zoning	Zone SP2 - Infrastructure
Proposed Use	Secondary Educational Land Use (high school)
Historical and Current Use	Secondary Educational Land Use (high school)

2.2 Site Description

The site was inspected on 7 January 2025 by one of JBS&G's suitably qualified and experienced environmental consultants trained and experienced in the identification of site contamination. A photographic log is provided as **Appendix B**. The site layout is shown on **Figure 2**.

The site is a rectangular parcel of land located on the corner of Lachlan Street and Forbes Street with a sloping topography from the north-west to the south-east, in the direction of Burnside Drive.

Multiple buildings are established within the site, varying in age of construction. Buildings onsite were either brick, timber cladding or prefabricated demountable, with the highest building reaching a maximum of two-storeys. Cut and fill practices were identified in the north-western portion of the site, expressed through retaining walls directly east of the Forbes Street carpark and Block A. Ground surfaces consisted of bare earth, bitumen, concrete, grass, and synthetic turf.

Recreational space of the site grounds is in the eastern portion of the site pertaining to multi-purposes courts established on a concrete foundation and an open field further south consisting of grass cover. Equipment associated to the use of the recreational spaces is stored with a steel storage shed.

2.3 Surrounding Land Use

The current land uses of adjacent properties or properties within the nearby surrounding areas are discussed below.

- **North:** Lachlan Street, High density residential housing, and beyond, Hume Motorway and Warwick Farm Station;
- **East:** Gulyangarri Public School, Burnside Drive, T2/T3/T5 suburban railway lines, and commercial/industrial warehouses and Liverpool Water Recycling Plant;
- **South:** Liverpool Girls High School, Liverpool Hospital, Liverpool TAFE, rail corridor, and Georges River;
- **West:** Forbes Street, high density residential Housing and church.

2.4 Topography

Review of NSW Topographic Maps available through NSW Spatial Services⁷ indicated that the site is sloping from the north-west to the south-east, in the direction of Burnside Drive and the rail corridor. The site lies at elevations between 9 m Australian Height Datum (AHD) in the south-east of the site and 14 m AHD in the north-west. The site is consistent with the general topography of the area which slopes south-east towards the Georges River located approximately 400 m to the south of the site, as indicated in **Figure 1**.

2.5 Geology

Based on a review of the Penrith 1:100,000 Soil Landscape Sheet (NSW DP&E 2010a⁸) the assessment area is within the Blacktown Residual soils landscape, which generally comprise of shallow to moderately deep hardsetting mottled texture contrast soils, Red and Brown Podzolic Soils on crests grading to Yellow Podzolic Soils on lower slopes and in drainage lines.

Based on a review of the Penrith 1:100,000 Geological Sheet (NSW DP&E 2010b⁹), the area of investigation is underlain by Triassic Bringelly Shale, comprised of shale, carbonaceous claystone, claystone, laminate, fine to medium grained sandstone, coal and tuff. Bringelly Shale usually weathers to form moderately to highly reactive clay soils. Geology anticipated to the east of the site is Tertiary clayey quartzose sand, and clay.

Previous investigations (Coffey 2019) reported fill material comprising of clay and clayey sand soils. These materials were noted to extend to depths of up to 0.6 m below ground surface (bgs). Anthropogenic inclusions were noted within this material, comprising of ash. Natural material was identified underlying fill materials comprising clay and clayey sands.

2.6 Acid Sulfate Soils

The site is reported to lie within an area of no known occurrence of Acid Sulfate Soil Risk (ASS) according to *1:25,000 Acid Sulfate Soils Risk Mapping*, 2nd ed., Department of Land and Water Conservation, Sydney (DLWC 1998). This is consistent with the site's location and geological setting.

Based on the ASS Risk Map classification, no further consideration for management of acid sulfate soil is required.

2.7 Hydrology

The nearest surface water receptor is the Georges River, located approximately 400 m south of the site. There is the rail corridor with elevated rail lines and are several roads with urban drainage systems between the site and the river.

As discussed in **Section 2.2**, the site is comprised of a south-eastern sloping landscape. As the surface of the site is a combination of sealed and unsealed surfaces, rainfall within the site is expected to be collected by stormwater drainage systems in most sealed areas, which would otherwise flow downgradient of the site and infiltrate into the ground surface.

2.8 Hydrogeology

Groundwater is anticipated to be intermittently present as perched water at/near the residual clay soil and shale bedrock interface, with deeper groundwater in permeable zones in shale bedrock. Seepage groundwater

⁷ NSW Topographic Maps. Spatial Services | Department of Customer Service, accessed 27 November 2024.

⁸ Soil Landscape Series Sheet Penrith 1:100,000 sheet, The Soil Conservation Service of NSW, now Department of Planning and Environment 2010 (NSW DP&E 2010a)

⁹ Geological Series Sheet 9030 Penrith 1:100,000 sheet, NSW Department of Minerals and Energy Sydney, now Department of Planning and Environment 2010 (NSW DP&E 2010b)

flow is anticipated to be to follow local topography to the south/south-east, towards the Georges River. The presence of perched seepage groundwater will be largely influenced by local rainfall.

2.9 Meteorology

A review of average climatic data for the nearest Bureau of Meteorology monitoring location (Bankstown Airport AWS¹⁰) indicates the site is located within the following meteorological setting:

- Average minimum temperatures vary from 5.3 in July to 18.3 in January;
- Average maximum temperatures vary from 17.5 in July to 28.5 in January;
- The average annual rainfall is approximately 884.5 mm with rainfall greater than 1 mm occurring on an average of 82.2 days per year; and
- Monthly rainfall varies from 44.3 mm in September to 112.0 mm in March with the wettest periods occurring on average in January, February and March.

¹⁰ [Climate statistics for Australian locations \(bom.gov.au\)](https://www.bom.gov.au) Commonwealth of Australia, 2024 Bureau of Meteorology, Product IDCJCM0028 prepared at 28 November and accessed by JBS&G on 28 November 2024

3. Site History

3.1 Summary of Site History

A detailed site history is documented in the SCA (Coffey 2019a), as summarised in **Section 4**. A summary is provided below, including information from aerial photographs up to 2024.

The site appeared to be a cleared parcel of land between the 1930s and 1950s with three residential structures positioned along the eastern and western boundaries. Construction of the school infrastructure commenced in the early 1950s and continued through to the mid-1960s, where these buildings remain in-use to present day. The site remained relatively unchanged up to 2024 with minor additions of smaller buildings and recreational spaces to accommodate for the growing capacity of the school over the years.

There was no evidence of contaminated land notices/records pertaining to the site, which was not listed on the EPA's public contaminated land register.

4. Previous Investigations

The following reports were reviewed and considered as part of this DGI report:

- *Site Contamination Assessment, Department of Education (School Infrastructure) NSW Liverpool Boys and Girls High School*, Prepared for Department of Education (School Infrastructure) NSW by Coffey Services Australia Pty Ltd dated 07 November 2019 (Coffey 2019a).
- *Asbestos and Hazardous Materials Pre-Demolition Survey, Department of Education (School Infrastructure) NSW*, Prepared for Department of Education (School Infrastructure) NSW by Coffey Services Australia Pty Ltd dated 22 November 2019 (Coffey 2019b).
- *Environmental Peer Review and Strategic Advice – Liverpool Boys and Girls High School*, Prepared for Department of Education (School Infrastructure) NSW, care of Colliers, by JBS&G Australia Pty Ltd dated 13 December 2023 (JBS&G 2023).

4.1 Site Contamination Assessment

Department of Education (School Infrastructure) engaged Coffey to undertake a Site Contamination Assessment for the site as part of the wider Liverpool Education Precinct Development requiring an assessment for potential site contamination risks for the proposed development of Liverpool Primary School. Given the proposed land use for primary education, the investigation adopted assessment criteria associated with the residential with garden/accessible soils and primary schools land use scenario (Residential A) under NEPC (2013). JBS&G notes the current development only includes secondary (high) school facilities, which are treated under NEPC (2013) within the less sensitive Recreational C land use scenario.

Desktop review of regulatory records, and historical maps and imagery have identified COPC and areas requiring investigation to be areas of fill, impacts from historical use of pesticides or herbicides, and potential asbestos or lead contamination as a result of poor demolition practices and weathering of building materials.

An intrusive site investigation was conducted with combination of a systematic grid and targeted sample location approach, where 29 sample locations were advanced across the site as test pits (11), boreholes (10), surface grab samples (5) and hand augers (3). Coffey (2019a) sample locations within the current site boundary are shown on **Figure 3**.

From the samples submitted for laboratory analysis, results of the soil sampling were assessed against relevant NEPC (2013) criteria and noted the following:

- All samples results reported concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX), total recoverable hydrocarbons (TRH), semi-volatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), organochlorine pesticides (OCPs) and organophosphate pesticides (OPPs) below the laboratory limit of reporting (LOR).
- Concentrations of heavy metals were reported at most locations below the respective assessment criteria, with the exception of:
 - Copper (A08570) and zinc (A08509) exceeding ecological investigation levels (EILs) for urban residential and public open space for aged soils; and
 - Arsenic (TP07_0.1-0.2) exceeding health investigation levels (HILs) for residential soils.
- Asbestos was reported at sample location A08750 below the detection limit of 0.01 %w/w.

Based on these results, Coffey concluded the following:

- Asbestos reported in sample A08570 is considered friable asbestos in accordance with NEPC (2013) guidelines. The risks associated are currently reduced for students, considering access to the impacted

area is restricted by a locked doorway. Maintenance workers with access to the sub-floor area could be exposed to asbestos, if soils were disturbed.

- Localised hotspot of arsenic (TP07_0.1-0.2) is present in shallow soils located on the school oval. The extent of arsenic in soil warrants further investigation and assessment considering the potential risk via ingestion/inhalation and dermal contact exposure.
- Exceedances of copper and zinc are considered to be a result of residual metal wastes from building maintenance/construction. Corroded metal was reported to be within the location of the zinc exceedance. At present these exceedances are not expected to present an ongoing risk to ecology due to its location within the sub floor void beneath the buildings.

It is noted total chromium (III+VI) was reported in two samples (BH25_0.1-0.2 and BH26_0.1-0.2) at levels exceeding the adopted site criteria for hexavalent chromium (VI), however, were not reported as contamination, presumably as hexavalent chromium (VI) was reported below the laboratory limit of reporting (LOR) and the adopted criterion which applies specifically to hexavalent chromium (VI). It is noted that the reported total chromium concentrations do not exceed the chromium VI criterion associated with a secondary educational land use as is relevant to the current investigation.

Regarding the asbestos impacted sample location A08570, this location was noted in the SCA text as being present in the crawl space of Block A within LBHS. However, the sample location was instead shown on **Figure 3** of the SCA to be in the footprint of a building within LGHS and another sample location (A08526) within the LBHS Block A footprint. Given the ambiguity of the which sample location was located within the LBHS Block A footprint and the potential for mislabelling of sample location names, the impact has conservatively been assumed to be associated with the LBHS for the purposes of this investigation and that the identified asbestos impacted A08570 is located within LBHS Block A footprint in the position of A08526 as noted in the SCA. This is consistent with the body text of the SCA and descriptions of this impact. Given this assumption, the copper concentration reported for sample location A08570 exceeding ecological criteria is considered to also be present in the crawl space of Block A of the boys campus and within the boundary of the current investigation.

Of the sample locations which reported elevated concentrations of contaminants it is noted that only sample location A08570 and BH26 are located within the current site boundary. It is also noted that the chromium concentrations reported in BH26 fall below the relevant assessment criteria where a secondary educational land use is adopted.

Regarding the arsenic concentration exceeding health and ecological criteria at sample location TP07, this location is noted to be external to the current site boundary and below an on-grade hardstand car parking area.

Based on the conclusions of the SCA, recommendations were made to pursue further characterisation of the extent of arsenic and asbestos contamination to effectively determine the potential risks associated to site users, and to delineate and determine the level of remediation and/or management required prior to development.

4.2 Asbestos and Hazardous Materials Pre-Demolition Survey (Coffey 2019b)

Coffey conducted an asbestos and hazardous materials pre-demolition survey into the presence and likely risks of exposure to hazardous materials within the Liverpool Boys High School site. The hazardous materials survey involved the investigation and identification of Hazardous Materials inclusive of Asbestos Containing Materials (ACM). Other hazardous materials included Lead-Based Paint systems (LBP), Lead Containing Dust (LCD), Synthetic Mineral Fibres (SMF), Polychlorinated Biphenyls in light capacitors (PCB) and Ozone Depleting Substances (ODS) in accessible areas.

Based on site survey and laboratory analysis results, a register of hazardous materials was produced, in accordance with the requirements of the relevant Codes of Practice and Guidance Notes. Asbestos or other

Hazardous Materials remaining in situ will need to be detailed in the site-specific Hazardous Materials Register and Asbestos Management Plan as required by the Work Health and Safety Regulation, 2017.

The following hazardous materials and the form in which they take were identified during the asbestos and hazardous material pre-demolition survey as:

- Asbestos Containing Materials: Gable verge lining, vinyl floor tiles, security door lining, electrical backing board lining, ceiling panels, wall linings, heater unit insulation, waterproofing membrane, window caulking, eaves, awnings, and gaskets;
- Lead Based Paint: Concentrations of lead-based paint ranged from 0.13 %w/w to 0.41 %w/w identified with interior and exterior surfaces of the buildings onsite.
- Lead Containing Dust: Concentrations of lead containing dust ranged from 250 mg/kg to 2,700 mg/kg identified within the interiors of the buildings onsite.
- Synthetic Mineral Fibres: Suspected to be present in hot water units, ceiling battings, ceiling ducts, and roof sarking
- Ozone Depleting Substances: Various air conditioning units located on the exterior of the buildings and interior ducting of the buildings onsite.
- Polychlorinated Biphenyls: throughout the school, open, caged and cased light fittings

4.3 Environmental Peer Review and Strategic Advice (JBS&G 2023)

JBS&G was engaged by the Department of Education, care of Colliers, for the provision of environmental/contamination peer review and strategic advice to facilitate the redevelopment of the site. Advice followed JBS&G's review of the key findings identified in the SCA completed by Coffey (2019a), as summarised in **Section 4.1**, to assist with future contaminated land investigations and strategic planning for the redevelopment of the LBHS and LGHS.

JBS&G agreed with the following data gaps recommended by Coffey (2019a) within the SCA:

- Further characterisation and systematic sampling to assess the extent of arsenic contamination within surface soils adjacent to sample location TP07. This will determine the level of remediation and/or management required prior to development.
- Further characterisation and systematic sampling of the subfloor soils beneath Block A to be undertaken to further assess the potential risks to site users and contractors from asbestos. This should include sieving of soils to allow for assessment against relevant land-use NEPC (2013) criteria.

Additional data gaps were identified by JBS&G after review of key SCA findings which addresses:

- Additional sampling within the Block A crawl space (LBHS) to further characterise the extent of friable asbestos contamination identified by the SCA;
- Additional intrusive sampling to further characterise surface and subsurface soils across the site (utilising test pits in soft-scaped areas and boreholes in hardscaped areas) to ensure sufficient data coverage for the site and to bring the total number of samples into closer alignment with the NSW EPA (2022) *Contaminated land guidelines: Sample design part 1 – application*; and
- Assessment of PASS conditions to address data gaps outlined in SCA and JBS&G (2023).

Following these investigations, JBS&G recommended that a remedial action plan (RAP) be prepared to outline the remediation of the arsenic contamination historically identified and any further contamination that may be identified as part of any future in-ground investigations.

5. Data Gaps

As noted in **Section 4.1**, the SCA (Coffey 2019a) included recommendations for further characterisation and systematic sampling to assess the extent of arsenic at the historical sample location of TP07, and asbestos in the subfloor soils beneath Block A. It is noted that the elevated arsenic concentrations were identified external to the current site boundary and so are not considered relevant to the current investigation.

JBS&G (2023) noted in **Section 4.3** that additional data gaps based off the key findings of the SCA would incorporate further characterisation of the extent of friable asbestos contamination within the Block A crawl space, further characterisation of surface and subsurface soils across the site to ensure sufficient data coverage for the site, complying with the NSW EPA (2022) *Contaminated land guidelines: Sample design part 1 – application*, and an assessment of PASS conditions in the proposed basement area.

6. SCA Conceptual Site Model

A conceptual site model (CSM) was presented in the SCA (Coffey 2019a) and is summarised below. The CSM is reviewed subsequent to assessment of the results of the data gap investigation and revised later in this report where appropriate. As noted in **Section 4.1**, the SCA considered a primary educational land use (Residential A) scenario for the new Liverpool Primary School. Given the current investigation is being undertaken as part of the LBGHS redevelopment and the ongoing secondary educational land use, this revised land use (Recreational C) scenario consistent with NEPC (2013) is considered appropriate.

6.1 Potential Areas of Environmental Concern

Based on the history review and field observations from the site, and from available reports for environmental assessments previously undertaken within the site by Coffey, as summarised in **Section 4**, identified areas of environmental concern (AEC) have been categorised and are presented in (**Table 6.1**).

Table 6.1: Areas of Environmental Concern and Associated Contaminants of Potential Concern

Areas of Environmental Concern	Contaminants of Potential Concern
Uncontrolled Fill	Heavy Metals, TRHs, BTEX, PAHs, OCPs, OPPs, PCBs, and Asbestos
Historical Pesticide/Herbicide Use	OCPs and OPPs
Poor demolition practices or deterioration of buildings present	Asbestos and Lead

6.2 Potentially Contaminated Media

Fill material is considered to be a potentially contaminated media based upon the previous site assessment data which identified isolated surface and subsurface soils, and fill material impacted to varying degrees by arsenic, copper, zinc, and asbestos. No elevated hydrocarbon, pesticide or PCB concentrations were identified in fill.

As noted in **Section 4**, no impacts to natural soils were identified during previous investigations. No assessment of groundwater, ground gas or soil vapour was undertaken as part of the SCA. However given the limited quantities of fill, the presumed depth to groundwater and the restriction of contamination to surface soils, the risk of potential contamination to these media is considered low.

6.3 Potential for Migration, Exposure Pathways and Receptors

Contaminants generally migrate from site via a combination of windblown dusts, rainwater infiltration, groundwater migration 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 identified as part of the site history review, detailed site inspection and previous investigations are in the solid form (i.e. asbestos and heavy metals) and liquid form (e.g. pesticides).

As the south-east of the site was vacant with surface vegetation comprising predominantly grass cover acting to minimise the dust and water erosion potential of the site, the potential for the migration of contaminants via surface water runoff from the site was anticipated to be low. The balance of the site comprises

predominantly hardstand surfaces, from which surface water runoff is anticipated to flow across and into the surrounding stormwater drainage network.

Friable asbestos was identified in a sub-floor area restricted by a locked doorway, therefore reducing the potential for asbestos to be disturbed. The potential migration of asbestos fibres via dust is considered low given the restricted access of the sub-floor area.

The potential for rainwater infiltration to occur at the site was relatively high within the south-eastern portion of the site given the lack of impermeable surfaces, however the actual extent of infiltration will be dependent on the nature of the surface soils in relation to the extent of compaction and permeability of the surface soils. Across the balance of the site which comprise hardstand surface the potential for rainwater infiltration is considered low.

In the limited areas where rainfall penetrates the surface soils, this movement may result in vertical migration of contaminants through the soil profile to the soil- bedrock interface, this is likely to be intermittent and dependent on rainfall. Low permeability clay soils would limit vertical migration.

No elevated concentrations of COPC were noted within natural underlying soils or above background levels in groundwater.

Given the above lines of evidence, the potential for groundwater to pose an unacceptable risk to human and ecological health either on-site or at a downgradient receptor is considered to be low, and as such does not require further assessment.

Where any potential impacts to soil vapour are present it is anticipated that these would migrate along preferential pathways created by subsurface infrastructure within fill material and through cracks present within deeper natural shale materials.

Sensitive receptors at the site under the current site conditions and in the immediate vicinity are considered to include:

- Future users of non-paved areas who may potentially be exposed to COPC through direct contact with impacted soils and/or inhalation of dusts / fibres associated with impacted soils; and/or
- Excavation / construction / maintenance workers conducting activities at the site, who may potentially be exposed to COPCs through direct contact with impacted soils present within excavations and/or inhalation of dusts / fibres associated with impacted soils; and
- Flora species to be established on the vegetated areas of the site.

7. Sampling and Analysis Quality Plan

7.1 Data Quality Objectives

Data quality objectives (DQOs) were developed for this DGI, as discussed in the following sections.

7.1.1 State the Problem

Further assessment of the site is required in order to appropriately characterise surface and subsurface soils across the site to ensure sufficient data coverage to identify COPCs that could impact educational land use suitability. In addition, further characterisation of site soils and an assessment, friable asbestos in impacted soils beneath Block A is required to confirm the extent of remediation required to make the site suitable for development and educational use. An assessment of PASS conditions is also required to understand whether ASS management is required during proposed basement excavation works.

7.1.2 Identify the Decision

The decisions required to be made for the investigation are:

- Has an appropriate sampling density been achieved in order to assess site suitability for the ongoing secondary educational land use?
- Has the extent of friable asbestos impacts within the Block A crawl space requiring remediation for educational land use been confirmed?
- Has the presence of potential acid sulfate soils (PASS) been identified in the proposed basement area?
- Has the contamination status of the broader site been confirmed with regards to that previously documented?
- Is a site management strategy required for the site?

7.1.3 Identify Inputs to the Decision

The following inputs are required in order to make the stated decisions:

- Previous environmental data available for the site;
- Soil sampling from test pits and boreholes, to assess for the presence of potential chemical COPCs and asbestos and ASS conditions;
- Soil environmental data, consisting of assessment for asbestos fibres collected by soil sampling and analysis;
- Laboratory analysis data for identified COPCs;
- Site assessment criteria for potentially impacted media for COPCs; and
- Confirmation that data generated by sampling and analysis are of an acceptable quality to allow reliable comparison to assessment criteria.

7.1.4 Define the Study Boundary

The study boundaries have been defined laterally as the site extent as shown on **Figure 1** and **Figure 2**. The vertical extent of the assessment is limited to a maximum depth of 3.3 m bgs as the final depth of the deepest borehole completed for the investigation.

Due to the project objectives, seasonality was not assessed as part of this investigation. Data was therefore representative of the timing and duration of the investigation. Data collected as part of the previous investigation should also be considered for a broader characterisation of the site.

7.1.5 Develop a Decision Rule

A summary of the decision rules to be adopted for each of the environmental issues required to be addressed are outlined in **Table 7.1** below.

Table 7.1: Summary of Decision Rules

Decisions Required to be Made	Decision Rule
1. Has an appropriate sampling density been achieved in order to assess site suitability for the ongoing secondary educational land use?	Have additional characterisation works been undertaken to provide sufficient data coverage for the revised site boundary? If so, the answer to the decision question is Yes. Otherwise, the answer is No.
2. Has the extent of friable asbestos impacts within the Block A crawl space requiring remediation for educational land use been confirmed?	Have characterisation works been undertaken to address the identified data gap, such that decisions can be made regarding the extents of friable asbestos impacts within the Block A crawl space requiring remediation and/or management? If so, the answer to the decision question is Yes. Otherwise, the answer is No.
3. Has the presence of potential acid sulfate soils (PASS) been identified in the proposed basement area?	Has additional sampling been undertaken to provide additional analytical data for the presence of potential acid sulfate soils (PASS) in the proposed basement area? If so, the answer to the decision question is Yes. Otherwise, the answer is No.
4. Has the contamination status of the broader site been confirmed with regards to that previously documented?	Have characterisation works been undertaken to determine the type of contamination and concentrations of COPCs onsite and have these been compared to the levels which have previously been assessed? If so, the answer to the decision question is Yes. Otherwise, the answer is No.
5. Is a site management strategy required for the site?	Has any contamination been identified that requires management to facilitate the redevelopment? If so, the answer to the decision question is Yes. Otherwise, the answer is No.

7.1.6 Specific Limits on Decision Errors

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 the NSW EPA, NEPC (2013), appropriate data quality indicators (DQIs) used to assess quality assurance/quality control (QA/QC), and standard JBS&G procedures for field sampling and handling.

To assess the usability of the data prior to making decisions, the data was assessed against pre-determined DQIs for precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS parameters). The acceptable limit on decision error is 95% compliance with DQIs.

The pre-determined DQIs established for the project are discussed below in relation to the PARCCS parameters and are shown in **Table 7.2**.

- **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** – measures 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 to which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collecting 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, and 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. The completeness goal is set at there being sufficient valid data generated during the study.
- **Sensitivity** – expresses the appropriateness of the chosen field and laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted site assessment criteria.

Table 7.2: Data Quality Indicators

Data Quality Indicators	Frequency	Data Quality Criteria
Precision		
Field duplicate (intra laboratory)	1 / 20 samples/media	<50% RPD ¹
Field Triplicate (Inter laboratory)	1 / 20 samples/media	<50% RPD ¹
Laboratory Duplicates	1 / 20 samples/media	<50% RPD ¹
Accuracy		
Surrogate spikes	All organic samples	70-130% recovery
Laboratory control samples	1 per lab batch	70-130% recovery
Matrix spikes	1 per lab batch	70-130% recovery
Representativeness		
Sampling appropriate for media and analytes	All samples	– ²
Samples extracted and analysed within holding times.	-	TRH/BTEX/PAHs/OCPs/OPPs – 14 days; heavy metals – 28 days; sPOCAS – 24 hrs or greater if preserved/frozen; Asbestos – no holding time
Laboratory blanks	1 per lab batch	<Limit of Reporting (LOR)
Trip spike	1 per lab batch (soil only)	70-130% recovery
Storage blank	1 per lab batch (soil only)	<LOR
Comparability		
Standard operating procedures for sample collection & handling	All Samples	All Samples
Standard analytical methods used for all analyses	All Samples	National Association of Testing Authorities (NATA) accreditation
Consistent field conditions, sampling staff and laboratory analysis	All Samples	All samples ²
Limits of reporting appropriate and consistent	All Samples	All samples ²
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		95% compliance
Data from critical samples are 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 judgment will be made as to whether the excess is critical in relation to the validation of the data set, or an unacceptable sampling 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.

7.2 Optimise the Design of Obtaining Data

The purpose of this step is to identify a resource-effective field investigation sampling design that generates data that are expected to satisfy the criteria specified in the preceding steps of the DQO process. This step provides a general description of the activities necessary to generate and select data collection designs that satisfy decision performance criteria.

Various strategies for developing a statistically based sampling plan are identified in *Contaminated Land Guidelines: Sampling design part 1 - application* (EPA 2022), including judgemental, random, systematic and stratified sampling patterns. The adopted sampling methodology is discussed in the following sections.

7.2.1 Soil Investigation Program

In total 24 sample locations were advanced across the site redevelopment as part of the DGI investigation. Nine (9) test pits and ten (10) boreholes were advanced across the redevelopment, and five (5) surface soil samples were collected within the sub-floor area of Block A. JBS&G sample locations are shown on **Figure 4**. Sample locations were advanced utilising a combination of a targeted and stratified approach, in order to achieve a broad data coverage of the site, and target known impacted areas and those areas with higher potential for contamination.

Five surface soil samples (SS01 to SS05) were advanced within the subfloor space of Block A to delineate the known asbestos impact. It is noted that the northern portion of the Block A subfloor space was unable to be inspected and sampled due to access restrictions.

The remainder of sample locations (TP101 to TP109 and BH101 to BH110) were advanced on a stratified approach to provide broad coverage for the site whilst targeting areas considered to have higher potential for contamination, such as retaining walls where filling is likely to have occurred.

With consideration to the thirteen (13) sample locations advanced across the site as part of the previous investigation, and given the history of the site, the sampling approach outlined above is considered sufficient to provide data coverage for the site, and in general accordance with the NSW EPA (2022) *Contaminated land guidelines: Sample design part 1 – application*.

7.2.2 Soil Sampling Methodology

Stratified sampling was completed by combination of a backhoe to excavate test pits to a maximum 1.6 m and a drill rig to bore to a maximum of 3.3 m depth under the supervision of an experienced JBS&G consultant. Boreholes were advanced utilising a combination of push tube and 150 mm solid flight auger attachments to provide adequate screening of site fill materials for the COPC and appropriate collection of representative soil samples. This depth was considered sufficient for the investigation given the depth of underlying natural materials, the number of previous locations already investigated and the likely extent of soil to be disturbed as part of the development.

For all test pits samples were collected directly from excavation spoil via the use of gloved hand grab, with a new pair of nitrile gloves used for each sample. For boreholes, chemical soil samples were collected from push tubes and asbestos soil samples were collected from solid flight auger soils following asbestos quantification as detailed in **Section 7.2.3**.

Targeted soil samples collected from within the Block A subfloor space were collected directly from surface soils (<0.1 m bgs) via a hand grab, using a fresh pair of nitrile gloves for the collection of each new sample.

No reusable sampling equipment was utilised during soils sampling activities.

During the collection of soil samples, features such as seepage, discolouration, staining, odours, and other indicators of contamination were noted where encountered/observed.

Collected samples were immediately transferred to laboratory supplied sample jars and bags. The sample jars were then transferred to a chilled icebox for sample preservation prior to and during shipment to the testing laboratory.

A chain-of-custody (COC) form were completed and forwarded with the samples to the testing laboratory. Based upon field observations, samples were analysed in accordance with the laboratory schedule provided in **Table 7.3**.

Not all samples collected were analysed. All samples will remain at the primary laboratory for a period of two months for possible future analysis (subject to holding times) if required following the receipt of sample results.

7.2.3 Asbestos Quantification of Accessible Fill Based Soils

Asbestos quantification sampling was conducted at test pit and borehole sample locations. Asbestos in soil was quantified by the methods advised in WA DoH (2009¹¹) and NEPC (2013) guidelines by appropriately trained JBS&G environmental consultants experienced in the identification of asbestos. The following method was adopted during drilling works:

- Sample locations were advanced through the fill soil profile at 1 metre intervals, or to the depth of different strata (whichever was shallower) and extended into the underlying natural soils;
- ACM was quantified by the methods advised in NEPC (2013), in accordance with WA DoH (2009), with 10 L samples from boreholes collected (per metre/fill stratum). All identifiable ACM or FA was collected in separate sample bags (*i.e.*, one sample bag for bonded ACM and one sample bag for FA each per 1 m interval/fill stratum) for weighing using an independently calibrated scale (0.01 g accuracy) to enable asbestos in soil concentrations to be calculated;
- Where more than one distinct fill material was observed, separate asbestos calculation was completed for each material type;
- The 10 L sample was sieved using a 7 mm sieve and any ACM fragments retained in the sieve were collected, photographed, bagged and then weighed using calibrated scales; and
- A field observation log for each sampling location was recorded, noting the presence, type and status or absence of asbestos, ground surface details (e.g., concrete, exposed soils or grass) lithological description, moisture, volume of spoil quantified at each depth and any other observable contamination indicators such as staining, malodorous materials, ash and slag.

Asbestos percentages in soil are calculated as per the formula below:

$$\%w/w \text{ asbestos in soil} = \% \text{ asbestos content} \times \frac{(\text{bonded ACM or FA})(kg)}{\text{soil volume (L)} \times \text{soil density (kg/L)}}$$

For bonded ACM, an asbestos content of 15% was used, in accordance with enHealth (2013¹²).

For FA, a conservative asbestos content of 100% was used.

7.2.4 Duplicate and Triplicate Sample Preparation

At selected sample points sufficient soil and water was collected to provide primary, blind (intra-lab) duplicate and split (inter-lab) duplicate samples for key COPC. The collected samples were divided into three samples with minimal disturbance to reduce the potential for loss of volatiles and placed in three clean glass jars, sample bags and sampling bottles as appropriate. Soil samples were not homogenised in order to minimise

¹¹ *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*. Western Australia Department of Health. Dated May 2009 (WA DOH 2009), as endorsed by NEPC (2013); and

¹² *Asbestos, A guide for householders and the general public*, enHealth, February 2013 (enHealth 2013).

the loss of volatiles. Each sample was labelled with primary, duplicate or triplicate sample identification before being placed in the same chilled esky for transport to the laboratory.

7.2.5 Laboratory Analysis

JBS&G contracted Eurofins MGT (Eurofins), a NATA accredited laboratory, as the primary laboratory, and Envirolab Service Pty Ltd (Envirolab), as the secondary laboratory, for the required chemical analyses. In addition, the laboratories were required to meet JBS&G's internal QA/QC requirements. The laboratory analysis schedule is summarised in **Table 7.3**.

Table 7.3: Analytical Schedule

Media	Site	Number of Sampling Locations	Analytes
Soil	Liverpool Boys High School	17	Heavy Metals: 20 samples; TRHs: 20 samples; BTEXs: 20 samples; PAHs: 20 samples; OCPs/OPPs: 20 samples; CEC, pH, TOC: 6 samples; Field AQs: 17 samples; Asbestos in Soil (500 mL per NEPM): 20 samples; Asbestos Identification: 7 samples; and sPOCAS (PASS): 6 samples
	Liverpool Boys High School Block A Crawl Space	5	Asbestos in Soil (500 mL per NEPM): 5 Samples Asbestos Identification: 3 Samples

In addition to the above primary analyses, to address the DQIs, field split and blind duplicate soil samples were analysed for key COPCs at a rate of at least 1/20 primary samples and a single trip spike and single trip blank accompanied the soil sampling event(s).

8. Assessment Criteria

8.1 Regulatory Guidelines

Development of site assessment criteria and the associated scope of the investigation was undertaken with consideration to aspects of the following guidelines, as relevant:

- *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)*, National Environment Protection Council (NEPC 2013);
- *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme*, 3rd Edition, NSW EPA, 2017 (NSW EPA 2017);
- *Contaminated land guidelines: Consultants reporting on contaminated land*, April 2020 (NSW EPA 2020);
- *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*. Western Australia Department of Health. Dated May 2009 (WA DOH 2009), as endorsed by NEPC (2013);
- *Contaminated Land Guidelines: Sampling design part 1 - application* (EPA 2022); and
- *CRCCARE Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater*, 2011, Friebe and Nadebaum, Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRCCARE 2011).

8.1.1 Soil Assessment Criteria Selection

As per the decision process for assessment assessing urban redevelopment sites (EPA 2017), a set of assessment criteria from EPA made and endorsed guidelines were used for evaluation of site contamination data collected for this assessment.

Soil assessment guidelines have been selected assuming a secondary level educational land use for the site. As noted in **Section 4.1**, the previous investigation was undertaken to determine site suitability for use as a primary educational land use and compared results to relevant assessment criteria. The criteria described below are considered suitable for the current investigation given the proposed secondary school land use and consideration to NEPC (2013). A discussion of historic analytical results for the site compared to the updated site assessment criteria is included in **Section 12.4**.

Analytical data from the soil investigation was compared to the following NEPC (2013) criteria:

- Health Based Investigation Levels (HILs) for recreational (HIL-C) land use including secondary schools;
- Health Screening Levels (HSLs) for direct contact with petroleum hydrocarbons for recreational land use including secondary schools;
- HSLs for Asbestos in Soil for recreational (HSL-C) land use including secondary schools;
- Ecological Screening Levels (ESLs), coarse grained soil, urban residential and public open space land use scenario and includes secondary schools; and
- Site Specific Ecological Investigation Levels (EILs) urban residential and public open space land use scenario and includes secondary schools.

As noted by CRC CARE (Technical Report No.39¹³) a higher reliability ESL of 20 mg/kg is considered appropriate for the assessment of potential risks to ecological receptors and is consistent with NEPC (2013) guidance

¹³ CRC CARE. (2017). *Risk-based Management and Remediation Guidance for Benzo(a)pyrene*. Technical Report no. 39: Cooperative Research Centre for Contamination Assessment and Remediation of the Environment.

indicating heavier PAHs such as B(a)P are not readily taken up by plants. This ESL has been adopted for this investigation.

Table 8.1 below details derived soil EILs as per NEPC (2013) guidance. Note, pH and cation exchange capacity (CEC) are based on the average values reported as part of the current investigation. All EIL values are in mg/kg unless otherwise specified.

8.1: Derivation of Soil EILs

Physical Parameters	
pH (pH units)	Cation Exchange Capacity (CEC) (meq/100g)
6.2	10.1
Investigation Levels	
Contaminant	EIL Commercial and Industrial Land Use (mg/kg)
Arsenic	100
Chromium (III)	190
Copper	190 ¹
DDT	180
Lead	1100
Naphthalene	170
Nickel	170 ²
Zinc	400 ³

¹ Selected utilising the pH value to determine the most conservative EIL

² Selected based on the value for CEC.

³ Selected based on value for pH and CEC resulting in the most conservative EIL.

PASS laboratory data were compared against site action criteria published in the ASSMAC (1998¹⁴) guidelines for fine soil, with 1-1000 tonnes of disturbed material. The assessment criteria are presented in **Appendix D, Table C**.

Where there is no NSW EPA endorsed threshold for an individual COPC, the laboratory LOR has been adopted as an initial screening value for the purposes of this assessment.

In addition to the above, for the characterisation soil sample sets, statistical analysis of the data was undertaken where appropriate and in accordance with relevant guidance documents. The following statistical criteria were adopted with respect to soils, where appropriate:

- Either: the reported concentrations are all below the site criteria;
- Or: the average site concentration for each analyte is below the adopted site criterion; no single analyte concentration exceeded 250% of the adopted site criterion; and the standard deviation of the results is less than 50% of the site criterion; and
- And: the 95% upper confidence limit (UCL) of the average concentration for each analyte is below the adopted site criterion.

Statistical analysis is not considered appropriate for assessment of asbestos in soil results consistent with NEPC (2013) and WA DOH (2009) guidance.

¹⁴ Stone, Y, Ahern C R, and Blunden B (1998). Acid Sulfate Soils Manual 1998. Acid Sulfate Soil Management Advisory Committee, Wollongbar, NSW, Australia (ASSMAC 1989).

9. Quality Assurance/Quality Control

An assessment of QA/QC was undertaken by calculation of DQIs for the data generated as part of the assessment activities.

Compliance with the pre-determined DQIs established for characterisation of the assessment area is discussed in **Appendix E** in relation to PARCCS parameters presented in **Section 7.1.6**.

The field sampling, inspection and handling procedures produced QA/QC results which indicated that the data set is of an acceptable quality and suitable for use in site characterisation.

The NATA certified laboratory results indicate that the project laboratories were generally achieving levels of performance within their recommended control limits during the period when the samples from this program were analysed.

On the basis of the results of the field and laboratory QA/QC program, the data set is of an acceptable quality upon which to draw conclusions regarding the environmental condition of the assessment area.

10. Results

The following sections summarise key observations and findings from the current DGI compared against the adopted criteria presented in **Section 8**.

Historical and current (DGI) sample locations are provided in **Figure 3** and **4**, respectively. Lithological logs (current) are provided in **Appendix C**.

A photographic log showing observed site conditions and soil material during completion of the DGI is provided as **Appendix B**.

10.1 Field Observations

Fill Materials

Fill materials were encountered across the entire assessment area ranging from surface to 0.0 - 1.0 m bgs. Fill generally comprised a brown silty/gravelly silty clay. Variable occurrences of minor organics (leaf litter, roots, and rootlets), ash, brick, ceramic, concrete, glass, igneous and sandstone gravels, metal, and tile inclusions. Anthropogenic inclusions were noted to be present in higher concentrations in sample locations advanced in the western portion of the site. These observations of fill material were consistent with those reported in previous investigations.

Fragments of bonded ACM were observed within two (2) sample locations (TP105 and TP107) within surface material (<0.1 m bgs) at TP107 (single fragment) and sub-surface material (0.1 – 0.6 m bgs) at TP105 (4 fragments). Noting that a single ACM fragment was identified at TP107, inspection of surfaces in the surrounding area was conducted, and no additional ACM materials were identified. Fragments of ACM were removed from sample locations for weighing as part of AQ.

Fragments of bonded ACM were also identified across the surface of the sub-floor soils below Block A of Liverpool Boys High School and appeared to be related to residual wastes from building maintenance/construction.

No staining or odours were noted in fill materials at any sample locations.

Natural Soil

Natural soils were encountered underlying fill materials at all sample locations. Natural soils generally comprised orange/brown/grey/red silty/sandy clay with minor inclusions of rootlets and shale gravels.

10.2 Analytical Results

The following sections provide a summary of analytical results of the current investigation.

Summary analytical data for soil is provided in **Table A, Appendix D**. Results of asbestos quantification area included in **Table B, Appendix D**.

Exceedances of the adopted site criteria are shown in **Figure 5**.

Laboratory documentation is provided in **Appendix E**.

10.2.1 Heavy Metals

All concentrations were below the adopted human health and ecological assessment criteria with the exception of a nickel concentration within sample BH107_0.0-0.1 (180 mg/kg) exceeding the ecological criterion of 170 mg/kg.

Given the exceedance of sample BH107_0.0-0.1 was <250% of the EIL criterion, the site data of zinc concentrations was statistically assessed using the 95 % UCL in accordance with NEPC (2013). The samples utilised for the statistical assessment were all derived from similar fill material which generally comprised a

sandy gravel or gravelly sand matrix. The number of samples used in the assessment was 8 (n=8); the maximum detectable value was 170 mg/kg and the minimum value was <5 mg/kg. The standard deviation of the statistical assessment was 54.85 mg/kg, less than 50% of the EIL criterion. As such, the data set is considered suitable for statistical assessment. The 95% UCL for zinc concentrations in fill material at the site was assessed as 71.86 mg/kg, below the applicable EIL, and calculations are provided in **Appendix G**.

10.2.2 TRH/BTEX

All concentrations were below the adopted human health and ecological assessment criteria with the exception of a >C16-C34 fraction concentration within sample BH103_0.0-0.1 of 1900 mg/kg, exceeding the ecological criterion of 1300 mg/kg.

As the laboratory level of reporting (LOR) was raised, additional silica gel clean-up analysis was completed on this sample. These additional results indicated that the >C16-C34 fraction was less than the LOR, suggesting the TRH have a natural organic rather than petroleum source.

10.2.3 PAHs

All concentrations were below the adopted human health and ecological assessment criteria.

10.2.4 OCPs/OPPS

All concentrations were below the adopted human health and ecological assessment criteria.

10.2.5 Asbestos

AQ and laboratory analysis results are presented in **Table B, Appendix D**.

10.2.5.1 Broader Site Assessment

A total of 36 AQ samples were completed across the site, from which 20 primary 500 mL samples were submitted for laboratory analysis consistent with NEPC (2013). Results are as follows:

- ACM materials were identified in fill in 2 of the 17 sample locations;
- Asbestos (as ACM) was visible in surface soils (<0.1 m bgs) at TP107, above the adopted assessment criterion of 'no visible asbestos in surface soils';
- Asbestos (as ACM) concentrations in subsurface soils were above the adopted assessment criterion of 0.05% (w/w) in sample TP105_0.1-0.6 (0.123 %w/w); and
- No Asbestos (as AF/FA) concentrations were reported in all samples analysed by the laboratory.

It is noted that within TP107 a single fragment was observed within surface soils, which was removed as part of AQ. Inspection of surfaces in the surrounding area was conducted, and no additional ACM fragments were identified.

10.2.5.2 Block A Crawl Space

A total of 5 AQ samples were completed within the accessible portion of the Block A crawl space, from which 5 primary 500 mL samples were submitted for laboratory analysis consistent with NEPC (2013). Results are as follows:

- ACM materials were identified on the surface of the fill soils within the Block A crawl space; and
- No Asbestos (as AF/FA) concentrations were reported in all samples analysed by the laboratory.

10.2.6 sPOCAS (ASS)

Analytical results from the sPOCAS procedure undertaken by the laboratory are summarised in **Table C, Appendix D**.

All representative natural soil samples reported Titratable Peroxide Acidity (TPA) below the adopted action criterion for fine soils (based on 1-1000 tonnes disturbed) of 62 mol H⁺/t, with the exception of TP108_1.4-1.5 (76 mol H⁺/t). However, Titratable Sulfidic Acidity (TSA) was reported below LOR and adopted criterion of 62 mol H⁺/t.

Peroxide Oxidisable Sulfur (% S_{POS}) at TP108_1.4-1.5 was below the adopted site action criterion for fine soils of 0.1 % S_{POS} (based on 1-1000 tonnes disturbed). While the TPA at TP108 location exceeded action criteria, the lower TSA and lack of oxidisable sulfur indicates the natural soil at TP108 is acidic but not acid sulfate.

11. Revised Conceptual Site Model

The information herein provides a revised CSM for the site, incorporating the findings of the DGI documented herein, noting the CSM remains largely consistent with that outlined in **Section 6**. It is noted that the below considers the revised secondary educational land use scenario rather than the primary educational land use scenario which was considered for the previous investigation.

11.1 Extent of Known Contamination

Based on a review of the previous investigation and the findings of this DGI, the sources of soil contamination/impacts in the form of asbestos at the site is likely to be associated with the demolition of historic site structures and the intermingling of these building materials including asbestos within the fill materials at the site.

As discussed in **Section 10**, ACM was identified in two sample locations, with concentrations of ACM exceeding the HSL criterion for asbestos within soils at TP105_0.1-0.6 and exceeding the HSL criterion of 'no visible asbestos within surface soils' at TP107_0.0-0.2. Noting that a singular fragment was identified at TP107, inspection of surrounding area was conducted, and no additional ACM materials were identified. As noted above, asbestos fragments were removed from the site for weighing as part of AQ. Fragments of bonded ACM were also identified throughout subfloor soils below Block A of Liverpool Boys High School.

The copper exceedance historically reported at sample location A08570 (which is indicated as being in the Block A subfloor) is noted to still represent an exceedance of the ecological criteria adopted as part of the current investigation. This chemical concentration considered to be a result of residual metal wastes from building maintenance/construction. As noted in **Section 4.1** this exceedance is not expected to present an ongoing risk to ecology due to its location within the sub floor void beneath the buildings.

Those chromium concentrations reported as part the previous investigation which unclear as to whether they represented contamination due to exceeding health criteria are noted to fall below the revised adopted health criteria for the current investigation and are not considered to represent contamination.

The arsenic concentration reported as part of the SCA is noted to be located external to the current site boundary below the revised health criterion (300 mg/kg).

Exceedances of the adopted site criteria are shown in **Figure 5**.

The findings of this investigation are generally consistent with that which was previously reported. The asbestos impacted area appears to be limited to the sub-floor area below Block A and fill material used in the north-western portion of site to raise the land against the retaining wall.

11.1.1 Human and Ecological Receptors

Per the CSM presented in **Section 6**. As the only contaminant exceeding criteria is asbestos, with the exception of copper concentrations in soils restricted to the subfloor space of Block A, humans are potential receptors based on the data reported to date.

11.1.2 Potential and Complete Exposure Pathways

Per the CSM presented in **Section 6**, the data to date identifies asbestos in soil and as such the potential exposure pathway to human receptors relates to inhalation of fibres should respirable asbestos fibres be released from the soil and/or asbestos cement bonding matrix and become airborne. It is noted no respirable fibres have been reported in samples collected from site.

The historic elevated concentrations of copper within surface soils in the subfloor space of Block A are noted to be restricted to this space and as such as considered to not represent a potential exposure pathway for any ecological receptors, given no migration by wind or surface water is possible and there is no vegetation in this area.

11.1.3 Potential for migration from site

Per the CSM presented in **Section 6** specific to asbestos in soils, whereby there is a potential for asbestos fibres to migrate via wind-blown dust should fibres be released from the soil and/or asbestos cement bonding matrix in ACM fragments should they become weathered or abraded.

12. Assessment of Decision Rules

12.1 Achieving the appropriate sampling density

Has an appropriate sampling density been achieved in order to assess site suitability for the ongoing secondary educational land use?

As noted in **Section 7.2.1**, additional sample locations were advanced across the site utilising a combination of a targeted and stratified sampling approach in order to address the data gaps outlined in **Section 5**. This included achieving a sampling density and spread in order to appropriately characterise the site surface and sub-surface soils. With consideration to the historic sample locations across the site, the understanding of the site history and the additional sampling undertaken as part of the DGI, it is the sampling approach is considered sufficient to provide data coverage for the site, and in general accordance with the NSW EPA (2022) *Contaminated land guidelines: Sample design part 1 – application*.

12.2 Confirming the extent of friable asbestos within the Block A crawl space

Has the extent of friable asbestos impacts within the Block A crawl space requiring remediation for educational land use been confirmed?

As noted in **Section 4.1**, there was uncertainty as to whether the friable asbestos impact was associated with Block A in LBHS (as described in Coffey 2019) or Block J in LGHS (where sample A08570 is shown in the figure included within the SCA), and so it was conservatively assumed that these were present in Block A of the boys campus and that mislabelling of sample locations had occurred during the markup of sample locations. Additional inspection and sampling of soils from the Block A crawl space confirmed the presence of bonded asbestos fragments across the accessible footprint. It is assumed that similar impacts are present across the entire Block A footprint and are considered to represent contamination requiring management. No further friable asbestos impacts were reported from soil analysis as part of this investigation.

12.3 Confirming the Presence/Absence of Potential Acid Sulfate Soils (PASS)

Has the presence of potential acid sulfate soils (PASS) been identified in the proposed basement area?

Characterisation activities conducted as part of this DGI reported no presence of potential acid sulfate soils.

It is noted that the original design plans for a basement parking facility which addressed this specific COPC as a data gap identified in the Peer Review (JBS&G 2023) have been updated and no longer include a basement car park and instead propose an on grade sealed surface parking area.

12.4 Confirming Contamination Status of the Broader Site

Has the contamination status of the broader site been confirmed with regards to that previously documented?

Additional characterisation activities conducted as part of this DGI reported concentrations of COPC consistent with those levels identified by previous investigations. As noted in **Section 10.2.5**, ACM was reported at concentrations exceeding health criteria at two sample locations (TP105 and TP107). ACM fragments were removed from the sample locations as part of AQ. It is noted that only a single fragment was reported in TP107 and that no other ACM fragments were visible within excavated soils, the test pit excavation walls and base or the surrounding area. Given this, this sample location is not considered to represent contamination requiring remediation as the single asbestos fragment was removed as part of the investigation. ACM present in TP105 has been observed within fill located behind the retaining wall and north of Block A. Similar fill material was identified at BH109. Whilst no further ACM fragments were observed at this northern location, given the similarity of fill it is conservatively assumed that asbestos contaminated fill is present behind the retaining wall north of Block A.

All individual chemical COPC reported as part of this investigation were below the adopted human health and ecological assessment criteria. As noted in **Section 11.1**, the copper exceedance historically reported at sample location A08570 has been conservatively assumed to be present in the footprint of Block A within the site and represents an exceedance of the ecological criteria adopted as part of the current investigation. This chemical concentration considered to be a result of residual metal wastes from building maintenance/construction. It is noted that these impacted surface soils are the same as those impacted with asbestos already requiring management, and as such will be appropriately managed concurrently.

No indicators of any activities with the potential to influence the contamination status in the intervening years since the previous site assessments were observed. The site was generally consistent with that which was previously documented.

12.5 Requirements for a Site Management Strategy

Is a site management strategy required for the site?

Given the site characterisation above, a Remedial Action Plan (RAP) (incorporating an Unexpected Finds Procedure) should be developed for the removal of the asbestos and copper contaminated material described above.

13. Conclusion and Recommendations

Based on the scope of work completed for this assessment including the findings of previous investigations and subject to the limitations in **Section 14**, the following conclusions are made:

- JBS&G consider that the data gaps identified in the SCA and Peer Review have been adequately addressed and the site suitably characterised; and
- The site can be made suitable for educational land use subject to remediation of identified asbestos and copper contamination guided by a RAP documenting the known extent of contamination and a remedial approach consistent with current relevant legislation and guidelines.

13.1 Statement of Significance

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed development, it is determined that:

- The extent and nature of potential impacts are low, and will not have significant adverse effects on the locality, community and the environment; and
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community.

The mitigation measures required and relevant to the current investigation are included in **Appendix A**.

14. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties. The report has been prepared specifically for the client for the purposes of the commission, and no warranties, express or implied, are offered to any third parties and no liability will be accepted for use or interpretation of this report by any third party.

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. This report should not be amended in any way without prior approval by JBS&G, or reproduced other than in full including all attachments as originally provided to the client by JBS&G.

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 or agreed scope of work.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. 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 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.



- Legend**
- Approximate Site Boundary
 - Approximate SINSW Boundary



Job No: 68150

Client: Meinhardt

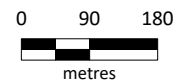
Version: R01 Rev A

Date 24/01/2025

Drawn By: EP

Checked By: IL

Scale 1:10,000



Coord. Sys. GDA 1994 MGA Zone 56

Liverpool Boys and Girls High School

**18 Forbes Street,
Liverpool, NSW**

SITE LOCATION

FIGURE 1



- Legend**
- Approximate Site Boundary
 - Approximate SINSW Boundary
 - NSW Cadastre
 - Current Site Features**
 - Building A
 - Proposed Site Features**
 - Proposed Building Footprint



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Checked By: IL

Scale 1:1,750



0 10 20
metres

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Liverpool Boys and Girls High School

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SITE LAYOUT

FIGURE 2



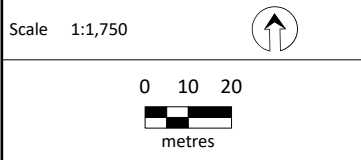
- Legend**
- Approximate Site Boundary
 - Approximate SINSW Boundary
 - NSW Cadastre
 - Current Site Features**
 - Building A
 - Proposed Site Features**
 - Proposed Building Footprint
 - Historical Sample Locations (Coffey 2019a)**
 - Test Pit
 - Borehole
 - Hand Auger
 - Sub Floor Grab Sample



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HISTORICAL SAMPLE LOCATIONS

FIGURE 3



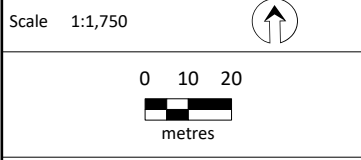
- Legend**
- Approximate Site Boundary
 - Approximate SINSW Boundary
 - NSW Cadastre
- Current Site Features**
- Building A
- Proposed Site Features**
- Proposed Building Footprint
- Historical Sample Locations (Coffey 2019a)**
- Test Pit
 - Borehole
 - Hand Auger
 - Sub Floor Grab Sample
- Sample Locations (JBS&G 2025)**
- Test Pit
 - Borehole
 - Sub Floor Grab Sample



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SAMPLE LOCATIONS

FIGURE 4



Sample ID	Depth	Analyte	Concentration	Criteria
A08526	Surface	Copper	410 mg/kg	EIL (190 mg/kg)

Sample ID	Depth	Analyte	Concentration	Criteria
TP105	0.1-0.6	ACM in Soil	0.123 %w/w	HSL-C (0.02 %w/w)

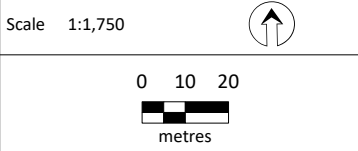
- Legend**
- Approximate Site Boundary
 - Approximate SINSW Boundary
 - NSW Cadastre
 - Current Site Features**
 - Building A
 - ACM observed on Surface Soils
 - Proposed Site Features**
 - Proposed Building Footprint
 - Historical Sample Locations (Coffey 2019)**
 - Test Pit
 - Borehole
 - Hand Auger
 - Sub Floor Grab Sample
 - Sample Locations (JBS&G 2025)**
 - Test Pit
 - Borehole
 - Sub Floor Grab Sample



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EXCEEDANCES

FIGURE 5

Appendix A Mitigation Measures

Table A.1: Mitigation Measures

Project Stage Design (D), Construction (C), Operation (O)	Mitigation Measures	Relevant Section of Report
D	A RAP should be prepared to outline the required remedial approach and procedures to sufficiently manage the identified contamination and make the site suitable for the proposed secondary educational land use.	Section 12.5 and Section 13 .

Appendix B Photographic Log

PHOTO 1: SHADED OUTDOOR OPEN SPACE IN THE NORTH-WEST OF SITE FACING SOUTH-EAST



PHOTO 2: RETAINING WALL EAST OF SHADED OUTDOOR OPEN SPACE FACING SOUTH

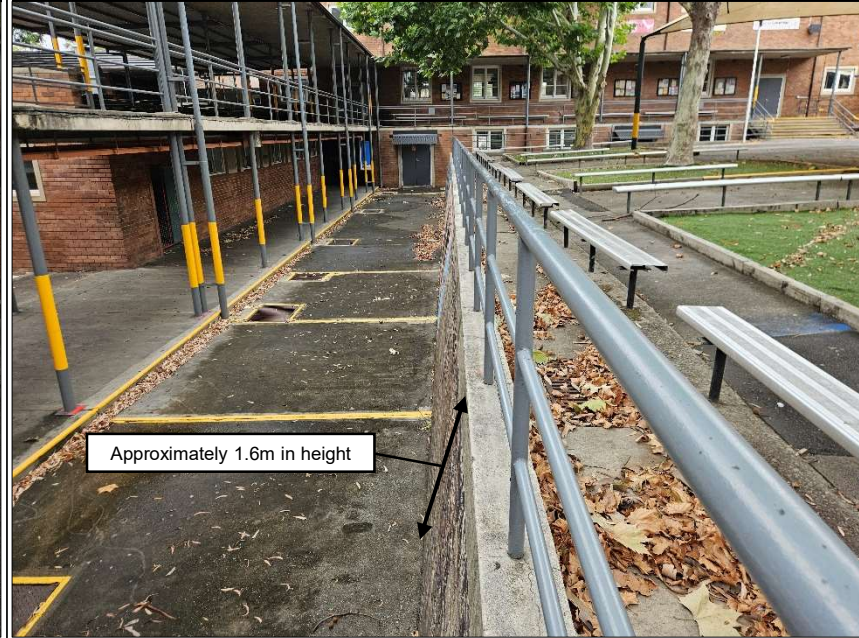


PHOTO 3: CAR PARK AND OPEN SPACE IN THE WEST OF SITE FACING NORTH-WEST



PHOTO 4: RETAINING WALL EAST OF THE CAR PARK AND OPEN SPACE FACING SOUTH



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APPENDIX A – PHOTOGRAPHIC LOG

PHOTO 5: CONCRETE BASKETBALL COURT AND OVAL IN THE EAST OF SITE FACING SOUTH-EAST



PHOTO 6: STORAGE STRUCTURE AND MULTIPURPOSE COURTS IN THE NORTH-EAST OF SITE FACING NORTH-EAST



PHOTO 7: CAR PARK IN THE EAST OF SITE FACING NORTH-WEST



PHOTO 8: LACHLAN STREET SITE ENTRY IN THE NORTH-EAST FACING NORTH



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APPENDIX A – PHOTOGRAPHIC LOG

PHOTO 9: ACCESS TO UNDERCROFT OF BUILDING A IN THE WEST OF SITE FACING WEST



PHOTO 10: UNDERCROFT OF BUILDING A IN THE WEST OF SITE FACING SOUTH-WEST



PHOTO 11: UNDERCROFT OF BUILDING A IN THE WEST OF SITE FACING NORTH



PHOTO 12: ASBESTOS FRAGMENTS OBSERVED AROUND FOOTINGS AND SOIL WITHIN THE BUILDING A UNDERCROFT



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APPENDIX A – PHOTOGRAPHIC LOG

PHOTO 13: TP105 (NORTH-WEST OF SITE) LOCATION WITH SYNTHETIC TURF SURFACE FINISH



PHOTO 14: TP105 (NORTH-WEST OF SITE) OPEN EXCAVATION



PHOTO 15: TP105 (NORTH-WEST OF SITE) 10L AQ MATERIAL FROM 0.1 – 0.6 M BGS



PHOTO 16: ASBESTOS FRAGMENTS OBSERVED AT TP105 (NORTH-WEST OF SITE) AT 0.1 – 0.6 M BGS



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APPENDIX A – PHOTOGRAPHIC LOG

PHOTO 17: TP102 (WEST OF SITE) LOCATION WITH MULCHED GARDEN BED SURFACE FINISH



PHOTO 18: TP102 (WEST OF SITE) OPEN EXCAVATION



PHOTO 19: TP102 (WEST OF SITE) CLAYEY SILT AT 0.4 – 0.7 M BGS



PHOTO 20: TP102 (WEST OF SITE) SILTY CLAY AT 0.7 – 1.4 M BGS



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Coord. Sys n/a

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APPENDIX A – PHOTOGRAPHIC LOG

PHOTO 21: BH104 (NORTH OF SITE) SILTY CLAY AT 0.4 - 0.5 M BGS



PHOTO 22: BH104 (NORTH OF SITE) SILTY CLAY AT 1.4 – 1.5 MBGS



PHOTO 23: BH104 (NORTH OF SITE) SILTY CLAY AT 2.9 – 3.0 M BGS



PHOTO 24: BH104 (NORTH OF SITE) SOIL PROFILES EXTRACTED BY SOLID FLIGHT AUGER



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Date: 18/01/2025

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Not to Scale

Coord. Sys n/a

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APPENDIX A – PHOTOGRAPHIC LOG

**PHOTO 25: REINSTATEMENT OF BH105 SURFACE FINISH (COLD MIX)
IN THE NORTH-EAST OF SITE**



**PHOTO 26: REINSTATEMENT OF BH106 SURFACE FINISH
(CONCRETE) IN THE NORTH-EAST OF SITE**



**PHOTO 27: REINSTATEMENT OF TP103 SURFACE FINISH (TOPSOIL) IN
THE WEST OF SITE**



**PHOTO 28: REINSTATEMENT OF BH103 SURFACE FINISH (SYNTHETIC
TURF) IN THE NORTH OF SITE**



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Version: R01 Rev A

Date: 18/01/2025

Drawn By: EP

Checked By: IL

Not to Scale

Coord. Sys n/a

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APPENDIX A – PHOTOGRAPHIC LOG

Appendix C Field Logs

PROJECT NUMBER 68150	DRILLING COMPANY Legion Drilling	EASTING 308719.7491
PROJECT NAME 68150 Liverpool HS DGI + RAP	DRILL RIG GeoProbe	NORTHING 6245175.3955
CLIENT Meinhardt	DRILLING METHOD Push Tube/Solid Flight Auger	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	DIAMETER 50 mm	TOTAL DEPTH 3.00 m bgl
DRILLING DATE 09 Jan 2025		LOGGED BY E Piccinin

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
PT		0.2		Fill - Silty SAND, grey-yellow, heterogeneous, damp, poorly graded, medium sand, sub-angular, loose, with no inclusions	DP	BH101_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (BH101_0.0-0.3).
						BH101_0.20-0.30		
		0.4		CL-ML-SM Natural - Sandy Silty CLAY, brown-orange, heterogeneous, dry-damp, non-plastic, stiff, with no inclusions	DP	BH101_0.40-0.50		No odours, staining, or asbestos observed.
		0.6						
		0.8						
		1				BH101_0.90-1.00		
		1.2		CL-ML-SM Natural - Sandy Silty CLAY, grey-white, heterogeneous, dry, non-plastic, very stiff, with no inclusions Becomes light red at 2.0 m bgs	DR			No odours, staining, or asbestos observed.
		1.4				BH101_1.40-1.50		
		1.6						
		1.8						
		2				BH101_1.90-2.00		
		2.2						
		2.4				BH101_2.40-2.50		
		2.6						
		2.8						
		3				BH101_2.90-3.00		
		3.2		Termination Depth at:3.00 m.				
		3.4						

PROJECT NUMBER 68150	DRILLING COMPANY Legion Drilling	EASTING 308754.7094
PROJECT NAME 68150 Liverpool HS DGI + RAP	DRILL RIG GeoProbe	NORTHING 6245160.5604
CLIENT Meinhardt	DRILLING METHOD Push Tube/Solid Flight Auger	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	DIAMETER 50 mm	TOTAL DEPTH 3.00 m bgl
DRILLING DATE 08 Jan 2025		LOGGED BY E Piccinin

COMMENTS Asphalt was present at the site with an observed thickness of 0.05m.
Underlying soils were sampled from 0.0 mbgs which is reported as commencing from directly below the Asphalt.

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations	
PT		0.2		Fill - Silty SAND, dark brown, heterogeneous, dry, poorly graded, medium sand, sub-angular, loose, with inclusions of weathered shale gravels, roots, and rootlets	DR	BH102_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (BH102_0.0-0.3).	
						BH102_0.20-0.30			
		0.4		CL-ML Natural - Silty CLAY, brown, heterogeneous, dry-damp, non-low plasticity, stiff, with inclusions of weathered shale gravels, roots, and rootlets	DP			No odours, staining, or asbestos observed.	
						BH102_0.40-0.50			
						BH102_0.90-1.00			
		0.6		Becomes orange-red at 0.7 m bgs					
		0.8							
1									
1.2									
1.4		CL-ML Natural - Silty CLAY, grey-yellow, heterogeneous, dry, low plasticity, stiff, with inclusions of weathered shale gravels	DR	BH102_1.40-1.50	No odours, staining, or asbestos observed.				
				BH102_1.90-2.00					
1.6									
1.8									
2									
2.2									
2.4		Becomes grey-white at 2.3 m bgs			BH102_2.40-2.50				
2.6		CL-ML-SM Natural - Sandy Silty CLAY, grey-yellow, heterogeneous, dry, non-plastic, stiff, with inclusions of weathered shale gravels	DR		No odours, staining, or asbestos observed.				
2.8									
3					BH102_2.90-3.00				
		3		Termination Depth at:3.00 m.					
									3.2
									3.4

PROJECT NUMBER 68150	DRILLING COMPANY Legion Drilling	EASTING 308792.7748
PROJECT NAME 68150 Liverpool HS DGI + RAP	DRILL RIG GeoProbe	NORTHING 6245173.2105
CLIENT Meinhardt	DRILLING METHOD Push Tube/Solid Flight Auger	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	DIAMETER 50 mm	TOTAL DEPTH 3.00 m bgl
DRILLING DATE 08 Jan 2025		LOGGED BY E Piccinin

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
PT		0.2		Fill - Sandy GRAVEL, black-grey, heterogeneous, moist, poorly graded, medium gravel, sub-angular, loose, with no inclusions	M	BH103_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (BH103_0.0-0.1).
					DP			
		0.4		Fill - Sandy Silty CLAY, brown-orange, heterogeneous, dry-damp, non-plastic, stiff, with inclusions of weathered shale gravels		BH103_0.20-0.30		
		0.6		CL-ML Natural - Silty CLAY, brown, heterogeneous, dry-damp, non-low plasticity, stiff, with inclusions of rootlets	DP	BH103_0.40-0.50		No odours or staining observed. No asbestos observed in 10L AQ (BH103_0.1-0.4).
		0.8						
		1.0				BH103_0.90-1.00		
		1.2						
		1.4				BH103_1.40-1.50		
		1.6		CH-MH Natural - Silty CLAY, grey-red-yellow, heterogeneous, damp, low-medium plasticity, firm-stiff, with inclusions of weathered shale gravels	DP			No odours, staining, or asbestos observed.
		1.8						
		2.0				BH103_1.90-2.00		
		2.2						
		2.4				BH103_2.40-2.50		
		2.6						
		2.8						
		3.0				BH103_2.90-3.00		
		3.2		Termination Depth at:3.00 m.				
		3.4						

COMMENTS Asphalt was present at the site with an observed thickness of 0.05m.
Underlying soils were sampled from 0.0 mbgs which is reported as commencing from directly below the Asphalt.

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PROJECT NUMBER 68150	DRILLING COMPANY Legion Drilling	EASTING 308847.4003
PROJECT NAME 68150 Liverpool HS DGI + RAP	DRILL RIG GeoProbe	NORTHING 6245147.6803
CLIENT Meinhardt	DRILLING METHOD Push Tube/Solid Flight Auger	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	DIAMETER 50 mm	TOTAL DEPTH 3.10 m bgl
DRILLING DATE 08 Jan 2025		LOGGED BY E Piccinin

COMMENTS Asphalt was present at the site with an observed thickness of 0.05m.
Underlying soils were sampled from 0.0 mbgs which is reported as commencing from directly below the Asphalt.

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
PT		0.2		Fill - Sandy GRAVEL, black-grey, heterogeneous, damp, poorly graded, medium gravel, sub-angular, loose, with no inclusions	DP	BH105_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (BH105_0.0-0.2).
				Fill - Silty Gravelly CLAY, grey, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash	DP	BH105_0.20-0.30		
		0.4		CH-MH Natural - Silty CLAY, brown-orange, heterogeneous, damp, low-medium plasticity, firm-stiff, with inclusions of organic matter	DP	BH105_0.40-0.50		No odours or staining observed. No asbestos observed in 10L AQ (BH105_0.2-0.4).
		0.6						
		0.8		CH-MH Natural - Silty CLAY, grey-red-yellow, heterogeneous, damp, low-medium plasticity, firm, with inclusions of weathered shale gravels	DP			No odours, staining, or asbestos observed. No odours, staining, or asbestos observed.
		1				BH105_0.90-1.00		
		1.2						
		1.4				BH105_1.40-1.50		
		1.6						
		1.8						
		2				BH105_1.90-2.00		
		2.2						
		2.4				BH105_2.40-2.50		
		2.6						
		2.8						
		3				BH105_2.90-3.00		
		3.2		Termination Depth at:3.10 m.				
		3.4						

PROJECT NUMBER 68150	DRILLING COMPANY Legion Drilling	EASTING 308887.4207
PROJECT NAME 68150 Liverpool HS DGI + RAP	DRILL RIG GeoProbe	NORTHING 6245148.8303
CLIENT Meinhardt	DRILLING METHOD Push Tube/Solid Flight Auger	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	DIAMETER 50 mm	TOTAL DEPTH 3.00 m bgl
DRILLING DATE 09 Jan 2025		LOGGED BY E Piccinin

COMMENTS Concrete was present at the site with an observed thickness of 0.14m.
Underlying soils were sampled from 0.0 mbgs which is reported as commencing from directly below the Concrete.

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
PT		0.2		Fill - Sandy GRAVEL, black-grey, heterogeneous, damp-wet, poorly graded, medium gravel, sub-angular, loose, with no inclusions	DP	BH106_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (BH106_0.0-0.4).
		0.4				BH106_0.20-0.30		
		0.6		CH-MH Natural - Silty CLAY, brown-yellow, heterogeneous, moist-wet, medium-high plasticity, firm, with inclusions of rootlets	M	BH106_0.40-0.50		No odours, staining, or asbestos observed.
		0.8						
		1.0				BH106_0.90-1.00		
		1.2						
		1.4		CH-MH Natural - Silty CLAY, grey-red, heterogeneous, moist, medium-high plasticity, firm, with inclusions of weathered shale gravels	M	BH106_1.40-1.50		No odours, staining, or asbestos observed.
		1.6						
		1.8						
		2.0				BH106_1.90-2.00		
		2.2						
		2.4				BH106_2.40-2.50		
		2.6						
		2.8						
		3.0				BH106_2.90-3.00		
		3.2		Termination Depth at:3.00 m.				
		3.4						

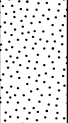
PROJECT NUMBER 68150	DRILLING COMPANY Legion Drilling	EASTING 308893.0288
PROJECT NAME 68150 Liverpool HS DGI + RAP	DRILL RIG GeoProbe	NORTHING 6245096.5484
CLIENT Meinhardt	DRILLING METHOD Push Tube/Solid Flight Auger	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	DIAMETER 50 mm	TOTAL DEPTH 3.10 m bgl
DRILLING DATE 09 Jan 2025		LOGGED BY E Piccinin

COMMENTS Asphalt was present at the site with an observed thickness of 0.05m.
Underlying soils were sampled from 0.0 mbgs which is reported as commencing from directly below the Asphalt.

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
PT		0.2		Fill - Sandy GRAVEL, black-grey, heterogeneous, damp, poorly graded, medium gravel, sub-angular, loose, with no inclusions	DP	BH107_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (BH107_0.0-0.1).
		0.4		Fill - Silty Gravelly CLAY, dark brown-grey, heterogeneous, damp-moist, medium-high plasticity, firm, with inclusions of weathered shale gravels and rootlets	DP	BH107_0.20-0.30		
		0.6				BH107_0.40-0.50		
		0.8		CH-MH Natural - Silty CLAY, grey-yellow, heterogeneous, moist, medium-high plasticity, firm, with inclusions of rootlets	M			
		1.0				BH107_0.90-1.00		
		1.2						
		1.4						
		1.6		CH-MH Natural - Silty CLAY, grey-red, heterogeneous, moist, medium-high plasticity, firm, with inclusions of weathered shale gravels and rootlets	M	BH107_1.40-1.50		No odours, staining, or asbestos observed.
		1.8						
		2.0				BH107_1.90-2.00		
		2.2						
		2.4				BH107_2.40-2.50		
		2.6						
		2.8				BH107_2.90-3.00		
		3.0						
		3.2		Termination Depth at:3.10 m.				
		3.4						

PROJECT NUMBER 68150	DRILLING COMPANY Legion Drilling	EASTING 308830.5656
PROJECT NAME 68150 Liverpool HS DGI + RAP	DRILL RIG GeoProbe	NORTHING 6245082,574
CLIENT Meinhardt	DRILLING METHOD Push Tube/Solid Flight Auger	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	DIAMETER 50 mm	TOTAL DEPTH 3.00 m bgl
DRILLING DATE 09 Jan 2025		LOGGED BY E Piccinin

COMMENTS Asphalt was present at the site with an observed thickness of 0.05m.
Underlying soils were sampled from 0.0 mbgs which is reported as commencing from directly below the Asphalt.

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
PT		0.2		Fill - Sandy GRAVEL, black-grey, heterogeneous, damp, poorly graded, medium gravel, sub-angular, loose, with no inclusions	DP	BH108_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (BH108_0.0-0.3).
						BH108_0.20-0.30		
		0.4		CH-MH Natural - Silty CLAY, brown-grey, heterogeneous, damp-moist, medium plasticity, firm, with inclusions of organic matter	DP	BH108_0.40-0.50		No odours, staining, or asbestos observed.
		0.6						
		0.8		CH-MH Natural - Silty CLAY, grey-red, heterogeneous, damp-moist, medium plasticity, firm, with inclusions of rootlets	DP			No odours, staining, or asbestos observed.
		1.0				BH108_0.90-1.00		
		1.2						
		1.4				BH108_1.40-1.50		
		1.6		CH-MH Natural - Silty CLAY, grey-red-yellow, heterogeneous, damp-moist, medium plasticity, firm, with inclusions of weathered shale gravels	DP			No odours, staining, or asbestos observed.
		1.8				BH108_1.90-2.00		
		2.0						
		2.2						
		2.4		SP Natural - SAND, white-yellow, homogenous, damp, poorly graded, medium sand, sub-angular, loose, with no inclusions	DP	BH108_2.40-2.50		No odours, staining, or asbestos observed.
		2.6						
		2.8				BH108_2.90-3.00		
		3.0						
		3.2		Termination Depth at:3.00 m.				
		3.4						

PROJECT NUMBER 68150	DRILLING COMPANY Legion Drilling	EASTING 308752.2934
PROJECT NAME 68150 Liverpool HS DGI + RAP	DRILL RIG GeoProbe	NORTHING 6245131.9647
CLIENT Meinhardt	DRILLING METHOD Solid Flight Auger	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	DIAMETER 50 mm	TOTAL DEPTH 1.60 m bgl
DRILLING DATE 09 Jan 2025		LOGGED BY E Piccinin

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
SFA		0.2		Fill - Silty Gravelly SAND, grey, heterogeneous, damp, poorly graded, medium sand, sub-angular, loose, with inclusions of roots and rootlets	DP			No odours, staining, or asbestos observed.
		0.4		Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash, brick, concrete, roots, and rootlets	DP			No odours, staining, or asbestos observed.
		0.6		CL Natural - CLAY, orange-red, homogenous, damp, low-medium plasticity, firm-stiff, with inclusions of rootlets	DP			No odours, staining, or asbestos observed.
		0.8		Becomes grey-red at 1.0 m bgs				
		1.0						
		1.2						
		1.4						
		1.6		Termination Depth at:1.60 m.				
		1.8						
		2.0						
		2.2						
		2.4						
		2.6						
		2.8						
		3.0						
		3.2						
		3.4						

PROJECT NUMBER 68150	DRILLING COMPANY Legion Drilling	EASTING 308747.418
PROJECT NAME 68150 Liverpool HS DGI + RAP	DRILL RIG GeoProbe	NORTHING 6245060.4131
CLIENT Meinhardt	DRILLING METHOD Solid Flight Auger	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	DIAMETER 50 mm	TOTAL DEPTH 1.40 m bgl
DRILLING DATE 09 Jan 2025		LOGGED BY E Piccinin

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
SFA		0.2		Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash, leaf litter, roots and rootlets	DP			No odours, staining, or asbestos observed.
		0.4		Fill - Silty CLAY, brown-grey-red, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash, weathered shale gravels, roots and rootlets	DP			No odours, staining, or asbestos observed.
		0.6		CL Natural - CLAY, brown-red, homogenous, damp, low plasticity, firm-stiff, with inclusions of rootlets	DP			No odours, staining, or asbestos observed.
		0.8						
		1						
		1.2						
		1.4		Termination Depth at:1.40 m.				
		1.6						
		1.8						
		2						
		2.2						
		2.4						
		2.6						
		2.8						
		3						
		3.2						
		3.4						

PROJECT NUMBER 68150	DRILLING COMPANY Ken Coles	EASTING 308708.5971
PROJECT NAME 68150 Liverpool HS DGI + RAP	PLANT TYPE Excavator	NORTHING 6245091.6463
CLIENT Meinhardt	METHOD Test Pit	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	TP LENGTH (m) m	TOTAL DEPTH 1.00 m bgl
DRILLING DATE 07 Jan 2025	TP WIDTH (m) m	LOGGED BY E Piccinin

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit		0.1		Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of roots and rootlets	DP	TP101_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (TP101_0.0-0.3).
		0.2						
		0.3				TP101_0.20-0.30		
		0.4		Fill - Clayey SILT, light brown, heterogeneous, dry-damp, non-plastic, soft-firm, with no inclusions	DP			No odours or staining observed. No asbestos observed in 10L AQ (TP101_0.3-0.5).
		0.5				TP101_0.40-0.50		
		0.6		CL Natural - CLAY, brown-red, homogenous, dry-damp, low plasticity, firm-stiff, with no inclusions	DP			No odours, staining, or asbestos observed.
		0.7						
		0.8						
		0.9						
		1.0		Termination Depth at:1.00 m.		TP101_0.90-1.00		
		1.1						
		1.2						
		1.3						
		1.4						
		1.5						
		1.6						
		1.7						
		1.8						
		1.9						

PROJECT NUMBER 68150	DRILLING COMPANY Ken Coles	EASTING 308752.2498
PROJECT NAME 68150 Liverpool HS DGI + RAP	PLANT TYPE Excavator	NORTHING 6245088.0588
CLIENT Meinhardt	METHOD Test Pit	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	TP LENGTH (m) m	TOTAL DEPTH 1.40 m bgl
DRILLING DATE 07 Jan 2025	TP WIDTH (m) m	LOGGED BY E Piccinin

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit		0.1		Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash, leaf litter, roots and rootlets	DP	TP102_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (TP102_0.0-0.2).
		0.2		Fill - Silty CLAY, brown-grey-red, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash, weathered shale gravels, roots and rootlets	DP	TP102_0.20-0.30		No odours or staining observed. No asbestos observed in 10L AQ (TP102_0.2-0.4).
		0.3						
		0.4		Fill - Clayey SILT, light brown, heterogeneous, dry-damp, non-plastic, soft-firm, with no inclusions	DP	TP102_0.40-0.50		No odours or staining observed. No asbestos observed in 10L AQ (TP102_0.4-0.7).
		0.5						
		0.6		CL Natural - CLAY, brown-red, homogenous, damp, low plasticity, firm-stiff, with inclusions of rootlets	DP			No odours, staining, or asbestos observed.
		0.7						
		0.8						
		0.9						
		1.0		Termination Depth at:1.40 m.		TP102_0.90-1.00		
		1.1						
		1.2						
		1.3						
		1.4						
		1.5						
		1.6						
		1.7						
		1.8						
		1.9						

PROJECT NUMBER 68150	DRILLING COMPANY Ken Coles	EASTING 308710.8526
PROJECT NAME 68150 Liverpool HS DGI + RAP	PLANT TYPE Excavator	NORTHING 6245057.3584
CLIENT Meinhardt	METHOD Test Pit	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	TP LENGTH (m) m	TOTAL DEPTH 0.80 m bgl
DRILLING DATE 07 Jan 2025	TP WIDTH (m) m	LOGGED BY E Piccinin

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit		0.1		Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, soft, with inclusions of roots and rootlets	DP	TP103_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (TP103_0.0-0.3).
		0.2						
		0.3				TP103_0.20-0.30		
		0.4		CL Natural - CLAY, brown-red, homogenous, damp, low plasticity, firm-stiff, with inclusions of roots and rootlets	DP			No odours, staining, or asbestos observed.
		0.5				TP103_0.40-0.50		
		0.6						
		0.7						
		0.8						
		0.9		Termination Depth at:0.80 m.				
		1						
		1.1						
		1.2						
		1.3						
		1.4						
		1.5						
		1.6						
		1.7						
		1.8						
		1.9						

PROJECT NUMBER 68150	DRILLING COMPANY Ken Coles	EASTING 308734.4048
PROJECT NAME 68150 Liverpool HS DGI + RAP	PLANT TYPE Excavator	NORTHING 6245048.2319
CLIENT Meinhardt	METHOD Test Pit	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	TP LENGTH (m) m	TOTAL DEPTH 1.20 m bgl
DRILLING DATE 07 Jan 2025	TP WIDTH (m) m	LOGGED BY E Piccinin

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit		0.1		Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of roots and rootlets	DP	TP104_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (TP104_0.0-0.3).
		0.2						
		0.3				TP104_0.20-0.30		
		0.4		Fill - Silty CLAY, brown-orange, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash, glass, roots and rootlets	DP	TP104_0.40-0.50		No odours or staining observed. No asbestos observed in 10L AQ (TP104_0.3-0.7).
		0.5						
		0.6						
		0.7		CL Natural - CLAY, brown-red, homogenous, damp, low plasticity, firm-stiff, with inclusions of rootlets	DP			No odours, staining, or asbestos observed.
		0.8						
		0.9				TP104_0.90-1.00		
		1						
		1.1						
		1.2		Termination Depth at:1.20 m.				
		1.3						
		1.4						
		1.5						
		1.6						
		1.7						
		1.8						
		1.9						

PROJECT NUMBER 68150	DRILLING COMPANY Ken Coles	EASTING 308749.4022
PROJECT NAME 68150 Liverpool HS DGI + RAP	PLANT TYPE Excavator	NORTHING 6245114.7457
CLIENT Meinhardt	METHOD Test Pit	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	TP LENGTH (m) m	TOTAL DEPTH 1.60 m bgl
DRILLING DATE 07 Jan 2025	TP WIDTH (m) m	LOGGED BY E Piccinin

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit		0.1		Fill - Silty Gravelly SAND, grey, heterogeneous, damp, poorly graded, medium sand, sub-angular, loose, with inclusions of roots and rootlets	DP	TP105_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (TP105_0.0-0.1).
		0.2		Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of ash, brick, concrete, roots, rootlets and asbestos fragments	DP			
		0.3				TP105_0.20-0.30		
		0.4						
		0.5		CL Natural - CLAY, orange-red, homogenous, damp, low-medium plasticity, firm-stiff, with inclusions of rootlets Becomes grey-red at 1.0 m bgs	DP	TP105_0.40-0.50		No odours or staining observed. Four asbestos fragments (TP105-FRAG01 to TP105-FRAG04) observed in 10L AQ (TP105_0.1-0.6).
		0.6						
		0.7						
		0.8						
		0.9						
		1				TP105_0.90-1.00		
		1.1						
		1.2						
		1.3						
		1.4				TP105_1.40-1.50		
		1.5						
		1.6						
		1.7		Termination Depth at:1.60 m.				
		1.8						
		1.9						

PROJECT NUMBER 68150	DRILLING COMPANY Ken Coles	EASTING 308736.1683
PROJECT NAME 68150 Liverpool HS DGI + RAP	PLANT TYPE Excavator	NORTHING 6245146.0708
CLIENT Meinhardt	METHOD Test Pit	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	TP LENGTH (m) m	TOTAL DEPTH 1.00 m bgl
DRILLING DATE 07 Jan 2025	TP WIDTH (m) m	LOGGED BY E Piccinin

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit		0.1		Fill - Silty Gravelly SAND, grey, heterogeneous, damp, poorly graded, medium sand, sub-angular, loose, with inclusions of ash, ceramic, roots, and rootlets	DP	TP106_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (TP106_0.0-0.1). No odours or staining observed. No asbestos observed in 10L AQ (TP106_0.1-0.5).
		0.2		Fill - Silty CLAY, brown-orange, heterogeneous, damp, low plasticity, firm-stiff, with inclusions of weathered shale gravels	DP			
		0.3				TP106_0.20-0.30		
		0.4						
		0.5				TP106_0.40-0.50		
		0.6		CL Natural - CLAY, orange-red, homogenous, damp, low-medium plasticity, firm-stiff, with inclusions of weathered shale gravels	DP			No odours, staining, or asbestos observed.
		0.7						
		0.8						
		0.9						
		1.0				TP106_0.90-1.00		
		1.1		Termination Depth at:1.00 m.				
		1.2						
		1.3						
		1.4						
		1.5						
		1.6						
		1.7						
		1.8						
		1.9						

PROJECT NUMBER 68150	DRILLING COMPANY Ken Coles	EASTING 308853,741
PROJECT NAME 68150 Liverpool HS DGI + RAP	PLANT TYPE Excavator	NORTHING 6245124,5912
CLIENT Meinhardt	METHOD Test Pit	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	TP LENGTH (m) m	TOTAL DEPTH 1.50 m bgl
DRILLING DATE 07 Jan 2025	TP WIDTH (m) m	LOGGED BY E Piccinin

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit		0.1		Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, soft, with inclusions of ash, glass, metal, roots, rootlets, tile and an asbestos fragment	DP	TP107_0.00-0.10		No odours or staining observed. One asbestos fragment (TP107-FRAG01) observed in 10L AQ (TP107_0.0-0.2).
		0.2		Fill - Silty CLAY, brown-grey, heterogeneous, dry-damp, low plasticity, stiff, with inclusions of ash, glass, metal, roots, rootlets, and tile	DP	TP107_0.20-0.30		No odours or staining observed. No asbestos observed in 10L AQ (TP107_0.2-0.4).
		0.3						
		0.4		Fill - Sandy SILT, light brown, heterogeneous, damp, non-low plasticity, soft, with no inclusions	DP	TP107_0.40-0.50		No odours or staining observed. No asbestos observed in 10L AQ (TP107_0.4-0.6).
		0.5						
		0.6		CL Natural - CLAY, red, homogenous, damp, low-medium plasticity, firm-stiff, with no inclusions	DP			No odours, staining, or asbestos observed.
		0.7						
		0.8						
		0.9						
		1						
		1.1						
		1.2						
		1.3						
		1.4						
1.5								
		1.6		Termination Depth at:1.50 m.				
		1.7						
		1.8						
		1.9						

PROJECT NUMBER 68150	DRILLING COMPANY Ken Coles	EASTING 308879.5362
PROJECT NAME 68150 Liverpool HS DGI + RAP	PLANT TYPE Excavator	NORTHING 6245029.4315
CLIENT Meinhardt	METHOD Test Pit	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	TP LENGTH (m) m	TOTAL DEPTH 1.50 m bgl
DRILLING DATE 07 Jan 2025	TP WIDTH (m) m	LOGGED BY E Piccinin

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit		0.1		Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, soft, with inclusions of roots and rootlets	DP	TP108_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (TP108_0.0-0.1). No odours or staining observed. No asbestos observed in 10L AQ (TP108_0.1-1.0).
		0.2		Fill - Silty CLAY, brown-grey, heterogeneous, damp, low plasticity, stiff, with inclusions of ash, glass, weathered shale gravels, and rootlets	DP			
		0.3				TP108_0.20-0.30		
		0.4						
		0.5				TP108_0.40-0.50		
		0.6						
		0.7						
		0.8						
		0.9				TP108_0.90-1.00		
		1						
		1.1		CL Natural - CLAY, brown-orange, homogenous, damp, low-medium plasticity, firm-stiff, with no inclusions	DP			No odours, staining, or asbestos observed.
		1.2						
		1.3						
		1.4				TP108_1.40-1.50		
		1.5						
		1.6		Termination Depth at:1.50 m.				
		1.7						
		1.8						
		1.9						

PROJECT NUMBER 68150	DRILLING COMPANY Ken Coles	EASTING 308834.6306
PROJECT NAME 68150 Liverpool HS DGI + RAP	PLANT TYPE Excavator	NORTHING 6245030.7242
CLIENT Meinhardt	METHOD Test Pit	COORD SYS GDA2020_MGA_zone_56
ADDRESS 18 Forbes Street	TP LENGTH (m) m	TOTAL DEPTH 1.50 m bgl
DRILLING DATE 07 Jan 2025	TP WIDTH (m) m	LOGGED BY E Piccinin

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Description	Moisture	Samples	PID	Additional Observations
Test Pit		0.1		Fill - Silty CLAY, brown, heterogeneous, damp, low plasticity, soft, with inclusions of roots and rootlets	DP	TP109_0.00-0.10		No odours or staining observed. No asbestos observed in 10L AQ (TP109_0.0-0.2).
		0.2						
		0.3		Fill - Silty CLAY, brown-grey, heterogeneous, dry-damp, low plasticity, stiff, with inclusions of ash, glass, roots, rootlets, and tile	DP	TP109_0.20-0.30		No odours or staining observed. No asbestos observed in 10L AQ (TP109_0.2-0.5).
		0.4						
		0.5				TP109_0.40-0.50		
		0.6		Fill - Sandy SILT, grey-white, heterogeneous, damp, non-low plasticity, soft, with no inclusions	DP			No odours or staining observed. No asbestos observed in 10L AQ (TP109_0.5-0.8).
		0.7						
		0.8				TP109_0.70-0.80		
		0.9		CL Natural - CLAY, red, homogenous, damp, low-medium plasticity, firm-stiff, with no inclusions	DP			No odours, staining, or asbestos observed.
		1.0						
		1.1						
		1.2						
		1.3						
		1.4						
		1.5		Termination Depth at:1.50 m.		TP109_1.40-1.50		
		1.6						
		1.7						
		1.8						
		1.9						

Appendix D Tabulated Analytical Results

[illegible]

Field ID	Date	Lab Report Number	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH101_0.0-0.3	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH101_0.2-0.3	09 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH102_0.0-0.1	08 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH102_0.0-0.3	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH103_0.0-0.1	08 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH103_0.1-0.4	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH104_0.0-0.1	08 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH104_0.0-0.4	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH105_0.0-0.1	08 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH105_0.2-0.3	08 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH105_0.2-0.4	08 Jan 2025	1176585	-	-	-	-	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH105_2.9-3.0	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH106_0.0-0.4	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QA02	09 Jan 2025	370401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH106_0.2-0.3	09 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH106_0.4-0.5	09 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH106_2.9-3.0	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH107_0.0-0.1	09 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH107_0.1-0.5	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH107_2.9-3.0	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH108_0.0-0.3	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH108_0.2-0.3	09 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH108_2.9-3.0	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS01	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS02	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS03	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS04	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS05	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP101_0.0-0.1	07 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP101_0.0-0.3	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP101_0.3-0.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP102_0.2-0.4	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP102_0.4-0.5	07 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP102_1.4-1.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP103_0.0-0.1	07 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QA01	09 Jan 2025	370401	<50	<0.1	<0.1	<0.1	<0.1	<0.05	0.5	0.5	<0.5	-	<0.2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC01	09 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP103_0.0-0.3	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP104_0.0-0.3	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP104_0.4-0.5	07 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP105_0.0-0.1	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP105_0.1-0.6	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP105_0.2-0.3	07 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP105_0.4-0.5	07 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP106_0.1-0.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP106_0.2-0.3	07 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP107_0.0-0.1	07 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP107_0.0-0.2	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP107_0.2-0.4	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP108_0.1-1.0	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP108_0.2-0.3	07 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP108_1.4-1.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP109_0.2-0.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP109_0.4-0.5	07 Jan 2025	1176585	-	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP109_1.4-1.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS-01_FRAG01	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP105_FRAG01	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP105_FRAG02	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP105_FRAG03	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP105_FRAG04	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP107_FRAG01	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE A: Soil Analytical Summary
Project Name: 68150 Liverpool HS DGI + RAP, 18 Forbes Street , Meinhardt



	Organochlorine Pesticides																									
								n		e (cis)	ane (trans)	T	DDD	DDT+DDE+DDD	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Hexachlorobenzene	Methoxychlor	Mirex	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
EQL	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.5
CRC Care 2011 Table A4 Direct Contact HSL-C Recreational / Open Space																										
CRC Care 2011 Table A4 Direct Contact Intrusive Maintenance Worker																										
NEPM 2013 Table 1A(1) HILs Rec C Soil								10	70					400				20			10		10	400	20	30
NEPM 2013 Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand																										
NEPM 2013 Table 1B(6) Site Specific EIL - Urban Residential and Public Open Space Aged Soil												180														
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																										
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil																										

Field ID	Date	Lab Report Number																									
BH101_0.0-0.3	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH101_0.2-0.3	09 Jan 2025	1176585	<0.05	<0.05	<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	-	<0.5	
BH102_0.0-0.1	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH102_0.0-0.3	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH103_0.0-0.1	08 Jan 2025	1176585	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<10	
BH103_0.1-0.4	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH104_0.0-0.1	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH104_0.0-0.4	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH105_0.0-0.1	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH105_0.2-0.3	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH105_0.2-0.4	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH105_2.9-3.0	08 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH106_0.0-0.4	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
QA02	09 Jan 2025	370401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
QC02	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH106_0.2-0.3	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH106_0.4-0.5	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH106_2.9-3.0	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH107_0.0-0.1	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH107_0.1-0.5	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH107_2.9-3.0	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH108_0.0-0.3	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH108_0.2-0.3	09 Jan 2025	116585	<0.05	<0.05	<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	-	<0.5	
BH108_2.9-3.0	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SS01	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SS02	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SS03	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SS04	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SS05	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP101_0.0-0.1	07 Jan 2025	1176585	<0.05	<0.05	<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	-	<0.5	
TP101_0.0-0.3	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP101_0.3-0.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP102_0.2-0.4	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP102_0.4-0.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP102_1.4-1.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP103_0.0-0.1	07 Jan 2025	1176585	<0.05	<0.05	<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	-	<0.5	
QA01	09 Jan 2025	370401	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	
QC01	09 Jan 2025	1176585	<0.05	<0.05	<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	-	<0.5	
TP103_0.0-0.3	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP104_0.0-0.3	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP104_0.4-0.5	07 Jan 2025	1176585	<0.05	<0.05	<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	-	<0.5	
TP105_0.0-0.1	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP105_0.1-0.6	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP105_0.2-0.3	07 Jan 2025	1176585	<0.05	<0.05	<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	-	<0.5	
TP105_0.4-0.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP106_0.1-0.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP106_0.2-0.3	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP107_0.0-0.1	07 Jan 2025	1176585	<0.05	<0.05	<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	-	<0.5	
TP107_0.0-0.2	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP107_0.2-0.4	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP108_0.1-1.0	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP108_0.2-0.3	07 Jan 2025	1176585	<0.05	<0.05	<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	-	<0.5	
TP108_1.4-1.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP109_0.2-0.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP109_0.4-0.5	07 Jan 2025	1176585	<0.05	<0.05	<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	-	<0.5	
TP109_1.4-1.5	07 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SS-01_FRAG01	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP105_FRAG01	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP105_FRAG02	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP105_FRAG03	09 Jan 2025	1176585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP105_FRAG04	09 Jan 2025	1176585	-	-	-	-																					

[illegible]

[illegible]

[illegible]

TABLE B: Soil Asbestos Quantification Results
Project Name: 68150 Liverpool HS DGI + RAP, 18 Forbes Street , Meinhardt

			Field AQ Results				Laboratory Result		Combined Result			NEPC HSL-C		
AQ ID	Depth Interval	Stratum	AQ Weight grams	ACM Weight grams	Asbestos Weight ¹ grams	w/w%	ACM w/w%	AF/FA w/w%	ACM	AF/FA	Visible asbestos in surface	Bonded ACM	AF/FA	Result
Liverpool Boys and Girl Redevelopment Site														
TP101	0.0-0.3	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
TP101	0.3-0.5	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
TP102	0.2-0.4	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
TP103	0.0-0.3	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
TP104	0.0-0.3	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.001	Below HSL
TP105	0.0-0.1	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.00	Below HSL
TP105	0.1-0.6	Subsurface	20000	164	24.6	0.123	0.0	0.000	0.123	0.000	No	0.02	0.00	HSL Exceedance
TP106	0.1-0.5	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.0	Below HSL
TP107	0.0-0.2	Surface	20000	12	1.8	0.009	0.0	0.000	0.009	0.000	Yes	0.02	0.0	HSL Exceedance
TP107	0.2-0.4	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.0	Below HSL
TP108	0.1-1.0	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0.	Below HSL
TP109	0.2-0.5	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0	Below HSL
BH101	0.0-0.3	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02	0	Below HSL
BH102	0.0-0.3	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02		Below HSL
BH103	0.1-0.4	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02		Below HSL
BH104	0.0-0.4	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02		Below HSL
BH105	0.2-0.4	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02		Below HSL
BH106	0.0-0.4	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02		Below HSL
BH107	0.1-0.5	Subsurface	20000	0	0	0.000	0.0	0.000	0.000	0.000	No	0.02		Below HSL
BH108	0.0-0.3	Surface	20000	0	0	0.000	0.0	0.000					0.001	Below HSL
SS01	0.0-0.1	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	Yes	0.01	0.001	HSL Exceedance
SS02	0.0-0.1	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	Yes	0.01	0.001	HSL Exceedance
SS03	0.0-0.1	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	Yes	0.01	0.001	HSL Exceedance
SS04	0.0-0.1	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	Yes	0.01	0.001	HSL Exceedance
SS05	0.0-0.1	Surface	20000	0	0	0.000	0.0	0.000	0.000	0.000	Yes	0.01	0.001	HSL Exceedance

Action
No Action Required
No Action Required
No Action Required
No Action Required
No Action Required
No Action Required
Remediation Required
No Action Required
No Action Required
No Action Required
No Action Required
No Action Required
No Action Required
No Action Required
No Action Required
No Action Required
No Action Required
No Action Required
No Action Required
No Action Required
Remediation Required
Remediation Required
Remediation Required
Remediation Required
Remediation Required

Table D - Acid Sulfate Soil Sample Results
 Project Name: 68150 Liverpool HS DGI + RAP, 18 Forbes Street , Meinhardt



Soil Sample ID	pH _{KCl}	pH _{ox}	TAA (mol H ⁺ /tonne)	TPA (mol H ⁺ /tonne)	TSA (mol H ⁺ /tonne)	S _{POS} %	a-ANC _E (mol H ⁺ /tonne)	SPOCAS-Net Acidity (mol H ⁺ /tonne)	Liming Rate
ASSMAC Assessment Guidelines (1 - 1000 tonne disturbed, fine texture)				62	62	>0.1			
BH105_2.9-3.0	5.0	5.4	21	<2	<2	0.010	N/A	27	2
BH106_2.9-3.0	4.3	5.1	56	42	<2	0.008	N/A	68	5
BH107_2.9-3.0	4.1	4.9	69	56	<2	0.010	N/A	82	6
BH108_2.9-3.0	5.9	6.3	8	<2	<2	<0.005	N/A	<10	1
TP108_1.4-1.5	4.3	4.4	83	76	<2	0.006	N/A	90	7
TP109_1.4-1.5	4.3	5.0	53	40	<2	0.008	N/A	63	5

Appendix E Quality Assurance / Quality Control

The QA/QC results for soil samples collected at the site are summarised in **Table A, Appendix C** and discussed following. Laboratory certificates of analysis are included in **Appendix E**.

Data Quality Indicators	Frequency	Result	DQO met?
Precision			
Duplicates (intra laboratory)	1 / 20 samples	0-82% RPD	Partial
Triplicates (Inter laboratory)	1 / 20 samples	<0-50% RPD	Yes
Laboratory Duplicates ¹	Greater than 1 / 20 samples	0-199% RPD	Partial
Accuracy			
Surrogate spikes	All organic samples	52-142% RPD	Partial
Laboratory control samples	1 per lab batch	62-135% RPD	Partial
Matrix spikes	1 per lab batch	70-118% RPD	Yes
Representativeness			
Sampling appropriate for media and analytes	-	Yes	Yes
Samples extracted and analysed within holding times.	-	Yes	Yes
Laboratory blanks	1 per lab batch	<LOR	Yes
Trip spike	1 per lab batch	73-110% RPD	Yes
Trip blank	1 per lab batch	>LOR	Yes
Rinsate blank	1 per sampling data where reusable equipment is used	<LOR	N/A
Comparability			
Standard operating procedures for sample collection & handling	All Samples	All samples ²	Yes
Standard analytical methods used for all analyses	All Samples	All samples ²	Yes
Consistent field conditions, sampling staff and laboratory analysis	All Samples	All samples ²	Yes
Limits of reporting appropriate and consistent	All Samples	All samples ²	Yes
Completeness			
Sample description and COCs completed and appropriate	All Samples	All samples ²	Yes
Appropriate documentation	All Samples	All samples ²	Yes
Satisfactory frequency and result for QC samples	All QA/QC samples	.. ²	Yes
Data from critical samples is considered valid	--	Critical samples valid ²	Yes
Sensitivity			
Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria	All samples	All samples	Yes

¹ If the RPD between duplicates is greater than the pre-determined data quality indicator, a judgment was made as to whether the excess is critical in relation to the validation of the data set or unacceptable sampling error is occurring in the field.

² A qualitative assessment of compliance with standard procedures and appropriate sample collection methods was completed during the DQI compliance assessment.

Precision

A summary of all RPD calculations is provided following the QA/QC evaluation.

Blind Duplicate and Triplicate Samples

Duplicates and triplicates were collected at a rate of 1 per 20 primary samples analysed, and the 1/20 DQI frequency is met. RPDs were within the acceptable JBS&G acceptable limit (0-50%), with the exception of the following:

- Benzo(a)pyrene TEQ (LOR) with an RPD of 82% between primary (TP103_0.0-0.1) and triplicate (QA01)

It is considered that the elevated RPDs are due to the difference in LORs between the primary and secondary laboratories. All results were below the adopted criteria. Based on this, the RPDs above the DQI are not considered to affect the usability of the data set.

Laboratory Duplicates

Laboratory duplicate RPDs were not within the JBS&G acceptable limit (0-50%); but are still considered acceptable because they are within laboratory acceptable limits; and so partially meets this DQO. The rate of laboratory duplicate analysis is within the JBS&G acceptance criteria of 1 in 20 samples.

Accuracy

Surrogate Spikes

Surrogate spike recoveries were mostly reported within the JBS&G acceptable range of 70-130%. Those outside the range were within the laboratories acceptable range of 50-150% and are not considered to affect the accuracy of the data set.

Laboratory Control Samples

Laboratory control samples were mostly reported within the JBS&G acceptable range of 70-130%. Those outside the range were within the laboratories acceptable range of 50-150% and are not considered to affect the accuracy of the data set.

Matrix Spikes

Matrix spike recoveries were within the acceptable range of 70-130%.

Representativeness

Sampling appropriate for media and analytes

All soil sampling works completed during the investigation were conducted in accordance with JBS&G standard operating procedures.

Holding Times

The extraction and analysis of all samples were completed by the primary laboratory within the recommended holding times for all analytes.

Trip Spike

Trip spike recoveries were within JBS&Gs acceptable limits.

Trip Blank

Trip blank recoveries were within JBS&Gs acceptable limits.

Rinsate

A rinsate blank was not collected as no reusable equipment was used to collect samples.

Decontamination Comparability

Suitably qualified and experienced JBS&G personnel undertook all sampling in accordance with standard JBS&G sampling methods as nominated in the due diligence and daily field notes pertaining to implemented decontamination procedures are presented following.

The laboratory LORs are consistent and are considered appropriate.

Laboratory Blank

No analytes were detected within the laboratory blank; therefore, no cross contamination has occurred.

Comparability

Documentation

All documentation is complete and correct.

Frequency of QC Samples

Frequency of analysis for the QC samples collected has met or exceeded the required minimum frequency for each analyte and media analysed.

Completeness

Samples were transported under full chain of custody (COC) documentation. The COC documentation was complete, and the selected analyses were correctly conducted.

All field documentation was completed appropriately including borehole logs, COCs, and daily field logs

Sensitivity

Laboratory analysis methods for all contaminants adopted during the investigation applied limits of reporting less than the site assessment criteria.

QA/QC Assessment

The field sampling and handling procedures produced QA/QC results which indicate that the soil and water data were of an acceptable quality and suitable for use in site characterisation.

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 from this program were analysed.

On the basis of the results of the field and laboratory QA/QC program, the soil data are of an acceptable quality in order to achieve the objectives of the assessment.

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 30 (1 - 10 x EQL); 30 (10 - 30 x EQL); 30 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

****Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 30 (1 - 10 x EQL); 30 (10 - 30 x EQL); 30 (> 30 x EQL).**

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row

Appendix F Laboratory Documentation

[illegible]

48	BH106_2.9-3.0	9/01/2025	Soil					X	X											1						1	
49	BH107_0.0-0.1	9/01/2025	Soil	X	X	X																				1	
50	BH107_0.2-0.3	9/01/2025	Soil																							1	
51	BH107_0.4-0.5	9/01/2025	Soil																							1	
52	BH107_0.9-1.0	9/01/2025	Soil																							1	
53	BH107_1.4-1.5	9/01/2025	Soil																							1	
54	BH107_1.9-2.0	9/01/2025	Soil																							1	
55	BH107_2.4-2.5	9/01/2025	Soil																							1	
56	BH107_2.9-3.0	9/01/2025	Soil						X											1						1	
57	BH108_0.0-0.1	9/01/2025	Soil																							1	
58	BH108_0.2-0.3	9/01/2025	Soil	X	X	X	X																			1	
59	BH108_0.4-0.5	9/01/2025	Soil																							1	
60	BH108_0.9-1.0	9/01/2025	Soil																							1	
61	BH108_1.4-1.5	9/01/2025	Soil																							1	
62	BH108_1.9-2.0	9/01/2025	Soil																							1	
63	BH108_2.4-2.5	9/01/2025	Soil																							1	
64	BH108_2.9-3.0	9/01/2025	Soil						X											1						1	
65	TP101_0.0-0.1	7/01/2025	Soil	X	X	X	X																			1	
66	TP101_0.2-0.3	7/01/2025	Soil																							1	
67	TP101_0.4-0.5	7/01/2025	Soil																							1	
68	TP101_0.9-1.0	7/01/2025	Soil																							1	
69	TP102_0.0-0.1	7/01/2025	Soil																							1	
70	TP102_0.2-0.3	7/01/2025	Soil																							1	
71	TP102_0.4-0.5	7/01/2025	Soil	X	X	X																				1	
72	TP102_0.9-1.0	7/01/2025	Soil																							1	
73	TP102_1.4-1.5	7/01/2025	Soil						X																	1	
74	TP103_0.0-0.1	7/01/2025	Soil	X	X	X	X	X																		1	
75	TP103_0.2-0.3	7/01/2025	Soil																							1	
76	TP103_0.4-0.5	7/01/2025	Soil																							1	

[illegible]



Sydney Laboratory
179 Magowar Road Girraween NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1 21 Smellwood Place Murarie QLD 4172
07 3902 4600 EnviroSampleCLD@eurofins.com

Perth Laboratory
45-48 Banksia Road Welshpool WA 6106
08 6253 4444 Samples@ARLgroup.com.au

 Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8584 5000 EnviroSampleVic@ourolina.com

[illegible]

1176586

[illegible]

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

Re: Eurofins Sample Receipt Advice - Report 1176585 : Site Liverpool (68150)

From Eroee Piccinin <epiccinin@jbsg.com.au>

Date Mon 13/01/2025 2:34 PM

To Isaac Lee <ilee@jbsg.com.au>; SH_AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofinsanz.com>

Unverified Sender: The sender of this email has not been verified. Review the content of the message carefully and verify the identity of the sender before acting on this email: replying, opening attachments or clicking links.

Hi Team,

Could we please forward QA01 and QA02 to Envirolab Chatswood?

Can you also place on hold TP07_1.4-1.5 and have it renamed as TP107_1.4-1.5?

Kind Regards,



Eroee Piccinin | Project Consultant | JBS&G

Gadigal Country | Level 8, 179 Elizabeth Street, Sydney, NSW

T: 02 8245 0300 | M: 0420628264 | E: epiccinin@jbsg.com.au | W: jbsg.com.au | L: [Conditions and Limitations](#)

Exceptional Outcomes

From: Arany Manoj <EET-ELVIS@eurofinsanz.com>

Sent: Monday, January 13, 2025 2:14 PM

To: Isaac Lee <ilee@jbsg.com.au>

Cc: Eroee Piccinin <epiccinin@jbsg.com.au>

Subject: Eurofins Sample Receipt Advice - Report 1176585 : Site Liverpool (68150)

*****[EXTERNAL EMAIL] Stop and think before opening attachments, clicking or responding.*****

Dear Valued Client,

Extra samples received: QA01, TP07-1.4-1.5 and QA02

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

Regards

Arany Manoj

Sample Receipt

Eurofins | Environmental Testing

179 Magowar Road,

GIRRAWEE, NSW 2145

AUSTRALIA

Phone: +61 02 9900 8421

Email: EnviroSampleNSW@eurofins.com

Website: <http://environment.eurofins.com.au>

[View our latest EnviroNotes](#)

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
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Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
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Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
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Sample Receipt Advice

Company name: JBS & G Australia (NSW) P/L
Contact name: Isaac Lee
Project name: Liverpool
Project ID: 68150
Turnaround time: 5 Day
Date/Time received: Jan 10, 2025 6:54 PM
Eurofins reference: 1176585

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 1.5 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

QA01 and QA02 forwarded to ENVIROLAB.
 Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Andrew Black on phone : (+61) 2 9900 8490 or by email: Andrew.Black@eurofinsanz.com

Results will be delivered electronically via email to Isaac Lee - ilee@jbsg.com.au.



web: www.eurofins.com.au
email: EnviroSales@eurofinsanz.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079
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Company Name: JBS & G Australia (NSW) P/L

Address: Level 8, 179 Elizabeth St
Sydney
NSW 2000

Project Name: Liverpool

Project ID: 68150

Order No.: 68150

Report #: 1176585

Phone: 02 8245 0300

Fax:

Received: Jan 10, 2025 6:54 PM

Due: Jan 20, 2025

Priority: 5 Day

Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence / Presence	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B14: OCP/OPP	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
External Laboratory																			
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID														
1	BH101 0.2-0.3	Jan 09, 2025		Soil	S25-Ja0011613				X	X	X	X	X		X	X	X		
2	BH102 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011614						X	X			X		X		
3	BH103 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011615						X	X	X		X		X		
4	BH104 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011616						X	X			X		X		
5	BH105 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011617						X	X			X		X		
6	BH105 0.2-0.3	Jan 08, 2025		Soil	S25-Ja0011618						X	X			X		X		
7	BH105 2.9-3.0	Jan 08, 2025		Soil	S25-Ja0011619									X	X				
8	BH106 0.2-0.3	Jan 09, 2025		Soil	S25-Ja0011620						X	X			X		X		
9	BH106 0.4-0.5	Jan 09, 2025		Soil	S25-Ja0011621						X	X			X		X		
10	BH106 2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011622				X	X				X	X	X			
11	BH107 0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011623						X	X			X		X		
12	BH107 2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011624									X	X				



web: www.eurofins.com.au
email: EnviroSales@eurofinsanz.com

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46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 8, 179 Elizabeth St
Sydney
NSW 2000

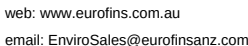
Project Name: Liverpool
Project ID: 68150

Order No.: 68150
Report #: 1176585
Phone: 02 8245 0300
Fax:

Received: Jan 10, 2025 6:54 PM
Due: Jan 20, 2025
Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
13	BH108_0.2-0.3	Jan 09, 2025		Soil	S25-Ja0011625						X	X	X		X		X		
14	BH108_2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011626									X	X				
15	TP101_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011627						X	X	X		X		X		
16	TP102_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011628						X	X			X		X		
17	TP102_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011629				X	X					X	X			
18	TP103_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011630				X	X	X	X	X		X	X	X		
19	TP104_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011631						X	X	X		X		X		
20	TP105_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011632						X	X	X		X		X		
21	TP105_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011633						X	X			X		X		
22	TP106_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011634						X	X			X		X		
23	TP107_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011635						X	X	X		X		X		
24	TP108_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011636						X	X	X		X		X		
25	TP108_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011637									X	X				
26	TP109_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011638						X	X	X		X		X		
27	TP109_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011639									X	X				



Eurofins Environment Testing NZ Ltd

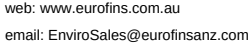
NZBN: 9429046024954

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle	Perth	Auckland	Auckland (Focus)	Christchurch	Tauranga
6 Monterey Road Dandenong South VIC 3175	19/8 Lewalan Street Grovedale VIC 3216	179 Magawar Road Girraween NSW 2145	Unit 1/2 Dacre Street Mitchell ACT 2911	1/21 Smallwood Place Murarrie QLD 4172	1/2 Frost Drive Mayfield West NSW 2304	46-48 Banksia Road Welshpool WA 6106	35 O'Rourke Road Penrose, Auckland 1061	Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061	43 Detroit Drive Rolleston, Christchurch 7675	1277 Cameron Road, Gate Pa, Tauranga 3112
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448	+61 8 6253 4444	+61 9 526 4551	+61 9 525 0568	+64 3 343 5201	+64 9 525 0568
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 2377	IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079	Site# 2370 & 2554				

Received: Jan 10, 2025 6:54 PM
Due: Jan 20, 2025
Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

[illegible]



ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079

ABN: 91 05 0159 898

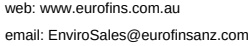
Perth
46-48 Banksia Road
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NATA# 2377
Site# 2370 & 2554

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
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Penrose,	Mout Wellington,	Rolloston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
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Eurofins Analytical Services Manager : Andrew Black

[illegible]



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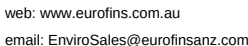
Perth
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[illegible]



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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

ABN: 91 05 0159 898

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NATA# 2377
Site# 2370 & 2554

NZBN: 9429046024954

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 8, 179 Elizabeth St
Sydney
NSW 2000

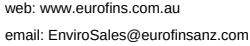
Project Name: Liverpool
Project ID: 68150

Order No.: 68150
Report #: 1176585
Phone: 02 8245 0300
Fax:

Received: Jan 10, 2025 6:54 PM
Due: Jan 20, 2025
Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

						BTEXN and Volatile TRH
						BTEXN and Volatile TRH
						Eurofins Suite B1
Sample Detail						Cation Exchange Capacity
						Moisture Set
						SPOCAS Suite
						Suite B14: OCP/OPP
						Metals M8
						Polycyclic Aromatic Hydrocarbons
						Total Organic Carbon
						pH (1:5 Aqueous extract at 25 °C as rec.)
						HOLD*
						Asbestos Absence /Presence
						Asbestos - WA guidelines
Melbourne Laboratory - NATA # 1261 Site # 1254						
Sydney Laboratory - NATA # 1261 Site # 18217						
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780						
67	BH101_1.9-2.0	Jan 09, 2025		Soil	S25-Ja0011679	
68	BH101_2.4-2.5	Jan 09, 2025		Soil	S25-Ja0011680	X
69	BH101_2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011681	X
70	BH102_0.2-0.3	Jan 08, 2025		Soil	S25-Ja0011682	X
71	BH102_0.4-0.5	Jan 08, 2025		Soil	S25-Ja0011683	X
72	BH102_0.9-1.0	Jan 08, 2025		Soil	S25-Ja0011684	X
73	BH102_1.4-1.5	Jan 08, 2025		Soil	S25-Ja0011685	X
74	BH102_1.9-2.0	Jan 08, 2025		Soil	S25-Ja0011686	X
75	BH102_2.4-2.5	Jan 08, 2025		Soil	S25-Ja0011687	X
76	BH102_2.9-3.0	Jan 08, 2025		Soil	S25-Ja0011688	X
77	BH103_0.2-0.3	Jan 08, 2025		Soil	S25-Ja0011689	X
78	BH103_0.4-0.5	Jan 08, 2025		Soil	S25-Ja0011690	X
79	BH103_0.9-1.0	Jan 08, 2025		Soil	S25-Ja0011691	X
80	BH103_1.4-1.5	Jan 08, 2025		Soil	S25-Ja0011692	X
81	BH103_1.9-2.0	Jan 08, 2025		Soil	S25-Ja0011693	X



ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magawar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1/21 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079

ABN: 91 05 0159 898

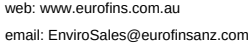
Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370 & 2554

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mout Wellington,	Rollleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Eurofins Analytical Services Manager : Andrew Black

[illegible]



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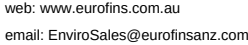
Perth
46-48 Banksia Road
Welshpool
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NATA# 2377
Site# 2370 & 2554

NZBN: 9429046024954

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ABN: 91 05 0159 898

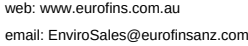
Perth
46-48 Banksia Road
Welshpool
WA 6106
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NATA# 2377
Site# 2370 & 2554

NZBN: 9429046024954

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Penrose,	Mout Wellington,	Rollleston,	Gate Pa,
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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Eurofins Analytical Services Manager : Andrew Black

[illegible]



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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Received: Jan 10, 2025 6:54 PM
Due: Jan 20, 2025
Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

[illegible]



Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402

Company Name:	JBS & G Australia (NSW) P/L	Order No.:	68150	Received:	Jan 10, 2025 6:54 PM
Address:	Level 8, 179 Elizabeth St Sydney NSW 2000	Report #:	1176585	Due:	Jan 20, 2025
		Phone:	02 8245 0300	Priority:	5 Day
		Fax:		Contact Name:	Isaac Lee
Project Name:	Liverpool				
Project ID:	68150				

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence / Presence	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B14: OCP/OPP	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
142	TP104_0.3-0.7	Jan 07, 2025		Soil	S25-Ja0011754			X											
143	TP106_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011755			X											
144	TP107_0.4-0.6	Jan 07, 2025		Soil	S25-Ja0011756			X											
145	TP108_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011757			X											
146	TP109_0.0-0.2	Jan 07, 2025		Soil	S25-Ja0011758			X											
147	TP109_0.5-0.8	Jan 07, 2025		Soil	S25-Ja0011759			X											
148	BH103_0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011760			X											
149	BH105_0.0-0.2	Jan 08, 2025		Soil	S25-Ja0011761			X											
150	BH107_0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011762			X											
151	TP107-1.4-1.5	Jan 09, 2025		Soil	S25-Ja0012114			X											
Test Counts						27	6	89	4	4	21	21	11	6	28	4	21	1	1

JBS & G Australia (NSW) P/L
Level 8, 179 Elizabeth St
Sydney
NSW 2000



NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: Isaac Lee
Report 1176585-AID
Project Name Liverpool
Project ID 68150
Received Date Jan 10, 2025
Date Reported Jan 21, 2025

Methodology:

Asbestos Fibre
 Identification

Conducted in accordance with the Australian Standard AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004 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.

Man-made vitreous
 fibre (MMVF)

Fibres exhibiting isotropic characteristics, including glass fibres, glass wool, rock wool, slag wool, ceramic fibres and bio-soluble fibres. NOTE: previously known as "synthetic mineral fibre" (SMF). Simple analytical procedures such as polarised light microscopy cannot detect or reliably identify asbestos in some types of commercial products containing asbestos, either because the fibres are below the resolution of optical microscopy or because the matrix material adheres too strongly to the fibres. For these types of products, electron microscopy may be necessary.

Subsampling Soil
 Samples

The sample submitted is dried and passed through a 10 mm sieve followed by a 2 mm sieve. All fibrous matter greater than 10 mm and greater than 2 mm and the material passing through the 2 mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 g to 60 g, then a subsampling routine based on ISO 3082:2017(E) is employed.

NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be subsampled for trace analysis, in accordance with AS 5370:2024.*

Bonded asbestos-
 containing material
 (ACM)

The material is first examined, and any fibres are 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 5370:2024*.

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
 (LOR)

The performance limitation of the AS 5370:2024* method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory limit of reporting, per se. Examination of large sample size (e.g., 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 5370:2024*, and hence, NATA Accreditation does not cover the performance of this service (non-NATA results are shown with an asterisk).

NOTE: NATA News March 2014, p.7, states in relation to AS 4964-2004: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.

Project Name Liverpool
Project ID 68150
Date Sampled Jan 07, 2025 to Jan 09, 2025
Report 1176585-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP101_0.0-0.3	25-Ja0011640	Jan 07, 2025	Approximate Sample 813g Sample consisted of: Brown fine-grain clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP101_0.3-0.5	25-Ja0011641	Jan 07, 2025	Approximate Sample 944g Sample consisted of: Brown fine-grain clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP102_0.2-0.4	25-Ja0011642	Jan 07, 2025	Approximate Sample 713g Sample consisted of: Red-Brown fine-grain clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP103_0.0-0.3	25-Ja0011643	Jan 07, 2025	Approximate Sample 792g Sample consisted of: Brown fine-grain clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP104_0.0-0.3	25-Ja0011644	Jan 07, 2025	Approximate Sample 821g Sample consisted of: Brown fine-grain clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP105_0.0-0.1	25-Ja0011645	Jan 07, 2025	Approximate Sample 1004g Sample consisted of: Brown fine-grain clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP105_0.1-0.6	25-Ja0011646	Jan 07, 2025	Approximate Sample 773g Sample consisted of: Brown fine-grain clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP106_0.1-0.5	25-Ja0011647	Jan 07, 2025	Approximate Sample 832g Sample consisted of: Brown fine-grain clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP107_0.0-0.2	25-Ja0011648	Jan 07, 2025	Approximate Sample 664g Sample consisted of: Brown fine-grain clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP107_0.2-0.4	25-Ja0011649	Jan 07, 2025	Approximate Sample 745g Sample consisted of: Brown fine-grain clayey sandy soil, brick, glass fragments and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP108_0.1-1.0	25-Ja0011650	Jan 07, 2025	Approximate Sample 806g Sample consisted of: Brown fine-grain clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP109_0.2-0.5	25-Ja0011651	Jan 07, 2025	Approximate Sample 853g Sample consisted of: Brown fine-grain clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH101_0.0-0.3	25-Ja0011652	Jan 09, 2025	Approximate Sample 856g Sample consisted of: Brown fine-grain clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH102_0.0-0.3	25-Ja0011653	Jan 08, 2025	Approximate Sample 844g Sample consisted of: Brown fine-grain clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH103_0.1-0.4	25-Ja0011654	Jan 08, 2025	Approximate Sample 807g Sample consisted of: Red-Brown fine-grain clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH104_0.0-0.4	25-Ja0011655	Jan 08, 2025	Approximate Sample 770g Sample consisted of: Brown coarse-grained clayey sandy soil, bitumen like material and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH105_0.2-0.4	25-Ja0011656	Jan 08, 2025	Approximate Sample 634g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH106_0.0-0.4	25-Ja0011657	Jan 09, 2025	Approximate Sample 861g Sample consisted of: Brown coarse-grained clayey sandy soil, bitumen like material and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH107_0.1-0.5	25-Ja0011658	Jan 09, 2025	Approximate Sample 949g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH108_0.0-0.3	25-Ja0011659	Jan 09, 2025	Approximate Sample 792g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS01	25-Ja0011660	Jan 09, 2025	Approximate Sample 660g Sample consisted of: Brown coarse-grained clayey sandy soil, bitumen like material and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
SS02	25-Ja0011661	Jan 09, 2025	Approximate Sample 774g Sample consisted of: Red-Brown coarse-grained clayey soil, cement and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS03	25-Ja0011662	Jan 09, 2025	Approximate Sample 893g Sample consisted of: Brown fine-grain clayey sandy soil, cement and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS04	25-Ja0011663	Jan 09, 2025	Approximate Sample 724g Sample consisted of: Brown fine-grain clayey sandy soil, cement and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS05	25-Ja0011664	Jan 09, 2025	Approximate Sample 741g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
QC01	25-Ja0011665	Jan 09, 2025	Approximate Sample 738g Sample consisted of: Brown fine-grain clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
QC02	25-Ja0011666	Jan 09, 2025	Approximate Sample 853g Sample consisted of: Brown coarse-grained clayey sandy soil, bitumen like material and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP105_FRAG01	25-Ja0011667	Jan 09, 2025	Approximate Sample 22g / 82x26x5mm Sample consisted of: Grey compressed fibre cement material	Chrysotile and amosite asbestos detected.
TP105_FRAG02	25-Ja0011668	Jan 09, 2025	Approximate Sample 27g / 61x35x5mm Sample consisted of: Grey compressed fibre cement material	Chrysotile and amosite asbestos detected.
TP105_FRAG03	25-Ja0011669	Jan 09, 2025	Approximate Sample 89g / 96x72x5mm Sample consisted of: Grey compressed fibre cement material	Chrysotile and amosite asbestos detected.
TP105_FRAG04	25-Ja0011670	Jan 09, 2025	Approximate Sample 26g / 38x32x6mm Sample consisted of: Grey compressed fibre cement material	Chrysotile and amosite asbestos detected.
TP107_FRAG01	25-Ja0011671	Jan 09, 2025	Approximate Sample 12g / 39x35x4mm Sample consisted of: Grey compressed fibre cement material	Chrysotile, amosite and crocidolite asbestos detected.
SS-01_FRAG01	25-Ja0011672	Jan 09, 2025	Approximate Sample 18g / 60x51x4mm Sample consisted of: Off-White compressed fibre cement	Chrysotile asbestos detected.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Jan 13, 2025	Indefinite
Asbestos - LTM-ASB-8020	Sydney	Jan 13, 2025	Indefinite

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554	Auckland 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
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Company Name: JBS & G Australia (NSW) P/L
Address: Level 8, 179 Elizabeth St
Sydney
NSW 2000

Project Name: Liverpool
Project ID: 68150

Order No.: 68150
Report #: 1176585
Phone: 02 8245 0300
Fax:

Received: Jan 10, 2025 6:54 PM
Due: Jan 20, 2025
Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence / Presence	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B14: OCP/OPP	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
External Laboratory																			
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID														
1	BH101 0.2-0.3	Jan 09, 2025		Soil	S25-Ja0011613				X	X	X	X	X		X	X	X		
2	BH102 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011614						X	X			X		X		
3	BH103 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011615						X	X	X		X		X		
4	BH104 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011616						X	X			X		X		
5	BH105 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011617						X	X			X		X		
6	BH105 0.2-0.3	Jan 08, 2025		Soil	S25-Ja0011618						X	X			X		X		
7	BH105 2.9-3.0	Jan 08, 2025		Soil	S25-Ja0011619									X	X				
8	BH106 0.2-0.3	Jan 09, 2025		Soil	S25-Ja0011620						X	X			X		X		
9	BH106 0.4-0.5	Jan 09, 2025		Soil	S25-Ja0011621						X	X			X		X		
10	BH106 2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011622				X	X				X	X	X			
11	BH107 0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011623						X	X			X		X		
12	BH107 2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011624									X	X				



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Site# 18217

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Company Name: JBS & G Australia (NSW) P/L
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Project ID: 68150

Order No.: 68150
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Phone: 02 8245 0300
Fax:

Received: Jan 10, 2025 6:54 PM
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Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence / Presence	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B14: OCP/OPP	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
13	BH108_0.2-0.3	Jan 09, 2025		Soil	S25-Ja0011625						X	X	X		X		X		
14	BH108_2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011626									X	X				
15	TP101_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011627						X	X	X		X		X		
16	TP102_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011628						X	X			X		X		
17	TP102_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011629				X	X					X	X			
18	TP103_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011630				X	X	X	X	X		X	X	X		
19	TP104_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011631						X	X	X		X		X		
20	TP105_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011632						X	X	X		X		X		
21	TP105_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011633						X	X			X		X		
22	TP106_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011634						X	X			X		X		
23	TP107_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011635						X	X	X		X		X		
24	TP108_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011636						X	X	X		X		X		
25	TP108_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011637									X	X				
26	TP109_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011638						X	X	X		X		X		
27	TP109_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011639									X	X				



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Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
28	TP101_0.0-0.3	Jan 07, 2025		Soil	S25-Ja0011640	X													
29	TP101_0.3-0.5	Jan 07, 2025		Soil	S25-Ja0011641	X													
30	TP102_0.2-0.4	Jan 07, 2025		Soil	S25-Ja0011642	X													
31	TP103_0.0-0.3	Jan 07, 2025		Soil	S25-Ja0011643	X													
32	TP104_0.0-0.3	Jan 07, 2025		Soil	S25-Ja0011644	X													
33	TP105_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011645	X													
34	TP105_0.1-0.6	Jan 07, 2025		Soil	S25-Ja0011646	X													
35	TP106_0.1-0.5	Jan 07, 2025		Soil	S25-Ja0011647	X													
36	TP107_0.0-0.2	Jan 07, 2025		Soil	S25-Ja0011648	X													
37	TP107_0.2-0.4	Jan 07, 2025		Soil	S25-Ja0011649	X													
38	TP108_0.1-1.0	Jan 07, 2025		Soil	S25-Ja0011650	X													
39	TP109_0.2-0.5	Jan 07, 2025		Soil	S25-Ja0011651	X													
40	BH101_0.0-0.3	Jan 09, 2025		Soil	S25-Ja0011652	X													
41	BH102_0.0-0.3	Jan 08, 2025		Soil	S25-Ja0011653	X													
42	BH103_0.1-0.4	Jan 08, 2025		Soil	S25-Ja0011654	X													



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Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
43	BH104_0.0-0.4	Jan 08, 2025		Soil	S25-Ja0011655	X													
44	BH105_0.2-0.4	Jan 08, 2025		Soil	S25-Ja0011656	X													
45	BH106_0.0-0.4	Jan 09, 2025		Soil	S25-Ja0011657	X													
46	BH107_0.1-0.5	Jan 09, 2025		Soil	S25-Ja0011658	X													
47	BH108_0.0-0.3	Jan 09, 2025		Soil	S25-Ja0011659	X													
48	SS01	Jan 09, 2025		Soil	S25-Ja0011660	X													
49	SS02	Jan 09, 2025		Soil	S25-Ja0011661	X													
50	SS03	Jan 09, 2025		Soil	S25-Ja0011662	X													
51	SS04	Jan 09, 2025		Soil	S25-Ja0011663	X													
52	SS05	Jan 09, 2025		Soil	S25-Ja0011664	X													
53	QC01	Jan 09, 2025		Soil	S25-Ja0011665	X					X	X	X		X		X		
54	QC02	Jan 09, 2025		Soil	S25-Ja0011666	X													
55	TP105_FRAG 01	Jan 09, 2025		Building Materials	S25-Ja0011667		X												
56	TP105_FRAG	Jan 09, 2025		Building	S25-Ja0011668		X												



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Melbourne Laboratory - NATA # 1261 Site # 1254										X							X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
	02			Materials															
57	TP105_FRAG 03	Jan 09, 2025		Building Materials	S25-Ja0011669		X												
58	TP105_FRAG 04	Jan 09, 2025		Building Materials	S25-Ja0011670		X												
59	TP107_FRAG 01	Jan 09, 2025		Building Materials	S25-Ja0011671		X												
60	SS-01_FRAG01	Jan 09, 2025		Building Materials	S25-Ja0011672		X												
61	TS	Jan 07, 2025		Trip Spike (liquid)	S25-Ja0011673														X
62	TB	Jan 07, 2025		Trip Blank (liquid)	S25-Ja0011674													X	
63	BH101_0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011675			X											
64	BH101_0.4-0.5	Jan 09, 2025		Soil	S25-Ja0011676			X											
65	BH101_0.9-1.0	Jan 09, 2025		Soil	S25-Ja0011677			X											
66	BH101_1.4-1.5	Jan 09, 2025		Soil	S25-Ja0011678			X											



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Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
67	BH101_1.9-2.0	Jan 09, 2025		Soil	S25-Ja0011679			X											
68	BH101_2.4-2.5	Jan 09, 2025		Soil	S25-Ja0011680			X											
69	BH101_2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011681			X											
70	BH102_0.2-0.3	Jan 08, 2025		Soil	S25-Ja0011682			X											
71	BH102_0.4-0.5	Jan 08, 2025		Soil	S25-Ja0011683			X											
72	BH102_0.9-1.0	Jan 08, 2025		Soil	S25-Ja0011684			X											
73	BH102_1.4-1.5	Jan 08, 2025		Soil	S25-Ja0011685			X											
74	BH102_1.9-2.0	Jan 08, 2025		Soil	S25-Ja0011686			X											
75	BH102_2.4-2.5	Jan 08, 2025		Soil	S25-Ja0011687			X											
76	BH102_2.9-3.0	Jan 08, 2025		Soil	S25-Ja0011688			X											
77	BH103_0.2-0.3	Jan 08, 2025		Soil	S25-Ja0011689			X											
78	BH103_0.4-0.5	Jan 08, 2025		Soil	S25-Ja0011690			X											
79	BH103_0.9-1.0	Jan 08, 2025		Soil	S25-Ja0011691			X											
80	BH103_1.4-1.5	Jan 08, 2025		Soil	S25-Ja0011692			X											
81	BH103_1.9-2.0	Jan 08, 2025		Soil	S25-Ja0011693			X											



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Melbourne Laboratory - NATA # 1261 Site # 1254										X							X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
82	BH103_2.4-2.5	Jan 08, 2025		Soil	S25-Ja0011694			X											
83	BH103_2.9-3.0	Jan 08, 2025		Soil	S25-Ja0011695			X											
84	BH104_0.2-0.3	Jan 08, 2025		Soil	S25-Ja0011696			X											
85	BH104_0.4-0.5	Jan 08, 2025		Soil	S25-Ja0011697			X											
86	BH104_0.9-1.0	Jan 08, 2025		Soil	S25-Ja0011698			X											
87	BH104_1.4-1.5	Jan 08, 2025		Soil	S25-Ja0011699			X											
88	BH104_1.9-2.0	Jan 08, 2025		Soil	S25-Ja0011700			X											
89	BH104_2.4-2.5	Jan 08, 2025		Soil	S25-Ja0011701			X											
90	BH104_2.9-3.0	Jan 08, 2025		Soil	S25-Ja0011702			X											
91	BH105_0.4-0.5	Jan 08, 2025		Soil	S25-Ja0011703			X											
92	BH105_0.9-1.0	Jan 08, 2025		Soil	S25-Ja0011704			X											
93	BH105_1.4-1.5	Jan 08, 2025		Soil	S25-Ja0011705			X											
94	BH105_1.9-2.0	Jan 08, 2025		Soil	S25-Ja0011706			X											
95	BH105_2.4-2.5	Jan 08, 2025		Soil	S25-Ja0011707			X											
96	BH106_0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011708			X											



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Site# 18217

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NATA# 1261
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Site# 20794 & 2780

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IANZ# 1402

Company Name: JBS & G Australia (NSW) P/L
Address: Level 8, 179 Elizabeth St
Sydney
NSW 2000

Project Name: Liverpool
Project ID: 68150

Order No.: 68150
Report #: 1176585
Phone: 02 8245 0300
Fax:

Received: Jan 10, 2025 6:54 PM
Due: Jan 20, 2025
Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence / Presence	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B14: OCP/OPP	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X							X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
97	BH106_0.9-1.0	Jan 09, 2025		Soil	S25-Ja0011709			X											
98	BH106_1.4-1.5	Jan 09, 2025		Soil	S25-Ja0011710			X											
99	BH106_1.9-2.0	Jan 09, 2025		Soil	S25-Ja0011711			X											
100	BH106_2.4-2.5	Jan 09, 2025		Soil	S25-Ja0011712			X											
101	BH107_0.2-0.3	Jan 09, 2025		Soil	S25-Ja0011713			X											
102	BH107_0.4-0.5	Jan 09, 2025		Soil	S25-Ja0011714			X											
103	BH107_0.9-1.0	Jan 09, 2025		Soil	S25-Ja0011715			X											
104	BH107_1.4-1.5	Jan 09, 2025		Soil	S25-Ja0011716			X											
105	BH107_1.9-2.0	Jan 09, 2025		Soil	S25-Ja0011717			X											
106	BH107_2.4-2.5	Jan 09, 2025		Soil	S25-Ja0011718			X											
107	BH108_0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011719			X											
108	BH108_0.4-0.5	Jan 09, 2025		Soil	S25-Ja0011720			X											
109	BH108_0.9-1.0	Jan 09, 2025		Soil	S25-Ja0011721			X											
110	BH108_1.4-1.5	Jan 09, 2025		Soil	S25-Ja0011722			X											
111	BH108_1.9-2.0	Jan 09, 2025		Soil	S25-Ja0011723			X											

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554	Auckland 35 O'Rourke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
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Company Name: JBS & G Australia (NSW) P/L
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Project Name: Liverpool
Project ID: 68150

Order No.: 68150
Report #: 1176585
Phone: 02 8245 0300
Fax:

Received: Jan 10, 2025 6:54 PM
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Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence / Presence	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B14: OCP/OPP	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
112	BH108_2.4-2.5	Jan 09, 2025		Soil	S25-Ja0011724			X											
113	TP101_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011725			X											
114	TP101_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011726			X											
115	TP101_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011727			X											
116	TP102_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011728			X											
117	TP102_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011729			X											
118	TP102_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011730			X											
119	TP103_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011731			X											
120	TP103_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011732			X											
121	TP104_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011733			X											
122	TP104_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011734			X											
123	TP104_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011735			X											
124	TP105_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011736			X											
125	TP105_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011737			X											
126	TP105_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011738			X											



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Project Name: Liverpool
Project ID: 68150

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Phone: 02 8245 0300
Fax:

Received: Jan 10, 2025 6:54 PM
Due: Jan 20, 2025
Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
127	TP106_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011739			X											
128	TP106_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011740			X											
129	TP106_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011741			X											
130	TP107_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011742			X											
131	TP107_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011743			X											
132	TP107_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011744			X											
133	TP107_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011745			X											
134	TP108_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011746			X											
135	TP108_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011747			X											
136	TP108_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011748			X											
137	TP109_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011749			X											
138	TP109_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011750			X											
139	TP109_0.7-0.8	Jan 07, 2025		Soil	S25-Ja0011751			X											
140	TP102_0.0-0.2	Jan 07, 2025		Soil	S25-Ja0011752			X											
141	TP102_0.4-0.7	Jan 07, 2025		Soil	S25-Ja0011753			X											



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Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
142	TP104_0.3-0.7	Jan 07, 2025		Soil	S25-Ja0011754			X											
143	TP106_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011755			X											
144	TP107_0.4-0.6	Jan 07, 2025		Soil	S25-Ja0011756			X											
145	TP108_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011757			X											
146	TP109_0.0-0.2	Jan 07, 2025		Soil	S25-Ja0011758			X											
147	TP109_0.5-0.8	Jan 07, 2025		Soil	S25-Ja0011759			X											
148	BH103_0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011760			X											
149	BH105_0.0-0.2	Jan 08, 2025		Soil	S25-Ja0011761			X											
150	BH107_0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011762			X											
151	TP107-1.4-1.5	Jan 09, 2025		Soil	S25-Ja0012114			X											
Test Counts						27	6	89	4	4	21	21	11	6	28	4	21	1	1

Internal Quality Control Review and Glossary General

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

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (% w/w)
F/fld	Airborne fibre filter loading as Fibres (N) per Fields counted (n)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (C)
g, kg	Mass, e.g. of whole sample (M) or asbestos-containing find within the sample (m)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (V = r x t)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (r)
min	Time (t), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\% w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A) \times x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix may be derived from knowledge or experience of the material, informed by HSG264 <i>Appendix 2</i> , else assumed to be 15% in accordance with WA DOH <i>Appendix 2</i> (PA). This estimate is not NATA-accredited.
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g., by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total %w/w asbestos content in asbestos-containing finds in a soil sample (% w/w).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004..
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004..
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos-containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to distinguish visibly and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
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 the degree of friability.
HSG248	UK HSE HSG248, <i>Asbestos: The Analysts Guide</i> , 2 nd Edition (2021), ISBN: 9780616667079.
HSG264	UK HSE HSG264, <i>Asbestos: The Survey Guide</i> (2012), ISBN: 9780717665020
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (K) as derived from the effective filter area of the given AFM membrane used for collecting the sample (A) and the projected eyepiece graticule area of the specific microscope used for the analysis (a).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, <i>Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres</i> , 2nd Edition [NOHSC:3003(2005)].
MMVF	Man-Made Vitreous Fibre - exhibiting isotropic characteristics, including glass fibres, glass wool, rock wool, slag wool, ceramic fibres and "bio-soluble fibres". NOTE: previously known as "synthetic mineral fibre" (SMF).
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004..
PCM	Phase Contrast Microscopy. This is used for fibre counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004..
Sampling	Unless otherwise stated, Eurofins are not responsible for sampling equipment or the sampling process.
SRA	Sample Receipt Advice.
Trace Analysis	An analytical procedure is used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according to AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.. It may include (but is not limited to) actinolite, anthophyllite, or tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, <i>Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia</i> (updated 2021), including Appendix Four: <i>Laboratory analysis</i>
Weighted Average	Combined average %w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (%_{WA}).

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

Asbestos Counter/Identifier:

Sayeed Abu Senior Analyst-Asbestos

Authorised by:

Chamath JHM Annakkage Senior Analyst-Asbestos



Glenn Jackson
Managing Director

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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JBS & G Australia (NSW) P/L
Level 8, 179 Elizabeth St
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NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Isaac Lee**

Report **1176585-S**
 Project name **Liverpool**
 Project ID **68150**
 Received Date **Jan 10, 2025**

Client Sample ID			BH101_0.2-0.3	BH102_0.0-0.1	G01BH103_0.0-0.1	BH104_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011613	S25-Ja0011614	S25-Ja0011615	S25-Ja0011616
Date Sampled			Jan 09, 2025	Jan 08, 2025	Jan 08, 2025	Jan 08, 2025
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	21	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	660	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	1900	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	2581	< 50
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	1900	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	2100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	4000	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	60	53	^{Q09} INT	100
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			BH101_0.2-0.3	BH102_0.0-0.1	G01BH103_0.0-0.1	BH104_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011613	S25-Ja0011614	S25-Ja0011615	S25-Ja0011616
Date Sampled			Jan 09, 2025	Jan 08, 2025	Jan 08, 2025	Jan 08, 2025
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	120	114	140	140
p-Terphenyl-d14 (surr.)	1	%	99	93	101	111
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 1	-
4,4'-DDD	0.05	mg/kg	< 0.05	-	< 0.5	-
4,4'-DDE	0.05	mg/kg	< 0.05	-	< 0.5	-
4,4'-DDT	0.05	mg/kg	< 0.05	-	< 0.5	-
a-HCH	0.05	mg/kg	< 0.05	-	< 0.5	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.5	-
b-HCH	0.05	mg/kg	< 0.05	-	< 0.5	-
d-HCH	0.05	mg/kg	< 0.05	-	< 0.5	-
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.5	-
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.5	-
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.5	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.5	-
Endrin	0.05	mg/kg	< 0.05	-	< 0.5	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.5	-
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.5	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	< 0.5	-
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.5	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.5	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.5	-
Methoxychlor	0.05	mg/kg	< 0.05	-	< 0.5	-
Toxaphene	0.5	mg/kg	< 0.5	-	< 10	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	< 0.5	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	< 0.5	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	< 1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	< 1	-
Dibutylchloroendate (surr.)	1	%	71	-	88	-
Tetrachloro-m-xylene (surr.)	1	%	91	-	115	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	< 0.5	-
Bolstar	0.2	mg/kg	< 0.2	-	< 0.5	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	< 0.5	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-	< 0.5	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	< 0.5	-
Coumaphos	2	mg/kg	< 2	-	< 5	-
Demeton-S	0.2	mg/kg	< 0.2	-	< 0.5	-
Demeton-O	0.2	mg/kg	< 0.2	-	< 0.5	-
Diazinon	0.2	mg/kg	< 0.2	-	< 0.5	-
Dichlorvos	0.2	mg/kg	< 0.2	-	< 0.5	-

Client Sample ID			BH101_0.2-0.3	BH102_0.0-0.1	^{G01} BH103_0.0-0.1	BH104_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011613	S25-Ja0011614	S25-Ja0011615	S25-Ja0011616
Date Sampled			Jan 09, 2025	Jan 08, 2025	Jan 08, 2025	Jan 08, 2025
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Dimethoate	0.2	mg/kg	< 0.2	-	< 0.5	-
Disulfoton	0.2	mg/kg	< 0.2	-	< 0.5	-
EPN	0.2	mg/kg	< 0.2	-	< 0.5	-
Ethion	0.2	mg/kg	< 0.2	-	< 0.5	-
Ethoprop	0.2	mg/kg	< 0.2	-	< 0.5	-
Ethyl parathion	0.2	mg/kg	< 0.2	-	< 0.5	-
Fenitrothion	0.2	mg/kg	< 0.2	-	< 0.5	-
Fensulfothion	0.2	mg/kg	< 0.2	-	< 0.5	-
Fenthion	0.2	mg/kg	< 0.2	-	< 0.5	-
Malathion	0.2	mg/kg	< 0.2	-	< 0.5	-
Merphos	0.2	mg/kg	< 0.2	-	< 0.5	-
Methyl parathion	0.2	mg/kg	< 0.2	-	< 0.5	-
Mevinphos	0.2	mg/kg	< 0.2	-	< 0.5	-
Monocrotophos	2	mg/kg	< 2	-	< 5	-
Naled	0.2	mg/kg	< 0.2	-	< 0.5	-
Omethoate	2	mg/kg	< 2	-	< 5	-
Phorate	0.2	mg/kg	< 0.2	-	< 0.5	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	< 0.5	-
Pyrazophos	0.2	mg/kg	< 0.2	-	< 0.5	-
Ronnel	0.2	mg/kg	< 0.2	-	< 0.5	-
Terbufos	0.2	mg/kg	< 0.2	-	< 0.5	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	< 0.5	-
Tokuthion	0.2	mg/kg	< 0.2	-	< 0.5	-
Trichloronate	0.2	mg/kg	< 0.2	-	< 0.5	-
Triphenylphosphate (surr.)	1	%	81	-	85	-
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	13	-	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	7.5	-	-	-
Total Organic Carbon	0.1	%	0.1	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	11	6.7	6.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	7.1	25	71	36
Copper	5	mg/kg	< 5	9.2	27	57
Lead	5	mg/kg	13	19	< 5	42
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.3
Nickel	5	mg/kg	< 5	< 5	63	130
Zinc	5	mg/kg	13	7.4	45	100
Cation Exchange Capacity						
Cation Exchange Capacity	0.5	meq/100g	2.7	-	-	-
Sample Properties						
% Moisture	1	%	11	17	4.4	14

Client Sample ID			BH105_0.0-0.1	BH105_0.2-0.3	BH105_2.9-3.0	BH106_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011617	S25-Ja0011618	S25-Ja0011619	S25-Ja0011620
Date Sampled			Jan 08, 2025	Jan 08, 2025	Jan 08, 2025	Jan 09, 2025
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	-	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	-	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	-	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	-	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	-	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	-	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2) ^{*N01}	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	-	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	-	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	82	75	-	108
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
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	%	130	129	-	122
p-Terphenyl-d14 (surr.)	1	%	113	115	-	104

Client Sample ID			BH105_0.0-0.1	BH105_0.2-0.3	BH105_2.9-3.0	BH106_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011617	S25-Ja0011618	S25-Ja0011619	S25-Ja0011620
Date Sampled			Jan 08, 2025	Jan 08, 2025	Jan 08, 2025	Jan 09, 2025
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	4.2	9.3	-	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
Chromium	5	mg/kg	12	23	-	14
Copper	5	mg/kg	7.8	12	-	22
Lead	5	mg/kg	40	14	-	9.2
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Nickel	5	mg/kg	< 5	< 5	-	29
Zinc	5	mg/kg	23	5.5	-	18
Sample Properties						
% Moisture	1	%	13	19	14	27
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	-	-	5.0	-
Titrateable Actual Acidity (NLM-3.2)	2	mol H+/t	-	-	21	-
Titrateable Actual Acidity (NLM-3.2)	0.003	% pyrite S	-	-	0.030	-
Potential Acidity - Titrateable Peroxide						
pH-OX	0.1	pH Units	-	-	5.4	-
Titrateable Peroxide Acidity (s-TPA)	0.02	% pyrite S	-	-	< 0.02	-
Titrateable Peroxide Acidity (a-TPA)	2	mol H+/t	-	-	< 2	-
Titrateable Sulfidic Acidity (a-TSA)	2	mol H+/t	-	-	< 2	-
Titrateable Sulfidic Acidity (s-TSA)	0.02	% pyrite S	-	-	< 0.02	-
Extractable Sulfur						
Sulfur - KCl Extractable	0.005	% S	-	-	0.030	-
Peroxide Extractable Sulfur	0.005	% S	-	-	0.040	-
HCl Extractable Sulfur	0.005	% S	-	-	N/A	-
Potential Acidity (SPOS)						
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	0.005	% S	-	-	0.010	-
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	2	mol H+/t	-	-	6.2	-
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (s-SNAS) NLM-4.1 ^{S02}	0.005	% S	-	-	N/A	-
Net Acid soluble sulfur (a-SNAS) NLM-4.1	2	mol H+/t	-	-	N/A	-
HCl Extractable Sulfur Correction Factor	1	factor	-	-	2.0	-
Extractable Calcium						
Calcium - KCl Extractable	0.005	% Ca	-	-	0.050	-
Calcium - Peroxide	0.005	% Ca	-	-	0.050	-
Calcium - Acid Reacted	0.005	% Ca	-	-	0.007	-
Calcium - Acid Reacted (s-aCa)	0.005	% S	-	-	0.005	-
Calcium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	-	3.3	-
Extractable Magnesium						
Magnesium - KCl Extractable	0.005	% Mg	-	-	0.14	-
Magnesium - Peroxide	0.005	% Mg	-	-	0.14	-
Magnesium - Acid Reacted	0.005	% Mg	-	-	< 0.005	-
Magnesium - Acid Reacted (s-aCa)	0.005	% S	-	-	< 0.005	-
Magnesium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	-	< 0.005	-
Acid Neutralising Capacity (ANCE)						
Acid Neutralising Capacity - (ANCE)	0.02	% CaCO3	-	-	N/A	-
Acid Neutralising Capacity - (s-ANCE)	0.02	% S	-	-	N/A	-
Acid Neutralising Capacity - (a-ANCE)	10	mol H+/t	-	-	n/a	-
Acid Neutralising Capacity (ANCbt)						
ANC Fineness Factor		factor	-	-	1.5	-

Client Sample ID			BH105_0.0-0.1	BH105_0.2-0.3	BH105_2.9-3.0	BH106_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011617	S25-Ja0011618	S25-Ja0011619	S25-Ja0011620
Date Sampled			Jan 08, 2025	Jan 08, 2025	Jan 08, 2025	Jan 09, 2025
Test/Reference	LOR	Unit				
Net Acidity (Including ANC)						
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	10	mol H ⁺ /t	-	-	27	-
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	0.02	% S	-	-	0.04	-
SPOCAS - Liming rate - ASSMAC	1	kg CaCO ₃ /t	-	-	2.0	-
Extraneous Material						
<2mm Fraction	0.005	g	-	-	93	-
>2mm Fraction	0.005	g	-	-	< 0.005	-
Analysed Material	0.1	%	-	-	100	-
Extraneous Material	0.1	%	-	-	< 0.1	-

Client Sample ID			BH106_0.4-0.5	BH106_2.9-3.0	BH107_0.0-0.1	BH107_2.9-3.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011621	S25-Ja0011622	S25-Ja0011623	S25-Ja0011624
Date Sampled			Jan 09, 2025	Jan 09, 2025	Jan 09, 2025	Jan 09, 2025
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	-	< 20	-
TRH C10-C14	20	mg/kg	< 20	-	< 20	-
TRH C15-C28	50	mg/kg	< 50	-	200	-
TRH C29-C36	50	mg/kg	< 50	-	150	-
TRH C10-C36 (Total)	50	mg/kg	< 50	-	350	-
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	-	330	-
TRH >C34-C40	100	mg/kg	< 100	-	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	330	-
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	%	^{Q09} INT	-	122	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	-	< 0.5	-
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	-

Client Sample ID			BH106_0.4-0.5	BH106_2.9-3.0	BH107_0.0-0.1	BH107_2.9-3.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011621	S25-Ja0011622	S25-Ja0011623	S25-Ja0011624
Date Sampled			Jan 09, 2025	Jan 09, 2025	Jan 09, 2025	Jan 09, 2025
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	92	-	142	-
p-Terphenyl-d14 (surr.)	1	%	76	-	112	-
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	-	5.7	-	-
Total Organic Carbon	0.1	%	-	0.1	-	-
Heavy Metals						
Arsenic	2	mg/kg	7.5	-	11	-
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	-
Chromium	5	mg/kg	21	-	21	-
Copper	5	mg/kg	12	-	60	-
Lead	5	mg/kg	15	-	< 5	-
Mercury	0.1	mg/kg	< 0.1	-	< 0.1	-
Nickel	5	mg/kg	< 5	-	180	-
Zinc	5	mg/kg	5.3	-	78	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.5	meq/100g	-	16	-	-
Sample Properties						
% Moisture	1	%	25	17	9.7	14
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	-	4.3	-	4.1
Titrateable Actual Acidity (NLM-3.2)	2	mol H+/t	-	56	-	69
Titrateable Actual Acidity (NLM-3.2)	0.003	% pyrite S	-	0.090	-	0.11
Potential Acidity - Titrateable Peroxide						
pH-OX	0.1	pH Units	-	5.1	-	4.9
Titrateable Peroxide Acidity (s-TPA)	0.02	% pyrite S	-	0.07	-	0.09
Titrateable Peroxide Acidity (a-TPA)	2	mol H+/t	-	42	-	56
Titrateable Sulfidic Acidity (a-TSA)	2	mol H+/t	-	< 2	-	< 2
Titrateable Sulfidic Acidity (s-TSA)	0.02	% pyrite S	-	< 0.02	-	< 0.02
Extractable Sulfur						
Sulfur - KCl Extractable	0.005	% S	-	0.030	-	0.020
Peroxide Extractable Sulfur	0.005	% S	-	0.040	-	0.030
HCl Extractable Sulfur	0.005	% S	-	0.040	-	0.030
Potential Acidity (SPOS)						
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	0.005	% S	-	0.008	-	0.010
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	2	mol H+/t	-	5.1	-	6.1
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (s-SNAS) NLM-4.1 ^{S02}	0.005	% S	-	0.011	-	0.011
Net Acid soluble sulfur (a-SNAS) NLM-4.1	2	mol H+/t	-	7.0	-	7.1
HCl Extractable Sulfur Correction Factor	1	factor	-	2.0	-	2.0

Client Sample ID			BH106_0.4-0.5	BH106_2.9-3.0	BH107_0.0-0.1	BH107_2.9-3.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011621	S25-Ja0011622	S25-Ja0011623	S25-Ja0011624
Date Sampled			Jan 09, 2025	Jan 09, 2025	Jan 09, 2025	Jan 09, 2025
Test/Reference	LOR	Unit				
Extractable Calcium						
Calcium - KCl Extractable	0.005	% Ca	-	< 0.005	-	0.010
Calcium - Peroxide	0.005	% Ca	-	0.010	-	0.010
Calcium - Acid Reacted	0.005	% Ca	-	0.006	-	< 0.005
Calcium - Acid Reacted (s-aCa)	0.005	% S	-	0.005	-	< 0.005
Calcium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	2.8	-	< 0.005
Extractable Magnesium						
Magnesium - KCl Extractable	0.005	% Mg	-	0.10	-	0.090
Magnesium - Peroxide	0.005	% Mg	-	0.11	-	0.10
Magnesium - Acid Reacted	0.005	% Mg	-	< 0.005	-	0.005
Magnesium - Acid Reacted (s-aCa)	0.005	% S	-	< 0.005	-	0.007
Magnesium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	< 0.005	-	4.3
Acid Neutralising Capacity (ANCE)						
Acid Neutralising Capacity - (ANCE)	0.02	% CaCO ₃	-	N/A	-	N/A
Acid Neutralising Capacity - (s-ANCE)	0.02	% S	-	N/A	-	N/A
Acid Neutralising Capacity - (a-ANCE)	10	mol H+/t	-	n/a	-	n/a
Acid Neutralising Capacity (ANCbt)						
ANC Fineness Factor		factor	-	1.5	-	1.5
Net Acidity (Including ANC)						
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	10	mol H+/t	-	68	-	82
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	0.02	% S	-	0.11	-	0.13
SPOCAS - Liming rate - ASSMAC	1	kg CaCO ₃ /t	-	5.0	-	6.0
Extraneous Material						
<2mm Fraction	0.005	g	-	90	-	49
>2mm Fraction	0.005	g	-	< 0.005	-	< 0.005
Analysed Material	0.1	%	-	100	-	100
Extraneous Material	0.1	%	-	< 0.1	-	< 0.1

Client Sample ID			BH108_0.2-0.3	BH108_2.9-3.0	TP101_0.0-0.1	TP102_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011625	S25-Ja0011626	S25-Ja0011627	S25-Ja0011628
Date Sampled			Jan 09, 2025	Jan 09, 2025	Jan 07, 2025	Jan 07, 2025
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	-	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	-	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	-	< 50	< 50
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			BH108_0.2-0.3	BH108_2.9-3.0	TP101_0.0-0.1	TP102_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011625	S25-Ja0011626	S25-Ja0011627	S25-Ja0011628
Date Sampled			Jan 09, 2025	Jan 09, 2025	Jan 07, 2025	Jan 07, 2025
Test/Reference	LOR	Unit				
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	%	85	-	95	117
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
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	%	134	-	116	125
p-Terphenyl-d14 (surr.)	1	%	111	-	88	114
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-HCH	0.05	mg/kg	< 0.05	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-HCH	0.05	mg/kg	< 0.05	-	< 0.05	-
d-HCH	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-HCH (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	-

Client Sample ID			BH108_0.2-0.3	BH108_2.9-3.0	TP101_0.0-0.1	TP102_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011625	S25-Ja0011626	S25-Ja0011627	S25-Ja0011628
Date Sampled			Jan 09, 2025	Jan 09, 2025	Jan 07, 2025	Jan 07, 2025
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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	0.5	mg/kg	< 0.5	-	< 0.5	-
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	-
Dibutylchlorodate (surr.)	1	%	80	-	57	-
Tetrachloro-m-xylene (surr.)	1	%	102	-	93	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Coumaphos	2	mg/kg	< 2	-	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	-	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	-	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	-	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	-	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	-	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	-	< 0.2	-
EPN	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	-	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Monocrotophos	2	mg/kg	< 2	-	< 2	-
Naled	0.2	mg/kg	< 0.2	-	< 0.2	-
Omethoate	2	mg/kg	< 2	-	< 2	-
Phorate	0.2	mg/kg	< 0.2	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	-	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	-	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	-	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	94	-	67	-

Client Sample ID			BH108_0.2-0.3	BH108_2.9-3.0	TP101_0.0-0.1	TP102_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011625	S25-Ja0011626	S25-Ja0011627	S25-Ja0011628
Date Sampled			Jan 09, 2025	Jan 09, 2025	Jan 07, 2025	Jan 07, 2025
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	6.9	-	11	15
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	< 0.4
Chromium	5	mg/kg	20	-	31	39
Copper	5	mg/kg	8.9	-	21	5.3
Lead	5	mg/kg	16	-	65	17
Mercury	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	-	< 5	< 5
Zinc	5	mg/kg	< 5	-	73	5.9
Sample Properties						
% Moisture	1	%	19	2.4	12	7.0
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	-	5.9	-	-
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	-	8.0	-	-
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	-	0.010	-	-
Potential Acidity - Titratable Peroxide						
pH-OX	0.1	pH Units	-	6.3	-	-
Titratable Peroxide Acidity (s-TPA)	0.02	% pyrite S	-	< 0.02	-	-
Titratable Peroxide Acidity (a-TPA)	2	mol H+/t	-	< 2	-	-
Titratable Sulfidic Acidity (a-TSA)	2	mol H+/t	-	< 2	-	-
Titratable Sulfidic Acidity (s-TSA)	0.02	% pyrite S	-	< 0.02	-	-
Extractable Sulfur						
Sulfur - KCl Extractable	0.005	% S	-	0.010	-	-
Peroxide Extractable Sulfur	0.005	% S	-	0.010	-	-
HCl Extractable Sulfur	0.005	% S	-	N/A	-	-
Potential Acidity (SPOS)						
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	0.005	% S	-	< 0.005	-	-
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	2	mol H+/t	-	< 2	-	-
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (s-SNAS) NLM-4.1 ^{S02}	0.005	% S	-	N/A	-	-
Net Acid soluble sulfur (a-SNAS) NLM-4.1	2	mol H+/t	-	N/A	-	-
HCl Extractable Sulfur Correction Factor	1	factor	-	2.0	-	-
Extractable Calcium						
Calcium - KCl Extractable	0.005	% Ca	-	0.020	-	-
Calcium - Peroxide	0.005	% Ca	-	0.030	-	-
Calcium - Acid Reacted	0.005	% Ca	-	< 0.005	-	-
Calcium - Acid Reacted (s-aCa)	0.005	% S	-	< 0.005	-	-
Calcium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	< 0.005	-	-
Extractable Magnesium						
Magnesium - KCl Extractable	0.005	% Mg	-	0.050	-	-
Magnesium - Peroxide	0.005	% Mg	-	0.050	-	-
Magnesium - Acid Reacted	0.005	% Mg	-	< 0.005	-	-
Magnesium - Acid Reacted (s-aCa)	0.005	% S	-	< 0.005	-	-
Magnesium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	< 0.005	-	-
Acid Neutralising Capacity (ANCE)						
Acid Neutralising Capacity - (ANCE)	0.02	% CaCO3	-	N/A	-	-
Acid Neutralising Capacity - (s-ANCE)	0.02	% S	-	N/A	-	-
Acid Neutralising Capacity - (a-ANCE)	10	mol H+/t	-	n/a	-	-
Acid Neutralising Capacity (ANCbt)						
ANC Fineness Factor		factor	-	1.5	-	-

Client Sample ID			BH108_0.2-0.3	BH108_2.9-3.0	TP101_0.0-0.1	TP102_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011625	S25-Ja0011626	S25-Ja0011627	S25-Ja0011628
Date Sampled			Jan 09, 2025	Jan 09, 2025	Jan 07, 2025	Jan 07, 2025
Test/Reference	LOR	Unit				
Net Acidity (Including ANC)						
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	10	mol H ⁺ /t	-	< 10	-	-
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	0.02	% S	-	< 0.02	-	-
SPOCAS - Liming rate - ASSMAC	1	kg CaCO ₃ /t	-	1.0	-	-
Extraneous Material						
<2mm Fraction	0.005	g	-	140	-	-
>2mm Fraction	0.005	g	-	3.9	-	-
Analysed Material	0.1	%	-	97	-	-
Extraneous Material	0.1	%	-	2.7	-	-

Client Sample ID			TP102_1.4-1.5	TP103_0.0-0.1	TP104_0.4-0.5	TP105_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011629	S25-Ja0011630	S25-Ja0011631	S25-Ja0011632
Date Sampled			Jan 07, 2025	Jan 07, 2025	Jan 07, 2025	Jan 07, 2025
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	-	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	-	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	-	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	-	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	-	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{*N01}	50	mg/kg	-	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	-	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	-	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	-	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	106	79	119
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
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

Client Sample ID			TP102_1.4-1.5	TP103_0.0-0.1	TP104_0.4-0.5	TP105_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011629	S25-Ja0011630	S25-Ja0011631	S25-Ja0011632
Date Sampled			Jan 07, 2025	Jan 07, 2025	Jan 07, 2025	Jan 07, 2025
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	-	126	132	124
p-Terphenyl-d14 (surr.)	1	%	-	101	108	117
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-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
d-HCH	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-HCH (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	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
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
Dibutylchloroendate (surr.)	1	%	-	98	85	95
Tetrachloro-m-xylene (surr.)	1	%	-	106	107	108
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	-	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2

Client Sample ID			TP102_1.4-1.5	TP103_0.0-0.1	TP104_0.4-0.5	TP105_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011629	S25-Ja0011630	S25-Ja0011631	S25-Ja0011632
Date Sampled			Jan 07, 2025	Jan 07, 2025	Jan 07, 2025	Jan 07, 2025
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Diazinon	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	-	< 2	< 2	< 2
Naled	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	-	< 2	< 2	< 2
Phorate	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	-	103	97	101
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	110	22	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	5.0	6.7	-	-
Total Organic Carbon	0.1	%	< 0.1	1.7	-	-
Heavy Metals						
Arsenic	2	mg/kg	-	13	13	14
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	-	27	25	33
Copper	5	mg/kg	-	17	21	19
Lead	5	mg/kg	-	27	110	25
Mercury	0.1	mg/kg	-	< 0.1	0.3	< 0.1
Nickel	5	mg/kg	-	6.4	5.1	< 5
Zinc	5	mg/kg	-	26	95	24
Cation Exchange Capacity						
Cation Exchange Capacity	0.5	meq/100g	8.7	13	-	-
Sample Properties						
% Moisture	1	%	19	18	9.6	17

Client Sample ID			TP105_0.4-0.5	TP106_0.2-0.3	TP107_0.0-0.1	TP108_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011633	S25-Ja0011634	S25-Ja0011635	S25-Ja0011636
Date Sampled			Jan 07, 2025	Jan 07, 2025	Jan 07, 2025	Jan 07, 2025
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{*N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	74	81	73	81
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	115	127	117	126
p-Terphenyl-d14 (surr.)	1	%	110	114	80	102

Client Sample ID			TP105_0.4-0.5	TP106_0.2-0.3	TP107_0.0-0.1	TP108_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011633	S25-Ja0011634	S25-Ja0011635	S25-Ja0011636
Date Sampled			Jan 07, 2025	Jan 07, 2025	Jan 07, 2025	Jan 07, 2025
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-HCH	0.05	mg/kg	-	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
b-HCH	0.05	mg/kg	-	-	< 0.05	< 0.05
d-HCH	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-HCH (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	0.5	mg/kg	-	-	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	-	-	53	93
Tetrachloro-m-xylene (surr.)	1	%	-	-	94	102
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	-	< 0.2	< 0.2
Bolstar	0.2	mg/kg	-	-	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	-	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	-	-	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	-	< 0.2	< 0.2
Coumaphos	2	mg/kg	-	-	< 2	< 2
Demeton-S	0.2	mg/kg	-	-	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	-	-	< 0.2	< 0.2
Diazinon	0.2	mg/kg	-	-	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	-	-	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	-	-	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	-	-	< 0.2	< 0.2
EPN	0.2	mg/kg	-	-	< 0.2	< 0.2
Ethion	0.2	mg/kg	-	-	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	-	-	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	-	-	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	-	-	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	-	-	< 0.2	< 0.2
Fenthion	0.2	mg/kg	-	-	< 0.2	< 0.2
Malathion	0.2	mg/kg	-	-	< 0.2	< 0.2
Merphos	0.2	mg/kg	-	-	< 0.2	< 0.2

Client Sample ID			TP105_0.4-0.5	TP106_0.2-0.3	TP107_0.0-0.1	TP108_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011633	S25-Ja0011634	S25-Ja0011635	S25-Ja0011636
Date Sampled			Jan 07, 2025	Jan 07, 2025	Jan 07, 2025	Jan 07, 2025
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	-	-	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	-	-	< 0.2	< 0.2
Monocrotophos	2	mg/kg	-	-	< 2	< 2
Naled	0.2	mg/kg	-	-	< 0.2	< 0.2
Omethoate	2	mg/kg	-	-	< 2	< 2
Phorate	0.2	mg/kg	-	-	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	-	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	-	-	< 0.2	< 0.2
Ronnel	0.2	mg/kg	-	-	< 0.2	< 0.2
Terbufos	0.2	mg/kg	-	-	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	-	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	-	-	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	-	-	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	-	-	59	97
Heavy Metals						
Arsenic	2	mg/kg	19	14	8.0	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	1.0	< 0.4
Chromium	5	mg/kg	39	14	22	24
Copper	5	mg/kg	50	100	110	7.2
Lead	5	mg/kg	29	49	110	22
Mercury	0.1	mg/kg	< 0.1	0.1	0.3	< 0.1
Nickel	5	mg/kg	5.6	7.0	18	< 5
Zinc	5	mg/kg	41	59	380	20
Sample Properties						
% Moisture	1	%	13	7.4	8.0	10

Client Sample ID			TP108_1.4-1.5	TP109_0.4-0.5	TP109_1.4-1.5	QC01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011637	S25-Ja0011638	S25-Ja0011639	S25-Ja0011665
Date Sampled			Jan 07, 2025	Jan 07, 2025	Jan 07, 2025	Jan 09, 2025
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	-	< 20
TRH C10-C14	20	mg/kg	-	< 20	-	< 20
TRH C15-C28	50	mg/kg	-	< 50	-	< 50
TRH C29-C36	50	mg/kg	-	< 50	-	< 50
TRH C10-C36 (Total)	50	mg/kg	-	< 50	-	< 50
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			TP108_1.4-1.5	TP109_0.4-0.5	TP109_1.4-1.5	QC01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011637	S25-Ja0011638	S25-Ja0011639	S25-Ja0011665
Date Sampled			Jan 07, 2025	Jan 07, 2025	Jan 07, 2025	Jan 09, 2025
Test/Reference	LOR	Unit				
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	%	-	60	-	86
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	-	< 0.5	-	< 0.5
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	%	-	114	-	110
p-Terphenyl-d14 (surr.)	1	%	-	101	-	89
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-HCH	0.05	mg/kg	-	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
b-HCH	0.05	mg/kg	-	< 0.05	-	< 0.05
d-HCH	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-HCH (Lindane)	0.05	mg/kg	-	< 0.05	-	< 0.05

Client Sample ID			TP108_1.4-1.5	TP109_0.4-0.5	TP109_1.4-1.5	QC01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011637	S25-Ja0011638	S25-Ja0011639	S25-Ja0011665
Date Sampled			Jan 07, 2025	Jan 07, 2025	Jan 07, 2025	Jan 09, 2025
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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	0.5	mg/kg	-	< 0.5	-	< 0.5
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
Dibutylchlorodate (surr.)	1	%	-	87	-	52
Tetrachloro-m-xylene (surr.)	1	%	-	102	-	86
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Bolstar	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Coumaphos	2	mg/kg	-	< 2	-	< 2
Demeton-S	0.2	mg/kg	-	< 0.2	-	< 0.2
Demeton-O	0.2	mg/kg	-	< 0.2	-	< 0.2
Diazinon	0.2	mg/kg	-	< 0.2	-	< 0.2
Dichlorvos	0.2	mg/kg	-	< 0.2	-	< 0.2
Dimethoate	0.2	mg/kg	-	< 0.2	-	< 0.2
Disulfoton	0.2	mg/kg	-	< 0.2	-	< 0.2
EPN	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethion	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethoprop	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethyl parathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fenitrothion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fensulfothion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fenthion	0.2	mg/kg	-	< 0.2	-	< 0.2
Malathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Merphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Methyl parathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Mevinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Monocrotophos	2	mg/kg	-	< 2	-	< 2
Naled	0.2	mg/kg	-	< 0.2	-	< 0.2
Omethoate	2	mg/kg	-	< 2	-	< 2
Phorate	0.2	mg/kg	-	< 0.2	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Pyrazophos	0.2	mg/kg	-	< 0.2	-	< 0.2
Ronnel	0.2	mg/kg	-	< 0.2	-	< 0.2
Terbufos	0.2	mg/kg	-	< 0.2	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Tokuthion	0.2	mg/kg	-	< 0.2	-	< 0.2
Trichloronate	0.2	mg/kg	-	< 0.2	-	< 0.2
Triphenylphosphate (surr.)	1	%	-	86	-	66

Client Sample ID			TP108_1.4-1.5	TP109_0.4-0.5	TP109_1.4-1.5	QC01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011637	S25-Ja0011638	S25-Ja0011639	S25-Ja0011665
Date Sampled			Jan 07, 2025	Jan 07, 2025	Jan 07, 2025	Jan 09, 2025
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	-	12	-	12
Cadmium	0.4	mg/kg	-	< 0.4	-	< 0.4
Chromium	5	mg/kg	-	25	-	28
Copper	5	mg/kg	-	12	-	16
Lead	5	mg/kg	-	23	-	27
Mercury	0.1	mg/kg	-	< 0.1	-	< 0.1
Nickel	5	mg/kg	-	< 5	-	8.3
Zinc	5	mg/kg	-	42	-	26
Sample Properties						
% Moisture	1	%	17	17	16	17
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	4.3	-	4.3	-
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	83	-	53	-
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	0.13	-	0.080	-
Potential Acidity - Titratable Peroxide						
pH-OX	0.1	pH Units	4.4	-	5.0	-
Titratable Peroxide Acidity (s-TPA)	0.02	% pyrite S	0.12	-	0.06	-
Titratable Peroxide Acidity (a-TPA)	2	mol H+/t	76	-	40	-
Titratable Sulfidic Acidity (a-TSA)	2	mol H+/t	< 2	-	< 2	-
Titratable Sulfidic Acidity (s-TSA)	0.02	% pyrite S	< 0.02	-	< 0.02	-
Extractable Sulfur						
Sulfur - KCl Extractable	0.005	% S	0.020	-	0.020	-
Peroxide Extractable Sulfur	0.005	% S	0.030	-	0.030	-
HCl Extractable Sulfur	0.005	% S	0.020	-	0.030	-
Potential Acidity (SPOS)						
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	0.005	% S	0.006	-	0.008	-
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	2	mol H+/t	4.0	-	5.1	-
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (s-SNAS) NLM-4.1 ^{S02}	0.005	% S	0.005	-	0.009	-
Net Acid soluble sulfur (a-SNAS) NLM-4.1	2	mol H+/t	3.4	-	5.5	-
HCl Extractable Sulfur Correction Factor	1	factor	2.0	-	2.0	-
Extractable Calcium						
Calcium - KCl Extractable	0.005	% Ca	0.010	-	< 0.005	-
Calcium - Peroxide	0.005	% Ca	0.010	-	< 0.005	-
Calcium - Acid Reacted	0.005	% Ca	< 0.005	-	< 0.005	-
Calcium - Acid Reacted (s-aCa)	0.005	% S	< 0.005	-	< 0.005	-
Calcium - Acid Reacted (a-aCa)	0.005	mol H+/t	< 0.005	-	< 0.005	-
Extractable Magnesium						
Magnesium - KCl Extractable	0.005	% Mg	0.080	-	0.10	-
Magnesium - Peroxide	0.005	% Mg	0.090	-	0.11	-
Magnesium - Acid Reacted	0.005	% Mg	0.009	-	0.014	-
Magnesium - Acid Reacted (s-aCa)	0.005	% S	0.011	-	0.018	-
Magnesium - Acid Reacted (a-aCa)	0.005	mol H+/t	7.1	-	11	-
Acid Neutralising Capacity (ANCE)						
Acid Neutralising Capacity - (ANCE)	0.02	% CaCO3	N/A	-	N/A	-
Acid Neutralising Capacity - (s-ANCE)	0.02	% S	N/A	-	N/A	-
Acid Neutralising Capacity - (a-ANCE)	10	mol H+/t	n/a	-	n/a	-
Acid Neutralising Capacity (ANCbt)						
ANC Fineness Factor		factor	1.5	-	1.5	-

Client Sample ID			TP108_1.4-1.5	TP109_0.4-0.5	TP109_1.4-1.5	QC01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Ja0011637	S25-Ja0011638	S25-Ja0011639	S25-Ja0011665
Date Sampled			Jan 07, 2025	Jan 07, 2025	Jan 07, 2025	Jan 09, 2025
Test/Reference	LOR	Unit				
Net Acidity (Including ANC)						
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	10	mol H+/t	90	-	63	-
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	0.02	% S	0.14	-	0.10	-
SPOCAS - Liming rate - ASSMAC	1	kg CaCO3/t	7.0	-	5.0	-
Extraneous Material						
<2mm Fraction	0.005	g	49	-	59	-
>2mm Fraction	0.005	g	< 0.005	-	< 0.005	-
Analysed Material	0.1	%	100	-	100	-
Extraneous Material	0.1	%	< 0.1	-	< 0.1	-

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jan 13, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 13, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jan 13, 2025	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Eurofins Suite B1			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 13, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Jan 13, 2025	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
pH (1:5 Aqueous extract at 25 °C as rec.)	Sydney	Jan 13, 2025	7 Days
- Method: LTM-GEN-7090 pH by ISE			
Total Organic Carbon	Melbourne	Jan 15, 2025	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Metals M8	Sydney	Jan 13, 2025	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Organochlorine Pesticides	Sydney	Jan 13, 2025	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Jan 13, 2025	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	Melbourne	Jan 15, 2025	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Jan 15, 2025	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
% Moisture	Sydney	Jan 13, 2025	14 Days
- Method: LTM-GEN-7080 Moisture			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Jan 14, 2025	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Jan 14, 2025	6 Week
- Method: LTM-GEN-7050/7070			



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Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079
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Company Name: JBS & G Australia (NSW) P/L
Address: Level 8, 179 Elizabeth St
Sydney
NSW 2000

Project Name: Liverpool
Project ID: 68150

Order No.: 68150
Report #: 1176585
Phone: 02 8245 0300
Fax:

Received: Jan 10, 2025 6:54 PM
Due: Jan 20, 2025
Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence / Presence	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B14: OCP/OPP	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X							X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
External Laboratory																			
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID														
1	BH101 0.2-0.3	Jan 09, 2025		Soil	S25-Ja0011613				X	X	X	X	X		X	X	X		
2	BH102 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011614						X	X			X		X		
3	BH103 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011615						X	X	X		X		X		
4	BH104 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011616						X	X			X		X		
5	BH105 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011617						X	X			X		X		
6	BH105 0.2-0.3	Jan 08, 2025		Soil	S25-Ja0011618						X	X			X		X		
7	BH105 2.9-3.0	Jan 08, 2025		Soil	S25-Ja0011619									X	X				
8	BH106 0.2-0.3	Jan 09, 2025		Soil	S25-Ja0011620						X	X			X		X		
9	BH106 0.4-0.5	Jan 09, 2025		Soil	S25-Ja0011621						X	X			X		X		
10	BH106 2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011622				X	X				X	X	X			
11	BH107 0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011623						X	X			X		X		
12	BH107 2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011624									X	X				



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Company Name: JBS & G Australia (NSW) P/L
Address: Level 8, 179 Elizabeth St
Sydney
NSW 2000

Project Name: Liverpool
Project ID: 68150

Order No.: 68150
Report #: 1176585
Phone: 02 8245 0300
Fax:

Received: Jan 10, 2025 6:54 PM
Due: Jan 20, 2025
Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence / Presence	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B14: OCP/OPP	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
13	BH108_0.2-0.3	Jan 09, 2025		Soil	S25-Ja0011625						X	X	X		X		X		
14	BH108_2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011626									X	X				
15	TP101_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011627						X	X	X		X		X		
16	TP102_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011628						X	X			X		X		
17	TP102_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011629				X	X					X	X			
18	TP103_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011630				X	X	X	X	X		X	X	X		
19	TP104_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011631						X	X	X		X		X		
20	TP105_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011632						X	X	X		X		X		
21	TP105_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011633						X	X			X		X		
22	TP106_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011634						X	X			X		X		
23	TP107_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011635						X	X	X		X		X		
24	TP108_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011636						X	X	X		X		X		
25	TP108_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011637									X	X				
26	TP109_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011638						X	X	X		X		X		
27	TP109_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011639									X	X				



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NATA# 1261
Site# 25403

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NATA# 1261
Site# 18217

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NATA# 1261
Site# 25466

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Site# 20794 & 2780

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NATA# 1261
Site# 25079

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NATA# 2377
Site# 2370 & 2554

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IANZ# 1308

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 8, 179 Elizabeth St
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NSW 2000

Project Name: Liverpool
Project ID: 68150

Order No.: 68150
Report #: 1176585
Phone: 02 8245 0300
Fax:

Received: Jan 10, 2025 6:54 PM
Due: Jan 20, 2025
Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA # 1261 Site # 1254										X							X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
28	TP101_0.0-0.3	Jan 07, 2025		Soil	S25-Ja0011640	X													
29	TP101_0.3-0.5	Jan 07, 2025		Soil	S25-Ja0011641	X													
30	TP102_0.2-0.4	Jan 07, 2025		Soil	S25-Ja0011642	X													
31	TP103_0.0-0.3	Jan 07, 2025		Soil	S25-Ja0011643	X													
32	TP104_0.0-0.3	Jan 07, 2025		Soil	S25-Ja0011644	X													
33	TP105_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011645	X													
34	TP105_0.1-0.6	Jan 07, 2025		Soil	S25-Ja0011646	X													
35	TP106_0.1-0.5	Jan 07, 2025		Soil	S25-Ja0011647	X													
36	TP107_0.0-0.2	Jan 07, 2025		Soil	S25-Ja0011648	X													
37	TP107_0.2-0.4	Jan 07, 2025		Soil	S25-Ja0011649	X													
38	TP108_0.1-1.0	Jan 07, 2025		Soil	S25-Ja0011650	X													
39	TP109_0.2-0.5	Jan 07, 2025		Soil	S25-Ja0011651	X													
40	BH101_0.0-0.3	Jan 09, 2025		Soil	S25-Ja0011652	X													
41	BH102_0.0-0.3	Jan 08, 2025		Soil	S25-Ja0011653	X													
42	BH103_0.1-0.4	Jan 08, 2025		Soil	S25-Ja0011654	X													



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Melbourne Laboratory - NATA # 1261 Site # 1254										X							X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
43	BH104_0.0-0.4	Jan 08, 2025		Soil	S25-Ja0011655	X													
44	BH105_0.2-0.4	Jan 08, 2025		Soil	S25-Ja0011656	X													
45	BH106_0.0-0.4	Jan 09, 2025		Soil	S25-Ja0011657	X													
46	BH107_0.1-0.5	Jan 09, 2025		Soil	S25-Ja0011658	X													
47	BH108_0.0-0.3	Jan 09, 2025		Soil	S25-Ja0011659	X													
48	SS01	Jan 09, 2025		Soil	S25-Ja0011660	X													
49	SS02	Jan 09, 2025		Soil	S25-Ja0011661	X													
50	SS03	Jan 09, 2025		Soil	S25-Ja0011662	X													
51	SS04	Jan 09, 2025		Soil	S25-Ja0011663	X													
52	SS05	Jan 09, 2025		Soil	S25-Ja0011664	X													
53	QC01	Jan 09, 2025		Soil	S25-Ja0011665	X					X	X	X		X		X		
54	QC02	Jan 09, 2025		Soil	S25-Ja0011666	X													
55	TP105_FRAG 01	Jan 09, 2025		Building Materials	S25-Ja0011667		X												
56	TP105_FRAG	Jan 09, 2025		Building	S25-Ja0011668		X												



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Melbourne Laboratory - NATA # 1261 Site # 1254										X							X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
	02			Materials															
57	TP105_FRAG 03	Jan 09, 2025		Building Materials	S25-Ja0011669		X												
58	TP105_FRAG 04	Jan 09, 2025		Building Materials	S25-Ja0011670		X												
59	TP107_FRAG 01	Jan 09, 2025		Building Materials	S25-Ja0011671		X												
60	SS-01_FRAG01	Jan 09, 2025		Building Materials	S25-Ja0011672		X												
61	TS	Jan 07, 2025		Trip Spike (liquid)	S25-Ja0011673														X
62	TB	Jan 07, 2025		Trip Blank (liquid)	S25-Ja0011674													X	
63	BH101_0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011675			X											
64	BH101_0.4-0.5	Jan 09, 2025		Soil	S25-Ja0011676			X											
65	BH101_0.9-1.0	Jan 09, 2025		Soil	S25-Ja0011677			X											
66	BH101_1.4-1.5	Jan 09, 2025		Soil	S25-Ja0011678			X											



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Perth
46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554

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Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
67	BH101_1.9-2.0	Jan 09, 2025		Soil	S25-Ja0011679			X											
68	BH101_2.4-2.5	Jan 09, 2025		Soil	S25-Ja0011680			X											
69	BH101_2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011681			X											
70	BH102_0.2-0.3	Jan 08, 2025		Soil	S25-Ja0011682			X											
71	BH102_0.4-0.5	Jan 08, 2025		Soil	S25-Ja0011683			X											
72	BH102_0.9-1.0	Jan 08, 2025		Soil	S25-Ja0011684			X											
73	BH102_1.4-1.5	Jan 08, 2025		Soil	S25-Ja0011685			X											
74	BH102_1.9-2.0	Jan 08, 2025		Soil	S25-Ja0011686			X											
75	BH102_2.4-2.5	Jan 08, 2025		Soil	S25-Ja0011687			X											
76	BH102_2.9-3.0	Jan 08, 2025		Soil	S25-Ja0011688			X											
77	BH103_0.2-0.3	Jan 08, 2025		Soil	S25-Ja0011689			X											
78	BH103_0.4-0.5	Jan 08, 2025		Soil	S25-Ja0011690			X											
79	BH103_0.9-1.0	Jan 08, 2025		Soil	S25-Ja0011691			X											
80	BH103_1.4-1.5	Jan 08, 2025		Soil	S25-Ja0011692			X											
81	BH103_1.9-2.0	Jan 08, 2025		Soil	S25-Ja0011693			X											

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554	Auckland 35 O'Rourke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
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Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
82	BH103_2.4-2.5	Jan 08, 2025		Soil	S25-Ja0011694			X											
83	BH103_2.9-3.0	Jan 08, 2025		Soil	S25-Ja0011695			X											
84	BH104_0.2-0.3	Jan 08, 2025		Soil	S25-Ja0011696			X											
85	BH104_0.4-0.5	Jan 08, 2025		Soil	S25-Ja0011697			X											
86	BH104_0.9-1.0	Jan 08, 2025		Soil	S25-Ja0011698			X											
87	BH104_1.4-1.5	Jan 08, 2025		Soil	S25-Ja0011699			X											
88	BH104_1.9-2.0	Jan 08, 2025		Soil	S25-Ja0011700			X											
89	BH104_2.4-2.5	Jan 08, 2025		Soil	S25-Ja0011701			X											
90	BH104_2.9-3.0	Jan 08, 2025		Soil	S25-Ja0011702			X											
91	BH105_0.4-0.5	Jan 08, 2025		Soil	S25-Ja0011703			X											
92	BH105_0.9-1.0	Jan 08, 2025		Soil	S25-Ja0011704			X											
93	BH105_1.4-1.5	Jan 08, 2025		Soil	S25-Ja0011705			X											
94	BH105_1.9-2.0	Jan 08, 2025		Soil	S25-Ja0011706			X											
95	BH105_2.4-2.5	Jan 08, 2025		Soil	S25-Ja0011707			X											
96	BH106_0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011708			X											



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Melbourne Laboratory - NATA # 1261 Site # 1254										X							X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
97	BH106_0.9-1.0	Jan 09, 2025		Soil	S25-Ja0011709			X											
98	BH106_1.4-1.5	Jan 09, 2025		Soil	S25-Ja0011710			X											
99	BH106_1.9-2.0	Jan 09, 2025		Soil	S25-Ja0011711			X											
100	BH106_2.4-2.5	Jan 09, 2025		Soil	S25-Ja0011712			X											
101	BH107_0.2-0.3	Jan 09, 2025		Soil	S25-Ja0011713			X											
102	BH107_0.4-0.5	Jan 09, 2025		Soil	S25-Ja0011714			X											
103	BH107_0.9-1.0	Jan 09, 2025		Soil	S25-Ja0011715			X											
104	BH107_1.4-1.5	Jan 09, 2025		Soil	S25-Ja0011716			X											
105	BH107_1.9-2.0	Jan 09, 2025		Soil	S25-Ja0011717			X											
106	BH107_2.4-2.5	Jan 09, 2025		Soil	S25-Ja0011718			X											
107	BH108_0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011719			X											
108	BH108_0.4-0.5	Jan 09, 2025		Soil	S25-Ja0011720			X											
109	BH108_0.9-1.0	Jan 09, 2025		Soil	S25-Ja0011721			X											
110	BH108_1.4-1.5	Jan 09, 2025		Soil	S25-Ja0011722			X											
111	BH108_1.9-2.0	Jan 09, 2025		Soil	S25-Ja0011723			X											



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Sample Detail						Asbestos - WA guidelines	Asbestos Absence / Presence	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B14: OCP/OPP	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
112	BH108_2.4-2.5	Jan 09, 2025		Soil	S25-Ja0011724			X											
113	TP101_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011725			X											
114	TP101_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011726			X											
115	TP101_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011727			X											
116	TP102_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011728			X											
117	TP102_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011729			X											
118	TP102_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011730			X											
119	TP103_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011731			X											
120	TP103_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011732			X											
121	TP104_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011733			X											
122	TP104_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011734			X											
123	TP104_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011735			X											
124	TP105_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011736			X											
125	TP105_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011737			X											
126	TP105_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011738			X											



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Perth
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Project Name: Liverpool
Project ID: 68150

Order No.: 68150
Report #: 1176585
Phone: 02 8245 0300
Fax:

Received: Jan 10, 2025 6:54 PM
Due: Jan 20, 2025
Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence / Presence	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B14: OCP/OPP	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
127	TP106_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011739			X											
128	TP106_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011740			X											
129	TP106_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011741			X											
130	TP107_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011742			X											
131	TP107_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011743			X											
132	TP107_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011744			X											
133	TP107_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011745			X											
134	TP108_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011746			X											
135	TP108_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011747			X											
136	TP108_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011748			X											
137	TP109_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011749			X											
138	TP109_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011750			X											
139	TP109_0.7-0.8	Jan 07, 2025		Soil	S25-Ja0011751			X											
140	TP102_0.0-0.2	Jan 07, 2025		Soil	S25-Ja0011752			X											
141	TP102_0.4-0.7	Jan 07, 2025		Soil	S25-Ja0011753			X											



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Sample Detail						Asbestos - WA guidelines	Asbestos Absence / Presence	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B14: OCP/OPP	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
142	TP104_0.3-0.7	Jan 07, 2025		Soil	S25-Ja0011754			X											
143	TP106_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011755			X											
144	TP107_0.4-0.6	Jan 07, 2025		Soil	S25-Ja0011756			X											
145	TP108_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011757			X											
146	TP109_0.0-0.2	Jan 07, 2025		Soil	S25-Ja0011758			X											
147	TP109_0.5-0.8	Jan 07, 2025		Soil	S25-Ja0011759			X											
148	BH103_0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011760			X											
149	BH105_0.0-0.2	Jan 08, 2025		Soil	S25-Ja0011761			X											
150	BH107_0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011762			X											
151	TP107-1.4-1.5	Jan 09, 2025		Soil	S25-Ja0012114			X											
Test Counts						27	6	89	4	4	21	21	11	6	28	4	21	1	1

Internal Quality Control Review and Glossary

General

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

Holding Times

Please refer to the '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 before sample receipt deadlines as stated on the SRA.

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

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

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

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ppm: parts per million
µg/L: micrograms per litre	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	Colour: Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - 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.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

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%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as 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 are not data from your samples.
3. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	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-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	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-HCH (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	< 0.5			0.5	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							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	uS/cm	< 10			10	Pass	
Total Organic Carbon	%	< 0.1			0.1	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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							
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-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (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	< 0.5			0.5	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	86			70-130	Pass	
TRH C10-C14	%	85			70-130	Pass	
TRH C6-C10	%	83			70-130	Pass	
TRH >C10-C16	%	87			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	98			70-130	Pass	
Toluene	%	97			70-130	Pass	
Ethylbenzene	%	92			70-130	Pass	
m&p-Xylenes	%	88			70-130	Pass	
o-Xylene	%	86			70-130	Pass	
Xylenes - Total*	%	87			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	81			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	81			70-130	Pass	
Acenaphthylene	%	75			70-130	Pass	
Anthracene	%	80			70-130	Pass	
Benz(a)anthracene	%	71			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	%	70			70-130	Pass	
Benzo(b&j)fluoranthene	%	83			70-130	Pass	
Benzo(g,h,i)perylene	%	71			70-130	Pass	
Dibenz(a,h)anthracene	%	73			70-130	Pass	
Fluoranthene	%	81			70-130	Pass	
Fluorene	%	75			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	73			70-130	Pass	
Naphthalene	%	80			70-130	Pass	
Phenanthrene	%	80			70-130	Pass	
Pyrene	%	79			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	70			70-130	Pass	
4,4'-DDE	%	72			70-130	Pass	
4,4'-DDT	%	72			70-130	Pass	
a-HCH	%	74			70-130	Pass	
Aldrin	%	71			70-130	Pass	
Endosulfan I	%	75			70-130	Pass	
g-HCH (Lindane)	%	74			70-130	Pass	
Heptachlor	%	72			70-130	Pass	
Hexachlorobenzene	%	72			70-130	Pass	
Methoxychlor	%	76			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	87			70-130	Pass	
Dimethoate	%	83			70-130	Pass	
Ethion	%	92			70-130	Pass	
Fenitrothion	%	72			70-130	Pass	
Methyl parathion	%	79			70-130	Pass	
Mevinphos	%	79			70-130	Pass	
LCS - % Recovery							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	%	95			70-130	Pass	
Total Organic Carbon	%	85			70-130	Pass	
LCS - % Recovery							
Actual Acidity (NLM-3.2)							
pH-KCL (NLM-3.1)	%	98			80-120	Pass	
Titrateable Actual Acidity (NLM-3.2)	%	94			80-120	Pass	
LCS - % Recovery							
Extractable Sulfur							
HCl Extractable Sulfur	%	111			80-120	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	97			80-120	Pass	
Cadmium	%	104			80-120	Pass	
Chromium	%	104			80-120	Pass	
Copper	%	104			80-120	Pass	
Lead	%	106			80-120	Pass	
Mercury	%	105			80-120	Pass	
Nickel	%	104			80-120	Pass	
Zinc	%	104			80-120	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	100			70-130	Pass	
Acenaphthylene	%	98			70-130	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Anthracene				%	95			70-130	Pass	
Benz(a)anthracene				%	89			70-130	Pass	
Benzo(a)pyrene				%	97			70-130	Pass	
Benzo(b&j)fluoranthene				%	94			70-130	Pass	
Benzo(g,h,i)perylene				%	95			70-130	Pass	
Benzo(k)fluoranthene				%	98			70-130	Pass	
Chrysene				%	102			70-130	Pass	
Dibenz(a,h)anthracene				%	98			70-130	Pass	
Fluoranthene				%	99			70-130	Pass	
Fluorene				%	94			70-130	Pass	
Indeno(1,2,3-cd)pyrene				%	99			70-130	Pass	
Naphthalene				%	100			70-130	Pass	
Phenanthrene				%	94			70-130	Pass	
Pyrene				%	106			70-130	Pass	
LCS - % Recovery										
Organochlorine Pesticides										
Chlordanes - Total				%	95			70-130	Pass	
4,4'-DDD				%	88			70-130	Pass	
4,4'-DDE				%	101			70-130	Pass	
4,4'-DDT				%	89			70-130	Pass	
a-HCH				%	96			70-130	Pass	
Aldrin				%	93			70-130	Pass	
b-HCH				%	90			70-130	Pass	
d-HCH				%	97			70-130	Pass	
Dieldrin				%	97			70-130	Pass	
Endosulfan I				%	102			70-130	Pass	
Endosulfan II				%	99			70-130	Pass	
Endosulfan sulphate				%	80			70-130	Pass	
Endrin				%	76			70-130	Pass	
Endrin aldehyde				%	84			70-130	Pass	
Endrin ketone				%	74			70-130	Pass	
g-HCH (Lindane)				%	101			70-130	Pass	
Heptachlor				%	90			70-130	Pass	
Heptachlor epoxide				%	90			70-130	Pass	
Hexachlorobenzene				%	95			70-130	Pass	
Methoxychlor				%	97			70-130	Pass	
LCS - % Recovery										
Organophosphorus Pesticides										
Diazinon				%	105			70-130	Pass	
Ethion				%	120			70-130	Pass	
Fenitrothion				%	90			70-130	Pass	
Methyl parathion				%	89			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Total Recoverable Hydrocarbons					Result 1					
TRH C10-C14	S25-Ja0000850	NCP	%	72				70-130	Pass	
TRH >C10-C16	S25-Ja0000850	NCP	%	73				70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					Result 1					
Naphthalene	S25-Ja0012272	NCP	%	118				70-130	Pass	
Spike - % Recovery										
Organochlorine Pesticides					Result 1					
Endrin	S25-Ja0022800	NCP	%	70				70-130	Pass	
Spike - % Recovery										

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S25-Ja0011615	CP	%	95			70-130	Pass	
Acenaphthylene	S25-Ja0011615	CP	%	88			70-130	Pass	
Anthracene	S25-Ja0011615	CP	%	92			70-130	Pass	
Benz(a)anthracene	S25-Ja0011615	CP	%	80			70-130	Pass	
Benzo(b&j)fluoranthene	S25-Ja0011615	CP	%	86			70-130	Pass	
Benzo(g,h,i)perylene	S25-Ja0011615	CP	%	80			70-130	Pass	
Benzo(k)fluoranthene	S25-Ja0011615	CP	%	89			70-130	Pass	
Chrysene	S25-Ja0011615	CP	%	88			70-130	Pass	
Dibenz(a,h)anthracene	S25-Ja0011615	CP	%	89			70-130	Pass	
Fluoranthene	S25-Ja0011615	CP	%	85			70-130	Pass	
Fluorene	S25-Ja0011615	CP	%	90			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S25-Ja0011615	CP	%	93			70-130	Pass	
Naphthalene	S25-Ja0011615	CP	%	99			70-130	Pass	
Phenanthrene	S25-Ja0011615	CP	%	82			70-130	Pass	
Pyrene	S25-Ja0011615	CP	%	90			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S25-Ja0011617	CP	%	111			75-125	Pass	
Cadmium	S25-Ja0011617	CP	%	100			75-125	Pass	
Chromium	S25-Ja0011617	CP	%	112			75-125	Pass	
Copper	S25-Ja0011617	CP	%	103			75-125	Pass	
Lead	S25-Ja0011617	CP	%	93			75-125	Pass	
Mercury	S25-Ja0011617	CP	%	96			75-125	Pass	
Nickel	S25-Ja0011617	CP	%	108			75-125	Pass	
Zinc	S25-Ja0011617	CP	%	100			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S25-Ja0011632	CP	%	93			75-125	Pass	
Cadmium	S25-Ja0011632	CP	%	100			75-125	Pass	
Chromium	S25-Ja0011632	CP	%	92			75-125	Pass	
Copper	S25-Ja0011632	CP	%	88			75-125	Pass	
Lead	S25-Ja0011632	CP	%	89			75-125	Pass	
Mercury	S25-Ja0011632	CP	%	105			75-125	Pass	
Nickel	S25-Ja0011632	CP	%	102			75-125	Pass	
Zinc	S25-Ja0011632	CP	%	83			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S25-Ja0011638	CP	%	79			70-130	Pass	
TRH C6-C10	S25-Ja0011638	CP	%	76			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S25-Ja0011638	CP	%	76			70-130	Pass	
Toluene	S25-Ja0011638	CP	%	81			70-130	Pass	
Ethylbenzene	S25-Ja0011638	CP	%	77			70-130	Pass	
m&p-Xylenes	S25-Ja0011638	CP	%	78			70-130	Pass	
o-Xylene	S25-Ja0011638	CP	%	85			70-130	Pass	
Xylenes - Total*	S25-Ja0011638	CP	%	80			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S25-Ja0011665	CP	%	76			70-130	Pass	
Acenaphthylene	S25-Ja0011665	CP	%	73			70-130	Pass	
Anthracene	S25-Ja0011665	CP	%	74			70-130	Pass	
Chrysene	S25-Ja0011665	CP	%	70			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluoranthene	S25-Ja0011665	CP	%	70			70-130	Pass	
Fluorene	S25-Ja0011665	CP	%	72			70-130	Pass	
Naphthalene	S25-Ja0011665	CP	%	77			70-130	Pass	
Phenanthrene	S25-Ja0011665	CP	%	77			70-130	Pass	
Pyrene	S25-Ja0011665	CP	%	73			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S25-Ja0011665	CP	%	76			70-130	Pass	
4,4'-DDE	S25-Ja0011665	CP	%	78			70-130	Pass	
a-HCH	S25-Ja0011665	CP	%	76			70-130	Pass	
Aldrin	S25-Ja0011665	CP	%	75			70-130	Pass	
d-HCH	S25-Ja0011665	CP	%	82			70-130	Pass	
Dieldrin	S25-Ja0011665	CP	%	82			70-130	Pass	
Endosulfan I	S25-Ja0011665	CP	%	83			70-130	Pass	
Endosulfan II	S25-Ja0011665	CP	%	84			70-130	Pass	
g-HCH (Lindane)	S25-Ja0011665	CP	%	81			70-130	Pass	
Heptachlor epoxide	S25-Ja0011665	CP	%	72			70-130	Pass	
Hexachlorobenzene	S25-Ja0011665	CP	%	75			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S25-Ja0011665	CP	%	74			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S25-Ja0012560	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10	S25-Ja0012560	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	M25-Ja0016654	NCP	uS/cm	100	110	2.6	30%	Pass	
pH (1:5 Aqueous extract at 25 °C as rec.)	S25-Ja0012874	NCP	pH Units	7.0	7.1	pass	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Cation Exchange Capacity	S25-Ja0008223	NCP	meq/100g	5.2	5.2	<1	30%	Pass	
Duplicate									
Actual Acidity (NLM-3.2)				Result 1	Result 2	RPD			
pH-KCL (NLM-3.1)	S25-Ja0011619	CP	pH Units	5.0	5.0	<1	20%	Pass	
Titratable Actual Acidity (NLM-3.2)	S25-Ja0011619	CP	mol H+/t	21	20	3.0	20%	Pass	
Titratable Actual Acidity (NLM-3.2)	S25-Ja0011619	CP	% pyrite S	0.030	0.030	3.0	30%	Pass	
Duplicate									
Potential Acidity - Titratable Peroxide				Result 1	Result 2	RPD			
pH-OX	S25-Ja0011619	CP	pH Units	5.4	5.4	<1	20%	Pass	
Titratable Peroxide Acidity (s-TPA)	S25-Ja0011619	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Titratable Peroxide Acidity (a-TPA)	S25-Ja0011619	CP	mol H+/t	< 2	< 2	<1	20%	Pass	
Titratable Sulfidic Acidity (a-TSA)	S25-Ja0011619	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
Titratable Sulfidic Acidity (s-TSA)	S25-Ja0011619	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Extractable Sulfur				Result 1	Result 2	RPD			
Sulfur - KCl Extractable	S25-Ja0011619	CP	% S	0.030	0.030	1.0	30%	Pass	
Peroxide Extractable Sulfur	S25-Ja0011619	CP	% S	0.040	0.040	3.0	20%	Pass	
HCl Extractable Sulfur	S25-Ja0011619	CP	% S	N/A	N/A	N/A	20%	Pass	

Duplicate								
Potential Acidity (SPOS)				Result 1	Result 2	RPD		
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	S25-Ja0011619	CP	% S	0.010	0.008	19	30%	Pass
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	S25-Ja0011619	CP	mol H+/t	6.2	5.1	19	30%	Pass
Duplicate								
Retained Acidity (S-NAS)				Result 1	Result 2	RPD		
Net Acid soluble sulfur (s-SNAS) NLM-4.1	S25-Ja0011619	CP	% S	N/A	N/A	N/A	30%	Pass
Net Acid soluble sulfur (a-SNAS) NLM-4.1	S25-Ja0011619	CP	mol H+/t	N/A	N/A	N/A	30%	Pass
Duplicate								
Extractable Calcium				Result 1	Result 2	RPD		
Calcium - KCl Extractable	S25-Ja0011619	CP	% Ca	0.050	0.050	<1	30%	Pass
Calcium - Peroxide	S25-Ja0011619	CP	% Ca	0.050	0.050	4.0	20%	Pass
Calcium - Acid Reacted	S25-Ja0011619	CP	% Ca	0.007	< 0.005	200	30%	Fail Q15
Calcium - Acid Reacted (s-aCa)	S25-Ja0011619	CP	% S	0.005	< 0.005	200	30%	Fail Q15
Calcium - Acid Reacted (a-aCa)	S25-Ja0011619	CP	mol H+/t	3.3	< 0.005	200	30%	Fail Q02
Duplicate								
Extractable Magnesium				Result 1	Result 2	RPD		
Magnesium - KCl Extractable	S25-Ja0011619	CP	% Mg	0.14	0.14	1.0	30%	Pass
Magnesium - Peroxide	S25-Ja0011619	CP	% Mg	0.14	0.14	1.0	20%	Pass
Magnesium - Acid Reacted	S25-Ja0011619	CP	% Mg	< 0.005	< 0.005	<1	30%	Pass
Magnesium - Acid Reacted (s-aCa)	S25-Ja0011619	CP	% S	< 0.005	< 0.005	<1	30%	Pass
Magnesium - Acid Reacted (a-aCa)	S25-Ja0011619	CP	mol H+/t	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Acid Neutralising Capacity (ANCE)				Result 1	Result 2	RPD		
Acid Neutralising Capacity - (ANCE)	S25-Ja0011619	CP	% CaCO3	N/A	N/A	N/A	30%	Pass
Acid Neutralising Capacity - (a-ANCE)	S25-Ja0011619	CP	mol H+/t	n/a	n/a	N/A	30%	Pass
Duplicate								
Acid Neutralising Capacity (ANCbt)				Result 1	Result 2	RPD		
ANC Fineness Factor	S25-Ja0011619	CP	factor	1.5	1.5	<1	30%	Pass
Duplicate								
Net Acidity (Including ANC)				Result 1	Result 2	RPD		
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	S25-Ja0011619	CP	mol H+/t	27	26	6.0	30%	Pass
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	S25-Ja0011619	CP	% S	0.04	0.04	6.0	30%	Pass
SPOCAS - Liming rate - ASSMAC	S25-Ja0011619	CP	kg CaCO3/t	2.0	2.0	6.0	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	S25-Ja0011620	CP	%	27	31	15	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD		
TRH C10-C14	S25-Ja0011621	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S25-Ja0011621	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S25-Ja0011621	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C10-C16	S25-Ja0011621	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S25-Ja0011621	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S25-Ja0011621	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Benzo(a)pyrene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S25-Ja0011621	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-HCH	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-HCH	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-HCH	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-HCH (Lindane)	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S25-Ja0011621	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S25-Ja0011621	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S25-Ja0011621	CP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Fensulfothion	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S25-Ja0011621	CP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S25-Ja0011621	CP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S25-Ja0011621	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Total Organic Carbon	S25-Ja0011622	CP	%	0.1	0.2	15	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S25-Ja0011623	CP	mg/kg	11	8.7	19	30%	Pass
Cadmium	S25-Ja0011623	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S25-Ja0011623	CP	mg/kg	21	24	12	30%	Pass
Copper	S25-Ja0011623	CP	mg/kg	60	64	7.0	30%	Pass
Lead	S25-Ja0011623	CP	mg/kg	< 5	< 5	<1	30%	Pass
Mercury	S25-Ja0011623	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S25-Ja0011623	CP	mg/kg	180	190	6.0	30%	Pass
Zinc	S25-Ja0011623	CP	mg/kg	78	76	2.0	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	S25-Ja0011630	CP	%	18	17	6.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S25-Ja0011631	CP	mg/kg	13	15	14	30%	Pass
Cadmium	S25-Ja0011631	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S25-Ja0011631	CP	mg/kg	25	29	14	30%	Pass
Copper	S25-Ja0011631	CP	mg/kg	21	22	6.0	30%	Pass
Lead	S25-Ja0011631	CP	mg/kg	110	140	20	30%	Pass
Mercury	S25-Ja0011631	CP	mg/kg	0.3	0.3	1.0	30%	Pass
Nickel	S25-Ja0011631	CP	mg/kg	5.1	< 5	8.0	30%	Pass
Zinc	S25-Ja0011631	CP	mg/kg	95	82	15	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD		
TRH C10-C14	S25-Ja0011636	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S25-Ja0011636	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S25-Ja0011636	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C10-C16	S25-Ja0011636	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S25-Ja0011636	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S25-Ja0011636	CP	mg/kg	< 100	< 100	<1	30%	Pass

Duplicate								
BTX				Result 1	Result 2	RPD		
Benzene	S25-Ja0011636	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S25-Ja0011636	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S25-Ja0011636	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S25-Ja0011636	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S25-Ja0011636	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total*	S25-Ja0011636	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S25-Ja0011636	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD		
TRH C10-C14	S25-Ja0011638	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S25-Ja0011638	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S25-Ja0011638	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C10-C16	S25-Ja0011638	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S25-Ja0011638	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S25-Ja0011638	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S25-Ja0011638	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-HCH	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-HCH	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-HCH	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-HCH (Lindane)	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Heptachlor epoxide	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S25-Ja0011638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S25-Ja0011638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S25-Ja0011638	CP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfthion	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S25-Ja0011638	CP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S25-Ja0011638	CP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S25-Ja0011638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	S25-Ja0011665	CP	%	17	16	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
G01	The LORs have been raised due to matrix interference
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q09	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised by:

Andrew Black	Analytical Services Manager
Chamath JHM Annakkage	Senior Analyst-Asbestos
Jonathon Angell	Senior Analyst-SPOCAS
Mary Makarios	Senior Analyst-Inorganic
Mickael Ros	Senior Analyst-Metal
Raymond Siu	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic
Ryan Phillips	Senior Analyst-Inorganic
Ryan Phillips	Senior Analyst-Sample Properties
Vivian Wang	Senior Analyst-Metal



Glenn Jackson
Managing Director

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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JBS & G Australia (NSW) P/L
Level 8, 179 Elizabeth St
Sydney
NSW 2000



NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Isaac Lee**

Report **1176585-W**

Project name **Liverpool**

Project ID **68150**

Received Date **Jan 10, 2025**

Client Sample ID			TS	TB
Sample Matrix			Trip Spike	Trip Blank
Eurofins Sample No.			(liquid)	(liquid)
Date Sampled			S25-Ja0011673	S25-Ja0011674
Test/Reference	LOR	Unit	Jan 07, 2025	Jan 07, 2025
TRH C6-C10	1	%	73	-
Total Recoverable Hydrocarbons				
Naphthalene	1	%	110	-
TRH C6-C9	1	%	75	-
BTEX				
Benzene	1	%	110	-
Ethylbenzene	1	%	99	-
m&p-Xylenes	1	%	100	-
o-Xylene	1	%	98	-
Toluene	1	%	110	-
Xylenes - Total	1	%	100	-
4-Bromofluorobenzene (surr.)	1	%	87	-
Total Recoverable Hydrocarbons				
TRH C6-C9	0.02	mg/L	-	< 0.02
TRH C6-C10	0.02	mg/L	-	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	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	%	-	83
BTEX and Naphthalene				
Naphthalene ^{N02}	0.01	mg/L	-	< 0.01

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jan 13, 2025	7 Days
Total Recoverable Hydrocarbons - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jan 13, 2025	7 Days
BTEX - Method: LTM-ORG-2010 BTEX and Volatile TRH	Sydney	Jan 13, 2025	14 Days



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Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554	Auckland 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
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Company Name:	JBS & G Australia (NSW) P/L	Order No.:	68150	Received:	Jan 10, 2025 6:54 PM
Address:	Level 8, 179 Elizabeth St Sydney NSW 2000	Report #:	1176585	Due:	Jan 20, 2025
		Phone:	02 8245 0300	Priority:	5 Day
		Fax:		Contact Name:	Isaac Lee
Project Name:	Liverpool				
Project ID:	68150				

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence / Presence	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B14: OCP/OPP	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
External Laboratory																			
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID														
1	BH101 0.2-0.3	Jan 09, 2025		Soil	S25-Ja0011613				X	X	X	X	X		X	X	X		
2	BH102 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011614						X	X			X		X		
3	BH103 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011615						X	X	X		X		X		
4	BH104 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011616						X	X			X		X		
5	BH105 0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011617						X	X			X		X		
6	BH105 0.2-0.3	Jan 08, 2025		Soil	S25-Ja0011618						X	X			X		X		
7	BH105 2.9-3.0	Jan 08, 2025		Soil	S25-Ja0011619									X	X				
8	BH106 0.2-0.3	Jan 09, 2025		Soil	S25-Ja0011620						X	X			X		X		
9	BH106 0.4-0.5	Jan 09, 2025		Soil	S25-Ja0011621						X	X			X		X		
10	BH106 2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011622				X	X				X	X	X			
11	BH107 0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011623						X	X			X		X		
12	BH107 2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011624									X	X				



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6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079

Perth
46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rourke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402

Company Name: JBS & G Australia (NSW) P/L
Address: Level 8, 179 Elizabeth St
Sydney
NSW 2000

Project Name: Liverpool
Project ID: 68150

Order No.: 68150
Report #: 1176585
Phone: 02 8245 0300
Fax:

Received: Jan 10, 2025 6:54 PM
Due: Jan 20, 2025
Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
13	BH108_0.2-0.3	Jan 09, 2025		Soil	S25-Ja0011625						X	X	X		X		X		
14	BH108_2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011626									X	X				
15	TP101_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011627						X	X	X		X		X		
16	TP102_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011628						X	X			X		X		
17	TP102_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011629				X	X					X	X			
18	TP103_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011630				X	X	X	X	X		X	X	X		
19	TP104_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011631						X	X	X		X		X		
20	TP105_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011632						X	X	X		X		X		
21	TP105_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011633						X	X			X		X		
22	TP106_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011634						X	X			X		X		
23	TP107_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011635						X	X	X		X		X		
24	TP108_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011636						X	X	X		X		X		
25	TP108_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011637									X	X				
26	TP109_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011638						X	X	X		X		X		
27	TP109_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011639									X	X				



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Perth
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Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rourke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402

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NSW 2000

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Fax:

Received: Jan 10, 2025 6:54 PM
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Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence / Presence	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B14: OCP/OPP	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
28	TP101_0.0-0.3	Jan 07, 2025		Soil	S25-Ja0011640	X													
29	TP101_0.3-0.5	Jan 07, 2025		Soil	S25-Ja0011641	X													
30	TP102_0.2-0.4	Jan 07, 2025		Soil	S25-Ja0011642	X													
31	TP103_0.0-0.3	Jan 07, 2025		Soil	S25-Ja0011643	X													
32	TP104_0.0-0.3	Jan 07, 2025		Soil	S25-Ja0011644	X													
33	TP105_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011645	X													
34	TP105_0.1-0.6	Jan 07, 2025		Soil	S25-Ja0011646	X													
35	TP106_0.1-0.5	Jan 07, 2025		Soil	S25-Ja0011647	X													
36	TP107_0.0-0.2	Jan 07, 2025		Soil	S25-Ja0011648	X													
37	TP107_0.2-0.4	Jan 07, 2025		Soil	S25-Ja0011649	X													
38	TP108_0.1-1.0	Jan 07, 2025		Soil	S25-Ja0011650	X													
39	TP109_0.2-0.5	Jan 07, 2025		Soil	S25-Ja0011651	X													
40	BH101_0.0-0.3	Jan 09, 2025		Soil	S25-Ja0011652	X													
41	BH102_0.0-0.3	Jan 08, 2025		Soil	S25-Ja0011653	X													
42	BH103_0.1-0.4	Jan 08, 2025		Soil	S25-Ja0011654	X													

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554	Auckland 35 O'Rourke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
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Melbourne Laboratory - NATA # 1261 Site # 1254										X							X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
43	BH104_0.0-0.4	Jan 08, 2025		Soil	S25-Ja0011655	X													
44	BH105_0.2-0.4	Jan 08, 2025		Soil	S25-Ja0011656	X													
45	BH106_0.0-0.4	Jan 09, 2025		Soil	S25-Ja0011657	X													
46	BH107_0.1-0.5	Jan 09, 2025		Soil	S25-Ja0011658	X													
47	BH108_0.0-0.3	Jan 09, 2025		Soil	S25-Ja0011659	X													
48	SS01	Jan 09, 2025		Soil	S25-Ja0011660	X													
49	SS02	Jan 09, 2025		Soil	S25-Ja0011661	X													
50	SS03	Jan 09, 2025		Soil	S25-Ja0011662	X													
51	SS04	Jan 09, 2025		Soil	S25-Ja0011663	X													
52	SS05	Jan 09, 2025		Soil	S25-Ja0011664	X													
53	QC01	Jan 09, 2025		Soil	S25-Ja0011665	X					X	X	X		X		X		
54	QC02	Jan 09, 2025		Soil	S25-Ja0011666	X													
55	TP105_FRAG 01	Jan 09, 2025		Building Materials	S25-Ja0011667		X												
56	TP105_FRAG	Jan 09, 2025		Building	S25-Ja0011668		X												

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554	Auckland 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
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Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
	02			Materials															
57	TP105_FRAG 03	Jan 09, 2025		Building Materials	S25-Ja0011669		X												
58	TP105_FRAG 04	Jan 09, 2025		Building Materials	S25-Ja0011670		X												
59	TP107_FRAG 01	Jan 09, 2025		Building Materials	S25-Ja0011671		X												
60	SS-01_FRAG01	Jan 09, 2025		Building Materials	S25-Ja0011672		X												
61	TS	Jan 07, 2025		Trip Spike (liquid)	S25-Ja0011673														X
62	TB	Jan 07, 2025		Trip Blank (liquid)	S25-Ja0011674													X	
63	BH101_0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011675			X											
64	BH101_0.4-0.5	Jan 09, 2025		Soil	S25-Ja0011676			X											
65	BH101_0.9-1.0	Jan 09, 2025		Soil	S25-Ja0011677			X											
66	BH101_1.4-1.5	Jan 09, 2025		Soil	S25-Ja0011678			X											



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Perth
46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554

Auckland	Auckland (Focus)	Christchurch	Tauranga
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Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
67	BH101_1.9-2.0	Jan 09, 2025		Soil	S25-Ja0011679			X											
68	BH101_2.4-2.5	Jan 09, 2025		Soil	S25-Ja0011680			X											
69	BH101_2.9-3.0	Jan 09, 2025		Soil	S25-Ja0011681			X											
70	BH102_0.2-0.3	Jan 08, 2025		Soil	S25-Ja0011682			X											
71	BH102_0.4-0.5	Jan 08, 2025		Soil	S25-Ja0011683			X											
72	BH102_0.9-1.0	Jan 08, 2025		Soil	S25-Ja0011684			X											
73	BH102_1.4-1.5	Jan 08, 2025		Soil	S25-Ja0011685			X											
74	BH102_1.9-2.0	Jan 08, 2025		Soil	S25-Ja0011686			X											
75	BH102_2.4-2.5	Jan 08, 2025		Soil	S25-Ja0011687			X											
76	BH102_2.9-3.0	Jan 08, 2025		Soil	S25-Ja0011688			X											
77	BH103_0.2-0.3	Jan 08, 2025		Soil	S25-Ja0011689			X											
78	BH103_0.4-0.5	Jan 08, 2025		Soil	S25-Ja0011690			X											
79	BH103_0.9-1.0	Jan 08, 2025		Soil	S25-Ja0011691			X											
80	BH103_1.4-1.5	Jan 08, 2025		Soil	S25-Ja0011692			X											
81	BH103_1.9-2.0	Jan 08, 2025		Soil	S25-Ja0011693			X											



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Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
82	BH103_2.4-2.5	Jan 08, 2025		Soil	S25-Ja0011694			X											
83	BH103_2.9-3.0	Jan 08, 2025		Soil	S25-Ja0011695			X											
84	BH104_0.2-0.3	Jan 08, 2025		Soil	S25-Ja0011696			X											
85	BH104_0.4-0.5	Jan 08, 2025		Soil	S25-Ja0011697			X											
86	BH104_0.9-1.0	Jan 08, 2025		Soil	S25-Ja0011698			X											
87	BH104_1.4-1.5	Jan 08, 2025		Soil	S25-Ja0011699			X											
88	BH104_1.9-2.0	Jan 08, 2025		Soil	S25-Ja0011700			X											
89	BH104_2.4-2.5	Jan 08, 2025		Soil	S25-Ja0011701			X											
90	BH104_2.9-3.0	Jan 08, 2025		Soil	S25-Ja0011702			X											
91	BH105_0.4-0.5	Jan 08, 2025		Soil	S25-Ja0011703			X											
92	BH105_0.9-1.0	Jan 08, 2025		Soil	S25-Ja0011704			X											
93	BH105_1.4-1.5	Jan 08, 2025		Soil	S25-Ja0011705			X											
94	BH105_1.9-2.0	Jan 08, 2025		Soil	S25-Ja0011706			X											
95	BH105_2.4-2.5	Jan 08, 2025		Soil	S25-Ja0011707			X											
96	BH106_0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011708			X											



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Company Name: JBS & G Australia (NSW) P/L
Address: Level 8, 179 Elizabeth St
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Project Name: Liverpool
Project ID: 68150

Order No.: 68150
Report #: 1176585
Phone: 02 8245 0300
Fax:

Received: Jan 10, 2025 6:54 PM
Due: Jan 20, 2025
Priority: 5 Day
Contact Name: Isaac Lee

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence / Presence	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Total Organic Carbon	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B14: OCP/OPP	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X							X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
97	BH106_0.9-1.0	Jan 09, 2025		Soil	S25-Ja0011709			X											
98	BH106_1.4-1.5	Jan 09, 2025		Soil	S25-Ja0011710			X											
99	BH106_1.9-2.0	Jan 09, 2025		Soil	S25-Ja0011711			X											
100	BH106_2.4-2.5	Jan 09, 2025		Soil	S25-Ja0011712			X											
101	BH107_0.2-0.3	Jan 09, 2025		Soil	S25-Ja0011713			X											
102	BH107_0.4-0.5	Jan 09, 2025		Soil	S25-Ja0011714			X											
103	BH107_0.9-1.0	Jan 09, 2025		Soil	S25-Ja0011715			X											
104	BH107_1.4-1.5	Jan 09, 2025		Soil	S25-Ja0011716			X											
105	BH107_1.9-2.0	Jan 09, 2025		Soil	S25-Ja0011717			X											
106	BH107_2.4-2.5	Jan 09, 2025		Soil	S25-Ja0011718			X											
107	BH108_0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011719			X											
108	BH108_0.4-0.5	Jan 09, 2025		Soil	S25-Ja0011720			X											
109	BH108_0.9-1.0	Jan 09, 2025		Soil	S25-Ja0011721			X											
110	BH108_1.4-1.5	Jan 09, 2025		Soil	S25-Ja0011722			X											
111	BH108_1.9-2.0	Jan 09, 2025		Soil	S25-Ja0011723			X											

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554	Auckland 35 O'Rourke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
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Melbourne Laboratory - NATA # 1261 Site # 1254										X							X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
112	BH108_2.4-2.5	Jan 09, 2025		Soil	S25-Ja0011724			X											
113	TP101_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011725			X											
114	TP101_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011726			X											
115	TP101_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011727			X											
116	TP102_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011728			X											
117	TP102_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011729			X											
118	TP102_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011730			X											
119	TP103_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011731			X											
120	TP103_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011732			X											
121	TP104_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011733			X											
122	TP104_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011734			X											
123	TP104_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011735			X											
124	TP105_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011736			X											
125	TP105_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011737			X											
126	TP105_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011738			X											



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46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554

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Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
127	TP106_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011739			X											
128	TP106_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011740			X											
129	TP106_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011741			X											
130	TP107_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011742			X											
131	TP107_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011743			X											
132	TP107_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011744			X											
133	TP107_1.4-1.5	Jan 07, 2025		Soil	S25-Ja0011745			X											
134	TP108_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011746			X											
135	TP108_0.4-0.5	Jan 07, 2025		Soil	S25-Ja0011747			X											
136	TP108_0.9-1.0	Jan 07, 2025		Soil	S25-Ja0011748			X											
137	TP109_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011749			X											
138	TP109_0.2-0.3	Jan 07, 2025		Soil	S25-Ja0011750			X											
139	TP109_0.7-0.8	Jan 07, 2025		Soil	S25-Ja0011751			X											
140	TP102_0.0-0.2	Jan 07, 2025		Soil	S25-Ja0011752			X											
141	TP102_0.4-0.7	Jan 07, 2025		Soil	S25-Ja0011753			X											



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Melbourne Laboratory - NATA # 1261 Site # 1254										X						X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780														X					
142	TP104_0.3-0.7	Jan 07, 2025		Soil	S25-Ja0011754			X											
143	TP106_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011755			X											
144	TP107_0.4-0.6	Jan 07, 2025		Soil	S25-Ja0011756			X											
145	TP108_0.0-0.1	Jan 07, 2025		Soil	S25-Ja0011757			X											
146	TP109_0.0-0.2	Jan 07, 2025		Soil	S25-Ja0011758			X											
147	TP109_0.5-0.8	Jan 07, 2025		Soil	S25-Ja0011759			X											
148	BH103_0.0-0.1	Jan 08, 2025		Soil	S25-Ja0011760			X											
149	BH105_0.0-0.2	Jan 08, 2025		Soil	S25-Ja0011761			X											
150	BH107_0.0-0.1	Jan 09, 2025		Soil	S25-Ja0011762			X											
151	TP107-1.4-1.5	Jan 09, 2025		Soil	S25-Ja0012114			X											
Test Counts						27	6	89	4	4	21	21	11	6	28	4	21	1	1

Internal Quality Control Review and Glossary

General

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

Holding Times

Please refer to the '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 before sample receipt deadlines as stated on the SRA.

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

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

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

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ppm: parts per million
µg/L: micrograms per litre	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	Colour: Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - 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.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

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%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as 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 are not data from your samples.
3. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Total Recoverable Hydrocarbons									
TRH C6-C9			mg/L	< 0.02			0.02	Pass	
TRH C6-C10			mg/L	< 0.02			0.02	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									
BTEX and Naphthalene									
Naphthalene			mg/L	< 0.01			0.01	Pass	
LCS - % Recovery									
Total Recoverable Hydrocarbons									
TRH C6-C9			%	86			70-130	Pass	
TRH C6-C10			%	84			70-130	Pass	
LCS - % Recovery									
BTEX									
Benzene			%	88			70-130	Pass	
Toluene			%	89			70-130	Pass	
Ethylbenzene			%	81			70-130	Pass	
m&p-Xylenes			%	83			70-130	Pass	
o-Xylene			%	84			70-130	Pass	
Xylenes - Total*			%	91			70-130	Pass	
LCS - % Recovery									
BTEX and Naphthalene									
Naphthalene			%	92			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S25-Ja0011210	NCP	%	85			70-130	Pass	
TRH C6-C10	S25-Ja0011210	NCP	%	86			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S25-Ja0011210	NCP	%	96			70-130	Pass	
Toluene	S25-Ja0011210	NCP	%	97			70-130	Pass	
Ethylbenzene	S25-Ja0011210	NCP	%	94			70-130	Pass	
m&p-Xylenes	S25-Ja0011210	NCP	%	91			70-130	Pass	
o-Xylene	S25-Ja0011210	NCP	%	93			70-130	Pass	
Xylenes - Total*	S25-Ja0011210	NCP	%	92			70-130	Pass	
Spike - % Recovery									
BTEX and Naphthalene				Result 1					
Naphthalene	S25-Ja0011210	NCP	%	96			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S25-Ja0011674	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	S25-Ja0011674	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	

Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S25-Ja0011674	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Toluene	S25-Ja0011674	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Ethylbenzene	S25-Ja0011674	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
m&p-Xylenes	S25-Ja0011674	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
o-Xylene	S25-Ja0011674	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Xylenes - Total*	S25-Ja0011674	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass
Duplicate								
BTEX and Naphthalene				Result 1	Result 2	RPD		
Naphthalene	S25-Ja0011674	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
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:

Andrew Black Analytical Services Manager
Raymond Siu Senior Analyst-Volatile



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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CHAIN OF CUSTODY RECORD

Envirolab Environmental Testing ABN 50 991 620 521

Sydney Laboratory
179 Sheppard Road Greenwell NSW 1505
02 9200 6400 EnvirolabSample@envirolab.com

Brisbane Laboratory
Unit 1/21 Seabrook Place Marcelline QLD 4172
07 3822 4020 EnvirolabSampleQLD@envirolab.com

Perth Laboratory
45-47 North Road Midland WA 6108
08 9253 4444 Sample@ENLgroup.com.au

Melbourne Laboratory
6 Mariner Road Dandenong South VIC 3175
03 8244 6000 EnvirolabSample@envirolab.com

Company	J&S & O Australia (NSW) PTY LTD	Project ID#	00159	Project Manager	Eve Pichin	Facility Code		Sampler's	Eve Pichin										
Address	Level 1, 89 Margaret Street, Sydney, NSW	Project Name	Liverpool	EDD Permit	New South Wales			Transferred by	Eve Pichin										
Contact Name	James Lee							Email for Invoice	AdminNSW@ibse.com.au										
Phone No	02 6245 6300							Email for Results	Enviro@ibse.com.au, info@ibse.com.au, register@ibse.com.au										
Special Directors								Containers	Request Transported by										
Purchase Order	00159								Overnight (reporting by Email)										
Quote ID No									Same day 6 1 day 6										
									2 days 6 3 days 6										
									5 days (Standard)										
									Other										
No	Client Sample ID	Sampled Date/Time	Matrix	Heavy Metals	TRUSTEX	PAHs	OCs/OPPs	ECs, pH, TOC	OPCAs	Adhesives in soil (HSE)	Adhesives ID and Weight	30ml Plastic	150ml Plastic	1000ml Plastic	5L VOA HD	1700ml VOA HD	Any (Name or Weight)	Request Transported by	
1	BH101_0.0-0.1	9/01/2025	Soil																
2	BH101_0.2-0.3	9/01/2025	Soil	X	X	X	X	X											
3	BH101_0.4-0.5	9/01/2025	Soil																
4	BH101_0.6-1.0	9/01/2025	Soil																
5	BH101_1.4-1.5	9/01/2025	Soil																
6	BH101_1.9-2.0	9/01/2025	Soil																
7	BH101_2.4-2.5	9/01/2025	Soil																
8	BH101_2.9-3.0	9/01/2025	Soil																
9	BH102_0.0-0.1	8/01/2025	Soil	X	X	X													
10	BH102_0.2-0.3	8/01/2025	Soil																
11	BH102_0.4-0.5	8/01/2025	Soil																
12	BH102_0.6-1.0	8/01/2025	Soil																
13	BH102_1.4-1.5	8/01/2025	Soil																
14	BH102_1.9-2.0	8/01/2025	Soil																
15	BH102_2.4-2.5	8/01/2025	Soil																
16	BH102_2.9-3.0	8/01/2025	Soil																
17	BH103_0.0-0.1	8/01/2025	Soil	X	X	X	X												
18	BH103_0.2-0.3	8/01/2025	Soil																



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

Job No: 370401

Date Received: 14/1/25

Time Received: 1510

Received By: ON

Temp: Cool/Ambient

Cooling: Ice/Insack

Security: Intact/Broken/None

117-6525

[illegible]

[illegible]

CERTIFICATE OF ANALYSIS 370401

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	E Piccinin
Address	Level 8, 179 Elizabeth St, Sydney, NSW, 2000

Sample Details

Your Reference	68150
Number of Samples	2 Soil
Date samples received	14/01/2025
Date completed instructions received	14/01/2025

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	21/01/2025
Date of Issue	20/01/2025
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Asbestos Approved By

Analysed by Asbestos Approved Analyst: Amanda Lee
 Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By

Giovanni Agosti, Group Technical Manager
 Lucy Zhu, Asbestos Supervisor
 Timothy Toll, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		370401-1
Your Reference	UNITS	QC01
Date Sampled		09/01/2025
Type of sample		Soil
Date extracted	-	15/01/2025
Date analysed	-	15/01/2025
TRH C ₆ - C ₉	mg/kg	<25
TRH C ₆ - C ₁₀	mg/kg	<25
vTRH 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	%	80

svTRH (C10-C40) in Soil		
Our Reference		370401-1
Your Reference	UNITS	QC01
Date Sampled		09/01/2025
Type of sample		Soil
Date extracted	-	15/01/2025
Date analysed	-	16/01/2025
TRH C ₁₀ - C ₁₄	mg/kg	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100
Total +ve TRH (C10-C36)	mg/kg	<50
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	%	87

PAHs in Soil		
Our Reference		370401-1
Your Reference	UNITS	QC01
Date Sampled		09/01/2025
Type of sample		Soil
Date extracted	-	15/01/2025
Date analysed	-	16/01/2025
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 <i>p</i> -Terphenyl-d14	%	87

Organochlorine Pesticides in soil		
Our Reference		370401-1
Your Reference	UNITS	QC01
Date Sampled		09/01/2025
Type of sample		Soil
Date extracted	-	15/01/2025
Date analysed	-	16/01/2025
alpha-BHC	mg/kg	<0.1
HCB	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-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
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Mirex	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1
Surrogate 4-Chloro-3-NBTF	%	95

Organophosphorus Pesticides in Soil		
Our Reference		370401-1
Your Reference	UNITS	QC01
Date Sampled		09/01/2025
Type of sample		Soil
Date extracted	-	15/01/2025
Date analysed	-	16/01/2025
Dichlorvos	mg/kg	<0.1
Mevinphos	mg/kg	<0.1
Phorate	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Disulfoton	mg/kg	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1
Parathion-Methyl	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Fenthion	mg/kg	<0.1
Parathion	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Methidathion	mg/kg	<0.1
Fenamiphos	mg/kg	<0.1
Ethion	mg/kg	<0.1
Phosalone	mg/kg	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1
Coumaphos	mg/kg	<0.1
Surrogate 4-Chloro-3-NBTF	%	95

Acid Extractable metals in soil			
Our Reference	UNITS	370401-1	370401-3
Your Reference		QC01	QC01 - [TRIPLICATE]
Date Sampled		09/01/2025	09/01/2025
Type of sample		Soil	Soil
Date prepared	-	15/01/2025	15/01/2025
Date analysed	-	15/01/2025	15/01/2025
Arsenic	mg/kg	10	15
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	23	38
Copper	mg/kg	20	13
Lead	mg/kg	19	39
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	4	4
Zinc	mg/kg	16	27

Moisture		
Our Reference	UNITS	370401-1
Your Reference		QC01
Date Sampled		09/01/2025
Type of sample		Soil
Date prepared	-	15/01/2025
Date analysed	-	16/01/2025
Moisture	%	18

Asbestos ID - soils NEPM - ASB-001

Our Reference		370401-1	370401-2
Your Reference	UNITS	QC01	QC02
Date Sampled		09/01/2025	09/01/2025
Type of sample		Soil	Soil
Date analysed	-	15/01/2025	15/01/2025
Sample mass tested	g	764.71	872.1
Sample Description	-	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
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
Asbestos comments	-	Nil	Nil

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 relative to the sample mass tested) 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.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.

Method ID	Methodology Summary
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX 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-5	[NT]
Date extracted	-			15/01/2025	1	15/01/2025	15/01/2025		15/01/2025	[NT]
Date analysed	-			15/01/2025	1	15/01/2025	15/01/2025		15/01/2025	[NT]
TRH C ₆ - C ₉	mg/kg	25	Org-023	<25	1	<25	<25	0	90	[NT]
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	<25	1	<25	<25	0	90	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	93	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	90	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	93	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	86	[NT]
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	85	[NT]
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	80	1	80	78	3	82	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			15/01/2025	1	15/01/2025	15/01/2025		15/01/2025	[NT]
Date analysed	-			16/01/2025	1	16/01/2025	16/01/2025		16/01/2025	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	<50	1	<50	<50	0	87	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	<100	1	<100	<100	0	83	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	<100	1	<100	<100	0	129	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	<50	1	<50	<50	0	87	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	<100	1	<100	<100	0	83	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	<100	1	<100	<100	0	129	[NT]
Surrogate o-Terphenyl	%		Org-020	89	1	87	88	1	135	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			15/01/2025	1	15/01/2025	15/01/2025		15/01/2025	[NT]
Date analysed	-			16/01/2025	1	16/01/2025	16/01/2025		16/01/2025	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	68	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	62	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	68	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	76	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	70	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	74	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	80	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	66	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	87	1	87	84	4	89	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			15/01/2025	1	15/01/2025	15/01/2025		15/01/2025	[NT]
Date analysed	-			16/01/2025	1	16/01/2025	16/01/2025		16/01/2025	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	74	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	74	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	74	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	72	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	80	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	70	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	72	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	70	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	78	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	70	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	78	1	95	94	1	80	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			15/01/2025	1	15/01/2025	15/01/2025		15/01/2025	[NT]
Date analysed	-			16/01/2025	1	16/01/2025	16/01/2025		16/01/2025	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	74	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	68	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	76	[NT]
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	76	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	72	[NT]
Fenthion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	70	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	64	[NT]
Phosalone	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	78	1	95	94	1	80	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date prepared	-			15/01/2025	1	15/01/2025	15/01/2025		15/01/2025	[NT]
Date analysed	-			15/01/2025	1	15/01/2025	15/01/2025		15/01/2025	[NT]
Arsenic	mg/kg	4	Metals-020	<4	1	10	11	10	118	[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	23	26	12	108	[NT]
Copper	mg/kg	1	Metals-020	<1	1	20	29	37	114	[NT]
Lead	mg/kg	1	Metals-020	<1	1	19	26	31	107	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	104	[NT]
Nickel	mg/kg	1	Metals-020	<1	1	4	7	55	108	[NT]
Zinc	mg/kg	1	Metals-020	<1	1	16	24	40	110	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 370401-1 for Ni&Zn. Therefore a triplicate result has been issued as laboratory sample number 370401-3.

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.

Appendix G Statistical Analysis

UCL Statistics for Data Sets with Non-Detects

User Selected Options
Date/Time of Computation #####
From File WorkSheet.xls
Full Precision OFF
Confidence Coefficient 95%
Number of Bootstrap Operations 2000

nickel

General Statistics			
Total Number of Observations	9	Number of Distinct Observations	6
Number of Detects	5	Number of Non-Detects	4
Number of Distinct Detects	5	Number of Distinct Non-Detects	1
Minimum Detect	5.6	Minimum Non-Detect	5
Maximum Detect	180	Maximum Non-Detect	5
Variance Detects	5273	Percent Non-Detects	44.44%
Mean Detects	56.92	SD Detects	72.61
Median Detects	29	CV Detects	1.276
Skewness Detects	1.723	Kurtosis Detects	2.936
Mean of Logged Detects	3.274	SD of Logged Detects	1.468

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.0

Normal GOF Test on Detects Only	
Shapiro Wilk Test Statistic	0.794 Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.762 Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.267 Lilliefors GOF Test
5% Lilliefors Critical Value	0.396 Detected Data appear Normal at 5% Significance Level
Detected Data appear Normal at 5% Significance Level	

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	33.84	Standard Error of Mean	20.44
SD	54.85	95% KM (BCA) UCL	70
95% KM (t) UCL	71.88	95% KM (Percentile Bootstrap) UCL	66.44
95% KM (z) UCL	67.47	95% KM Bootstrap t UCL	163.4
90% KM Chebyshev UCL	95.17	95% KM Chebyshev UCL	123
97.5% KM Chebyshev UCL	161.5	99% KM Chebyshev UCL	237.3

Gamma GOF Tests on Detected Observations Only	
A-D Test Statistic	0.298 Anderson-Darling GOF Test
5% A-D Critical Value	0.698 Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.233 Kolmogrov-Smirnoff GOF
5% K-S Critical Value	0.366 Detected data appear Gamma Distributed at 5% Significance Level
Detected data appear Gamma Distributed at 5% Significance Level	

Gamma Statistics on Detected Data Only			
k hat (MLE)	0.777	k star (bias corrected MLE)	0.444
Theta hat (MLE)	73.29	Theta star (bias corrected MLE)	128.2
nu hat (MLE)	7.766	nu star (bias corrected)	4.44
MLE Mean (bias corrected)	56.92	MLE Sd (bias corrected)	85.43

Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.381	nu hat (KM)	6.852
Approximate Chi Square Value (6.85, α)	2.09	Adjusted Chi Square Value (6.85, β)	1.581
95% Gamma Approximate KM-UCL (use when $n \geq 50$)	111	95% Gamma Adjusted KM-UCL (use when $n < 50$)	146.7

Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detected data is small such as < 0.1			
For such situations, GROS method tends to yield inflated values of UCLs and BTVs			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.01	Mean	31.63
Maximum	180	Median	5.6
SD	59.46	CV	1.88
k hat (MLE)	0.2	k star (bias corrected MLE)	0.207
Theta hat (MLE)	158.2	Theta star (bias corrected MLE)	152.5
nu hat (MLE)	3.598	nu star (bias corrected)	3.732
MLE Mean (bias corrected)	31.63	MLE Sd (bias corrected)	69.46
		Adjusted Level of Significance (β)	0.0231
Approximate Chi Square Value (3.73, α)	0.619	Adjusted Chi Square Value (3.73, β)	0.406
95% Gamma Approximate UCL (use when $n \geq 50$)	190.7	95% Gamma Adjusted UCL (use when $n < 50$)	290.7

Lognormal GOF Test on Detected Observations Only	
Shapiro Wilk Test Statistic	0.934 Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.762 Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.217 Lilliefors GOF Test
5% Lilliefors Critical Value	0.396 Detected Data appear Lognormal at 5% Significance Level
Detected Data appear Lognormal at 5% Significance Level	

Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	31.86	Mean in Log Scale	1.327
SD in Original Scale	59.33	SD in Log Scale	2.647
95% t UCL (assumes normality of ROS data)	68.63	95% Percentile Bootstrap UCL	64.78
95% BCA Bootstrap UCL	88.43	95% Bootstrap t UCL	201.3
95% H-UCL (Log ROS)	128.716		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed			
KM Mean (logged)	2.534	95% H-UCL (KM -Log)	167.4
KM SD (logged)	1.281	95% Critical H Value (KM-Log)	3.896
KM Standard Error of Mean (logged)	0.478		

DL/2 Statistics			
DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	32.73	Mean in Log Scale	2.226
SD in Original Scale	58.81	SD in Log Scale	1.619
95% t UCL (Assumes normality)	69.19	95% H-Stat UCL	518.3
DL/2 is not a recommended method, provided for comparisons and historical reasons			

Nonparametric Distribution Free UCL Statistics			
Detected Data appear Normal Distributed at 5% Significance Level			
Suggested UCL to Use			
95% KM (t) UCL	71.86	95% KM (Percentile Bootstrap) UCL	66.44

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. Recommendations are based upon data size, data distribution, and skewness. These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2008). However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

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