TAFE NSW

# Preliminary Site Investigation

TAFE NSW Construction Centre of Excellence
2-44 O'Connell Street, Kingswood, NSW

5 February 2021

59831/134229 (Rev 1)

JBS&G Australia Pty Ltd

www.jbsg.com.au

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## Table of Contents

## List of Tables



## List of Figures



## Tables

## Appendices

# Abbreviations

| Term | Definition |
|---|---|
| ACM | Asbestos Containing Materials |
| AF/FA | Asbestos fines and friable asbestos |
| AEC | Areas of Environmental Concern |
| AHD | Australian Height Datum |
| ASRIS | Australian Soil Resource Information System |
| ASS | Acid Sulfate Soils |
| BTEX | Benzene, Toluene, Ethylbenzene, Xylenes |
| CLM Act | NSW Contaminated Land Management Act 1997 |
| COC | Chain of Custody |
| COPC | Contaminants of Potential Concern |
| CSM | Conceptual Site Model |
| DBYD | Dial Before You Dig |
| DP | Deposited Plan |
| DQI | Data Quality Indicators |
| DQO | Data Quality Objectives |
| DSI | Detailed Site Investigation |
| EIL | Ecological Investigation Levels |
| EPA | NSW Environment Protection Authority |
| ESA | Environmental Site Assessment |
| ESLs | Ecological Screening Levels |
| GFA | Gross floor area |
| ha | Hectare |
| HILs | Health Investigation Levels |
| HSLs | Health Screening Levels |
| JBS&G | JBS&G Australia Pty Ltd |
| JRA | Job Risk Assessment |
| LEP | Local Environment Plan |
| LOR | Limit of Reporting |
| NATA | National Accreditation Testing Authority |
| OCP | Organochlorine Pesticides |
| OPP | Organophosphorous Pesticides |
| PAH | Polycyclic Aromatic Hydrocarbons |
| PCB | Polychlorinated Biphenyls |
| PID | Photoionisation Detector |
| POEO Act | NSW Protection of the Environment Operations Act 1997 |
| PSI | Preliminary Site Investigation |
| QA/QC | Quality Assurance/Quality Control |
| RPD | Relative Percentage Difference |
| SAQP | Sampling Analytical and Quality Plan |
| SWMS | Safe Work Method Statement |
| TAFE CCoE | TAFE NSW Construction Centre of Excellence |
| TRH | Total Recoverable Hydrocarbons |
| UCL | Upper Confidence Limit |
| VOC | Volatile Organic Compounds |

## Executive Summary

JBS&G Australia Pty Ltd (JBS&G) was engaged by TAFE NSW (TAFE, the client) to undertake a Preliminary Site Investigation (PSI) to support the State Significant Development Application (SSDA) SSD_ 8571481 relating to the development of an educational facility at the TAFE Nepean Kingswood Campus (the TAFE Kingswood Campus) located at 2 – 44 O'Connell Street, Kingswood NSW. The TAFE Kingswood Campus comprises a rectangular lot with an area of approximately 23 hectares. This PSI was undertaken within an L-shaped portion of the TAFE Kingswood Campus (herein referred to as 'the site') comprising an area of 9 hectares where the proposed built form and access roads will be located. . The site is legally identified as part Lot 1 in Deposited Plan (DP) 866081. The site location and site layout are shown in **Figure 1** and **Figure 2**, respectively.

The purpose of this report is to undertake a preliminary assessment of the potential for contamination based on current and historical site activities and to draw conclusions regarding the potential contamination status of the site to support the SSDA, as per the requirements of State Environmental Planning Policy 55 – Remediation of Land (SEPP 55).

Specifically, the SSDA seeks development consent for the construction and operation of the TAFE NSW Construction Centre of Excellence (TAFE CCoE) a multi-level, integrated educational facility designed to accommodate specialised training and education for construction-related TAFE NSW courses (the project). The TAFE CCoE will be a new learning environment with an emphasis on flexibility and adaptability, to encourage cross-disciplinary collaboration, industry engagement and educational excellence. On 27 February 2019, the NSW Government announced the delivery and associated funding for the CCoE.

The proposed development is classified as State Significant Development (SSD) on the basis that it falls within the requirements of clause 4, Schedule 19 of the State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP), being 'development for the purpose of a tertiary institution… that has a capital investment value of more than $30 million'.

The Minister for Planning, or their delegate, is the consent authority for the SSDA and this application is lodged with the NSW Department of Planning, Industry and Environment (NSW DPIE) for assessment.

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) issued for the project. Specifically, this report has been prepared to respond to item 13 'Contamination' to assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55.

The PSI documented herein has been prepared in general accordance with guidelines made or approved by the NSW Environment Protection Authority (EPA) and DUAP/EPA (1998) Planning Guidelines for SEPP 55.

A concurrent geotechnical investigation was undertaken by JBS&G's geotechnical specialist subconsultant, Pells Sullivan Meynink (PSM), with a standalone report issued for those investigations.

The objectives of the investigation were to complete a preliminary assessment of the potential for contamination based on current and historical site activities and to draw conclusions regarding the potential contamination status of the site to support the SSDA, as per the requirements of SEPP 55.

The scope of works for the assessment included: a review of available site history and background information to identify potential areas of environmental concern (AECs) and associated contaminants of potential concern (COPC); review of the environmental setting including topography, geology and hydrogeology of the site and surrounding areas; a detailed site inspection

to identify potential AECs and confirm desktop findings; a limited soil investigation at 10 locations across the site and groundwater investigation at one groundwater monitoring well; development and documentation of a conceptual site model (CSM) based on the available information; and preparation of this PSI report in general accordance with relevant EPA made or endorsed guidelines.

Based on the engaged scope of work and subject to the limitations in **Section 11**, the following summarises the findings and conclusions of the assessment:

- The site history review identified that the site was historically used for rural residential and agricultural use including livestock grazing and market gardening prior to development as the TAFE Kingswood Campus with no significantly contaminating historical land uses identified.
- A search of the NSW EPA contaminated land register and NSW contaminated sites notified to the EPA did not identify any notices relating to the site, or any potential for migration of contamination to the site from adjacent properties.
- Based on review acid sulfate soil risk mapping, local topography and site observations, no further consideration of requirements in relation to assessment and/or management of ASS is necessary with regard to the proposed development.
- Concentrations of COPCs were not identified at levels posing an unacceptable risk to human/ecological receptors relating to the proposed development of the site.
- Brick and concrete fragments observed within surface soil to the south of Block P, to the north and east of Building D, and adjacent to the drainage line in the northern portion of the site which could pose an aesthetic issue if exposed.
- Based on the conditions encountered during the soil investigation and the lack of significant COPC concentrations in soil samples, and findings of the preliminary groundwater assessment, COPC migration to groundwater or off-site migration of contamination via surface water/groundwater is considered to be low.
- The risk from contamination at the site is low. However, fill is present at the site, and given the limited nature of intrusive investigations, implementation of an appropriate unexpected finds protocol for future development works would enable management of any unidentified contamination, if encountered.

Typical site management controls including protocols to manage unexpected finds should be implemented during any ground disturbance works associated with future site development.

# 1. Introduction

## 1.1 Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by TAFE NSW (TAFE, the client) to undertake a Preliminary Site Investigation (PSI) to support the State Significant Development Application (SSDA) SSD_ 8571481 relating to the development of an educational facility at the TAFE Nepean Kingswood Campus (the TAFE Kingswood Campus) located at 2 – 44 O'Connell Street, Kingswood NSW. The TAFE Kingswood Campus comprises a rectangular lot with an area of approximately 23 hectares (ha). This PSI was limited to the extent of proposed development activities comprising an L- shaped portion of the TAFE Kingswood Campus (herein referred to as 'the site'). The site is legally identified as part Lot 1 in Deposited Plan (DP) 866081 and covers an area size of approximately 9.5 ha. The site location and site layout are shown in **Figure 1** and **Figure 2**, respectively.

The purpose of this report is to undertake a preliminary assessment of the potential for contamination based on current and historical site activities and to draw conclusions regarding the potential contamination status of the site to support the SSDA, as per the requirements of State Environmental Planning Policy 55 – Remediation of Land (SEPP 55).

Specifically, the SSDA seeks development consent for the construction and operation of the TAFE NSW Construction Centre of Excellence (TAFE CCoE) a multi-level, integrated educational facility designed to accommodate specialised training and education for construction-related TAFE NSW courses (the project). The TAFE CCoE will be a new learning environment with an emphasis on flexibility and adaptability, to encourage cross-disciplinary collaboration, industry engagement and educational excellence. On 27 February 2019, the NSW Government announced the delivery and associated funding for the CCoE.

The proposed development is classified as State Significant Development (SSD) on the basis that it falls within the requirements of clause 4, Schedule 19 of the State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP), being 'development for the purpose of a tertiary institution… that has a capital investment value of more than $30 million'.

The Minister for Planning, or their delegate, is the consent authority for the SSDA and this application is lodged with the NSW Department of Planning, Industry and Environment (NSW DPIE) for assessment.

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) issued for the project. Specifically, this report has been prepared to respond to item 13 'Contamination' to assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55.

The PSI documented herein has been prepared in general accordance with guidelines made or approved by the NSW Environment Protection Authority (EPA) and DUAP/EPA (1998) Planning Guidelines for SEPP 55.

A concurrent geotechnical investigation was undertaken by JBS&G's geotechnical specialist subconsultant, Pells Sullivan Meynink (PSM), with a standalone report issued for those investigations.

## 1.2 Proposed Development

The proposed building of TAFE CCoE is to be constructed within the northeastern portion of the site, whilst the remainder of the site is proposed to be developed as vehicle access and parking. It is understood that the existing campus buildings within the site will be retained. The proposed development works will include:

- Site preparation works including tree removal and excavation;
- Construction of a 2-3 storey Construction Hub accommodating approximately 9,200m² of gross floor area (GFA). The building will include learning and workshop spaces, workspaces and areas for industry engagement;
- Provision of additional car parking; and
- Landscaping works.

The proposed development plans provided by the client are included as **Appendix A**.

### 1.3 Objectives

The objectives of the investigation are to complete a preliminary assessment of the potential for contamination based on current and historical site activities and to draw conclusions regarding the potential contamination status of the site to support the SSDA, as per the requirements of SEPP 55.

### 1.4 Scope of Work

To achieve the objectives of the investigation, the following scope of works was conducted:

- A review of available site history and background information to identify potential areas of environmental concern (AECs) and associated contaminants of potential concern (COPC), including:
  - Section 10.7 (2) & (5) certificates and other publicly available information obtained from council;
  - Records of stored dangerous goods held by SafeWork NSW;
  - Historical land title records;
  - Historical aerial photographs obtained from the NSW Spatial Services;
  - Publicly available EPA records held by NSW EPA, where readily available;
  - Publicly available heritage records held by NSW Heritage, and Australian Heritage database, where readily available; and
  - Licensed groundwater bores present within a 500 m radius of the site available online from Water NSW;
- Review of the environmental setting including topography, geology and hydrogeology of the site and surrounding areas;
- A detailed site inspection to identify potential AECs and confirm desktop findings;
- Limited soil investigation at 10 locations across the site and groundwater investigation at one groundwater monitoring well;
- Development and documentation of a conceptual site model (CSM) based on the available information; and
- Preparation of this PSI report in general accordance with relevant EPA made or endorsed guidelines.

# 2. Site Condition and Surrounding Environment

## 2.1 Site Identification

The site location is shown on **Figure 1** and the site layout is shown on **Figure 2**. The site details are summarised in **Table 2.1** and described in detail in the following sections.

**Table 2.1: Summary Site Details**

| | |
|---|---|
| **Lot/DP** | Part Lot 1 in DP 866081 |
| **Address** | 2-44 O'Connell Street, Kingswood, NSW |
| **Local Government Authority** | Penrith City Council |
| **MGA Coordinates (GDA94 MGA 56)** | E: 290620<br>N: 6261420 (approximate centre of the site) |
| **Site Zoning** | Zone SP2 Infrastructure (Penrith Local Environmental Plan 2010) |
| **Current Use** | Agricultural/ rural residential and tertiary education establishment |
| **Previous Use** | Tertiary education establishment |
| **Proposed Use** | Tertiary education establishment |
| **Site Area** | 9.5 ha |

## 2.2 Site Description

A detailed site inspection was completed by one of JBS&G's qualified and experienced field scientists on 17 November 2020. Relevant site observations are discussed below, and a photographic log is included in **Appendix B**. The site layout is shown in **Figure 2**.

The site comprised an L-shaped parcel of land located within the broader TAFE Kingswood Campus, bound by Great Western Highway to the north, O'Connell Street to the west, vacant rural property to the south and Western Sydney University (WSU) Werrington Campus to the east.

The southern extent of the site comprised various campus buildings, carparks, landscaped areas and associated access roads whilst the northern extent remained grassed and undeveloped. The broader TAFE Kingswood Campus was fenced from the northern, western and southern boundaries and was freely accessible from the WSU Werrington Campus located to the east. The site was accessed via a secured gate from O'Connell Street.

Seven buildings were present on site, of which Buildings B, C, E, N, T and P were used for educational purposes, whilst Building D was used by campus administration/security for office and storage purposes. The building identifiers are shown on the proposed development plans provided in **Appendix A**. Five distinct asphalt paved carpark areas were located on site in the eastern section west of Building B, between Buildings C and E, west of Building D, south of Building N and west of Buildings P and T. The pavement was observed to be in good condition with minor cracking observed.

A stockpile containing mulch was observed in the southern portion of the site adjacent to building N, in addition to three above ground storage tanks (AST) likely used for rainwater collection. Wooden pallets, some metal, concrete slab and cottonseed oil containers were observed on the grassed area south of Building D. Brick and concrete fragments were observed within exposed surface soil to the south of Block P, to the north and east of Building D, and adjacent to the drainage line in the northern portion of the site.

Two unnamed ephemeral tributaries/drainage lines of Werrington Creek were located in the northern extent of the site oriented and flowing approximately southeast to northwest and east to west respectively. The drainage lines merge at a surface dam located adjoining the northwestern site boundary. A separate surface depression/drainage line was located parallel and to the south of the drainage line flowing east to west. A linear mound was observed extending from this drainage line to the north towards Great Western Highway.

The southern portion of the site sloped to the west towards O'Connell Street whilst the northern portion of the site sloped toward local drainage lines as described above.

At the time of the inspection there were no signs of underground waste storage (i.e. no surface gatic covers, breathers or associated infrastructure). In addition, there was no evidence of surface staining associated with chemical spills, no signs of distressed vegetation or other potential visual indicators of significant contamination issues at the site. No evidence of asbestos containing materials (ACM) waste/debris was observed on the ground surfaces.

### 2.3 Surrounding Land Use

Surrounding land uses are described following:

- North – Broader TAFE Kingswood Campus, Great Western Highway, WSU Werrington Campus and low-density residential properties beyond;
- East – WSU Werrington Campus followed by low density residential properties;
- South – Rural residential properties, followed by Werrington Creek, WSU Kingswood Campus and low density residential properties beyond; and
- West – O'Connell Street followed by low density residential properties.

### 2.4 Topography

A review of regional topographic data provided on SIX Maps[1] indicated that the site is situated at an elevation of approximately 45-55 m Australian Height Datum (AHD). The site was gently undulating and with minor slopes toward local drainage lines, shown on **Figure 2**.

### 2.5 Geology

Review of the Penrith 1:100 000 geological map (DME 1991[2]) indicates that the site is underlain by the Wianamatta Group Bringelly Shale, comprising carbonaceous claystone, claystone, laminite, fine to medium grained lithic sandstone, rare coal and tuff.

Reference to the online ESPADE 2.0 tool hosted by the NSW Office of Environmental and Heritage (OEH 2017[3]) indicates that the site is located on Luddenham erosional soil landscape group. The landscape is characterised by undulating to rolling low hills on Wianamatta Group shales often associated with sandstone. Dark podzolic soils are fairly shallow with massive earthy clays on crests, moderately deep red podzolic soils on upper slopes and moderately deep yellow podzolic soils and prairie on lower slopes and drainage lines. Limitations of this soil landscape group are moderately reactive soils, water erosion hazards, localised steep slopes, localised mass movement hazards and localised impermeable highly plastic subsoil.

### 2.6 Acid Sulfate Soils

A review of the ESPADE acid sulfate soil risk mapping indicated that the site is located within an area of 'no known occurrence of Acid Sulfate Soils'. This classification relates to sites where ASS or Potential ASS (PASS) conditions are not known or not likely to occur.

Review of the Section 10.7 (2) & (5) Planning Certificates identified that the land is not affected by a policy adopted by the council that restricts the development of the land because of the likelihood of acid sulphate soils.

[1] https://maps.six.nsw.gov.au/, accessed 16 November 2020
[2] Penrith 1:100 000 Geological Sheet 9030, 1st Edition, 1991, Geological Survey of NSW, Department of Planning Industry & Environment (DPIE 1991), accessed 16 November 2020
[3] *ESPADE 2.0*, NSW Office of Environment and Heritage, Accessed 15 May 2019, OEH (2017)

When considering the local topography, the site is located approximately between 45-55 m AHD. Further, no visual or olfactory indicators of ASS were observed during the current intrusive investigations. On this basis, no further consideration of requirements in relation to assessment and/or management of ASS is necessary with regard to the proposed development.

## 2.7 Hydrology

As discussed in **Section 2.2**, two unnamed ephemeral tributaries/drainage lines of Werrington Creek were located in the northern extent of the site oriented and flowing approximately southeast to northwest and east to west respectively. The drainage lines merge at a surface dam located adjoining the northwestern site boundary and flows into Werrington Creek approximately 900m to the northwest of the site which in turn flows into South Creek approximately 2.4 km to the northeast of the site.

As discussed in **Section 2.2**, the southern portion of the site is predominantly sealed with asphaltic hardstands and building footprints with some landscaped areas. As such, surface water generated in these areas during periods of rainfall is anticipated to migrate from the site via surface water flow entering the local stormwater catchment system with subsurface infiltration and seepage.

The northern extent of the site is unsealed. Given the expected shallow clay soil and shale characteristics, infiltration into the local, shallow groundwater table is expected to be limited. During periods of heavy rainfall, excess surface waters are expected to flow overland into the onsite surface water bodies, or infiltrate into the shallow groundwater.

A review of the Section 10.7(2) and (5) Certificates (**Section 3.4**) indicated that all or part of the site is subject to flood related development controls. The Section 10.7(5) certificates note that:

- Development on the land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) (if such uses are permissible on the land) is subject to flood related development controls.
- Development on the land or part of the land for industrial or commercial purposes (if such uses are permissible on the land) is subject to flood related development controls. Development on the land or part of the land for purposes other than industrial or commercial, or for purposes other than those referred to above, will be considered on a merits based approach and flood related development controls may apply.

## 2.8 Hydrogeology

A search for registered groundwater bore information, undertaken on the Water NSW website[4] indicated thirteen groundwater bores were located within a 1500 m radius of the site and are summarised in **Table 2.2** below. Summary pages of groundwater bore information provided by Water NSW is presented in **Appendix C**.

[4] http://allwaterdata.water.nsw.gov.au/water.stm accessed 16 November 2020.

**Table 2.1: Groundwater Bore Summary Details**

| Bore ID | Location | Intended Purpose | Depth (m bgs) | SWL (m bgs) | Lithological Summary |
|---|---|---|---|---|---|
| GW019680 | 0.42 m north of site | Waste Disposal | 53.3 | - | 0 – 16.1 m – Clay<br>16.1 – 53.3 m – Shale |
| GW020069 | 0.42 m north of site | Waste Disposal | 75.6 | - | 0 – 8.3 m – Clay<br>8.3 – 75.6 m – Shale |
| GW020547 | 0.43 m north of site | Waste Disposal | 91.4 | - | 0 – 0.9 – Top Soil<br>0.9 – 9.1 m – Clay<br>9.1 – 91.4 m – Shale |
| GW060794 | 1.6 km south west of site | Stock, Domestic | 78.1 | - | 0 – 6.2 m – Clay<br>6.2 – 78.1 m – Slate |
| GW103764 | 1.6 km south west of site | Irrigation | 231.6 | - | 0 – 0.6 – Top Soil<br>0.6 – 6.4 m – Clay<br>6.4 – 123.4 m – Shale<br>123.4 – 216.4 – Sandstone<br>216.4 – 217.3 – Shale<br>217.3 – 231.6 – Sandstone |
| GW112643 | 1.6 km east of site | Monitoring Bore | 6.0 | - | 0 – 1.0 – Fill<br>1.0 – 3.0 m – Sand<br>3.0 – 6.0 m – Clay |
| GW112644 | 1.6 km east of site | Monitoring Bore | 6.0 | - | 0 – 1.0 – Fill<br>1.0 – 3.0 m – Sand<br>3.0 – 6.0 m – Clay |
| GW112645 | 1.6 km east of site | Monitoring Bore | 6.0 | - | 0 – 1.0 – Fill<br>1.0 – 3.0 m – Sand<br>3.0 – 6.0 m – Clay |
| GW0113279 | 1.5 km west of site | Monitoring Bore | 7.5 | - | |
| GW113280 | 1.5 km west of site | Monitoring Bore | 8.2 | - | - |
| GW113281 | 1.5 km west of site | Monitoring Bore | 2.85 | - | - |
| GW113282 | 1.5 km west of site | Monitoring Bore | 7.0 | - | - |
| GW113283 | 1.5 km west of site | Monitoring Bore | 2.8 | - | - |

## 2.9 Meteorology

A review of average climatic data for the nearest Bureau of Meteorology monitoring location (Penrith Lakes AWS[5]) indicates the site is located within the following meteorological setting:

- Average minimum temperatures vary from 5.3 ˚C in July to 18.7 ˚C in January;
- Average maximum temperatures vary from 18.0 ˚C in July to 31.2 ˚C in January;
- The average annual rainfall is approximately 705.4 mm with rainfall greater than 1 mm occurring on an average of 70.9 days per years; and
- Monthly rainfall varies from 29.8 mm in August to 122.6 mm in February, with the wettest period from November to March.

[5] http://www.bom.gov.au/climate/averages/tables/cw_067113.shtml, Commonwealth of Australia, 2020 Bureau of Meteorology, Product IDCJCM0028 Prepared at Thu 26 Nov 2020 and accessed by JBS&G on 2 December 2020.

# 3. Summary Site History

## 3.1 Aerial Photographs

Aerial photographs from 1943, 1956, 1961, 1970, 1984, 1991, 2002, 2010 and 2020, obtained from the NSW Spatial Services were reviewed. These have been included in **Appendix D**. A summary of the findings is presented below:

1943 The site comprised an undeveloped parcel of rural land which was mostly cleared and may have been used for grazing purposes. A residential dwelling was located in the central southern portion of the site with an adjacent area to the east of the dwelling possibly fenced for animal grazing or similar.
Great Western Highway and O'Connell Street were observed in their current alignment. The surrounding areas comprised scattered rural residential properties. Two large rectangular buildings were observed to the northwest of the site. What appeared to be orchards were visble to the south and east of the site, with the remainder of the surrounding land mostly cleared and potentially used for livestock grazing. A small surface water dam was adjacent to the western boundary of the northern extent of the site.

1956 The site remained generally unchanged from the 1943 aerial photograph. The fenced area adjacent the residential dwelliong appears to have been developed as an orchard. Drainage lines were apparent within the northern portion of the site consistent with the present day alignment. An unsealed access road/track was observed leading from the farmhouse to the northwest towards Great Western Highway.
Land to the northwest, near the corner of Great Western Highway and O'Connell Street had been developed for rural residential purposes.Land to the east and south had been developed further as orchards or market gardening An area of cleared ground or ground disturbance was visible to the north of the site site on the northern side of Great Western Highway.

1961 Three small structures, potentially a residential and sheds, were observed in the western portion of the site, whilst another structure, potentially a shed, was visible in the central eastern portion of the site. An unsealed access road/track was observed leading from the northeastern structure to the north towards Great Western Highway. Land to the north and south of the shed appeared to be used for market gardening.
Further development of land for rural residential purposes was visible to the northwest of the site at the corner of Great Western Highway and O'Connell Street, with land clearing visible to the west of O'Connell Street.

1970 Most of the site appeared to be used for market gardening.
The surface water dam north west of the site had been expanded with two large rectangular sheds constructed south of the dam. The area adjacent to the sheds appeared to be used for market gardening. Several access roads were observed within mostly cleared vacant land to the northwest, with a rural residential building visible in the western extent of this cleared land, on the eastern side of O'Connell Street.

1984 The previous site structures had been demolished and the site appeared to be vacant. Land to the north west of the site, west of O'Connell Street at the corner of Great Western Highway and O'Connell Street had been developed for residential purposes. There was considerably less land to the east and south of the site being used for market gardening.

1991 Construction of the TAFE Kingswood campus had commenced including within the western portion of the site and land north of the western portion of the site. Buildings B, C, D, E had been constructed. Additionally, four structures were located to the east of Building D and one structure was visible to the east of Building E. A structure, potentially a residential dwelling, and what appeared to be several small sheds and stored items

| | |
|---|---|
| | were observed in the eastern portion of the site with an unsealed access road/track leading north toward Great Western Highway.<br>The surface water dam located beyond the northwestern boundary of the site appeared to have been partially filled. Surrounding land remained largely changed from the 1984 aerial photograph. |
| 2002 | The structure observed to the east of Building E and the residential dwelling and sheds in the eastern portion of the site had been demolished. Buildings N, P and T and a car park in between these buildings had been constructed.<br>The surface water dam appeared to have been altered and consistent with its current configuration. WSU Werrington Campus Buildings were visible east of the site. |
| 2010 | The site and surrounding areas remained largely changed from the 2002 aerial photograph. |
| 2020 | Four buildings located to the east of Building D had been demolished.<br>Residential dwellings on land to the south had been demolished. Ground disturbance was observed on land north of the Great Western Highway. |

### 3.2 Historical Land Title Records

Historical title records obtained for Lot 1 in DP 866081 are included in **Appendix E**.

A review of historical title information indicate that various parts of the TAFE Kingswood Campus were owned by private citizens since 1903 with owner occupations including gardener, farmer, market gardener, farmer, welder, timber merchant, carpenter and labourer. Various parts were progressively acquired by the Minister for Education (for the purpose of the Technical and Further Education Act 1974) between 1974 and 1988.

### 3.3 EPA Records

Search of the NSW EPA database was undertaken on 2 December 2020 **(Appendix F)** for the site and immediate surroundings. The search consisted of the:

- NSW EPA Protection of the Environment Act public register of licence, applications and notices (maintained under Section 308 of the Protection of the Environment Operations Act 1997 (POEO Act));
- NSW EPA contaminated land public register of record of notices (under Section 58 of the Contaminated Land Management Act 1997 (CLM Act)); and
- NSW contaminated sites notified to the EPA (under Section 60 of the CLM Act).

No prevention, clean-up or prohibitions notices and no transfer, variation, suspension, surrender or revocation of an environment protection licence (EPL) has been issued under the POEO Act for the site. A POEO licence was issued to Western Sydney Automotives located at 107 – 121 Great Western Highway, Kingswood, NSW 2747 (approximately 1 km to the west of the site) for hazardous, industrial or Group A waste generation or storage in 2000 and is no longer in force.

No notices have been issued under the CLM Act for the site or the immediate surrounds.

The site or the immediate surrounds are not on the list of NSW contaminated sites notified to the EPA.

### 3.4 EPA Per- and Poly- Fluoroalkyl Substances (PFAS) Register

A search of the EPA's PFAS register indicated that there were no records pertaining to the site. A record of the search is presented in **Appendix G**.

### 3.5 NSW Fair Trading Loose Fill Asbestos Insulation Register

A search of the NSW Fair Trading loose fill asbestos insulation register indicated that there were no records pertaining to the site. A record of the search is presented in **Appendix H**.

### 3.6 Australian and NSW Heritage Register

A search of the Australian and NSW Heritage databases was undertaken on 2 December 2020 and records are included in **Appendix I**. The search identified no items of national heritage significance affecting the site. A heritage item was identified on the NSW Heritage database comprising a road milepost/milestone fronting Lot 1 DP 866081. From review of imagery provided on Google Earth Street View, the milestone is not located on the site.

### 3.7 Dangerous Goods Search

A dangerous goods licence search of the stored chemical information database of SafeWork NSW for the site was undertaken on 27 November 2020. The SafeWork NSW response was not available at the time of preparation of this report.

### 3.8 Section 10.7 (2) & (5) Planning Certificates

Copies of the Section 10.7 Planning Certificates (2) and (5) were obtained for the site from Penrith City Council and are included in **Appendix J**. The planning certificates included the following information:

- The land is subject to the requirements under the Penrith Local Environmental Plan 2010;
- The land is zoned SP2 Infrastructure – Educational Establishment;
- The land is not affected by the Coastal Protection Act 1979;
- The land is not identified as bush fire prone land;
- The land does not contain items of environmental heritage;
- The land does not comprise of critical habitat;
- The land is not within a conservation area;
- The land is not proclaimed to be a Mine Subsidence District;
- The land is not affected by any road widening/realignment under the Roads Act 1993;
- The land is subject to flood related development controls;
- The land is not identified as biodiversity certified land under Part 8 of the Biodiversity Conservation Act 2016;
- The land is not subject to any orders under Trees Act 2006;
- The residential dwelling on the land is not identified in the Loose-Fill Asbestos Insulation Register; and
- The land is not subject to any matters under the CLM Act 1997.

### 3.9 Integrity Assessment and Summary of Site History

From review of historical aerial photographs and land titles, it appears that the site has historically been used for rural residential and agricultural use including livestock grazing and market gardening prior to development as the TAFE Kingswood Campus.

Based on the range of sources and the general consistency of the historical information, it is considered that the historical assessment has an acceptable level of accuracy with respect to the potentially contaminating activities historically occurring at the site.

# 4. Assessment of Potential Contamination

## 4.1 Potential Areas of Environmental Concern Based on Current Site Conditions

Based on the history review and observations made during the JBS&G inspection of the site, areas of environmental concern have been identified and are presented in **Table 4.1**.

**Table 4.1: Areas of Environmental Concern (AECs) and Contaminants of Potential Concern (COPC)**

| Area of Environmental Concern (AEC) | Primary Contaminants of Potential Concern (COPC) |
|---|---|
| Imported and/or reworked fill materials used to create site levels (comprising material of unknown character and/or origin) | Heavy metals (As, Cr, Cd, Cu, Pb, Hg, Ni, Zn), total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs) and asbestos |
| Inappropriate demolition of former site structures | Heavy metals, PCBs, OCPs, asbestos |
| Former market garden use and associated application of pesticides | Heavy metals and OCPs |
| Natural material impacted as a result of migration of COPCs in overlying fill material. | Heavy Metals, PAHs, TRHs, BTEX, OCPs and PCBs |
| Groundwater | Heavy metals (As, Cr, Cd, Cu, Pb, Hg, Ni, Zn), TRH/BTEX, PAHs |

## 4.2 Potentially Contaminated Media

Potentially contaminated media comprise:

- Fill Materials;
- Underlying Natural Soil; and
- Groundwater

A review of site historical information indicates that activities at the site are unlikely to have involved significant contaminating uses. The review identified the site was historically used for grazing/agricultural use and potential for cut and fill activities to have occurred at the site during various stages of development. Additionally, the site historically contained some structures and as such, there is potential for fill material to be potentially impacted with hazardous building materials due to inappropriate demolition of these structures.

Based on the potential leachability of COPCs within the surface soils/fill materials, the risk of vertical migration of contamination from the surface soils/fill material into the underlying natural soils and groundwater is considered low given the low permeability of silty clay fill profile identified at the site. Further, a review of the site history did not identify point sources and/or liquid contaminants at the site that are likely to pose a significant risk for the migration of contamination to underlying natural materials and groundwater.

## 4.3 Potential for Migration

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

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

The potential contaminants of concern identified as part of the site history review and site inspection are generally in solid form (e.g. heavy metals, asbestos, etc).

As discussed in **Section 2**, ground surfaces are a combination of sealed asphaltic pavements/building footprints and grassed areas. Therefore, there is limited potential for migration of solid contaminants from the site via windblown dust. As such, this is not considered to be a complete exposure pathway.

Surface water is expected to primarily leave the site via local stormwater catchment system, and infiltration of water into underlying soils is possible within the landscaped areas in the southern extent and northern extent which is grassed. Therefore, infiltration of water-soluble contaminants into the groundwater is considered be a potential offsite migration pathway. The potential migration of liquid and/or volatile contaminants through the subsurface is low given the absence of potential liquid/volatile contaminant sources at the site.

There is potential for contaminants to migrate through the soil and into groundwater. Identified COPC were likely present as solids, contaminants adsorbed to or present in fill, or had been potentially applied in liquid form, such as metals, hydrocarbons or pesticides. It is considered that metals, hydrocarbons or pesticides would typically be applied in a liquid (water base) form, which upon drying would typically leave COPC in a dry form that would be expected to adsorb to soil particles. Based on the type of COPC and the anticipated depth to groundwater it is considered that the potential for sub-surface migration processes are low.

Due to large areas of vegetation coverings, the potential for contaminants to migrate via surface water runoff from the site is considered be low, with the exception of paved areas in the southern extent of the site and it is anticipated runoff from those areas will be collected or absorbed into the unsealed areas of the site. There is also potential for contaminants to migrate from areas of bare ground, although limited, particularly during heavy rainfall events, which lead to surface water runoff via overland flow.

### 4.4 Potential Exposure Pathways

Potential human receptors of environmental impact include future site users (student, staff), visitors and construction/maintenance contractors engaged to work at the site who may potentially be exposed to COPCs through inhalation, direct contact and/or ingestion of impacted soils.

Exposure to windblown dusts may pose a potential risk to sensitive human receptors, however these are presently considered unlikely given the predominantly paved/vegetated site surfaces.

During redevelopment of the site, potential human receptors will include:

- Inhalation of potential COPC in dust generated from fill material of unknown origins; and/ or
- Potential dermal and oral contact to impacted soils as present at shallow depths and/ or accessible by future service excavations across the extent of the site; and/ or
- Surface water runoff.

The site contains areas covered by vegetation, presenting ongoing potential ecological receptors, although no vegetation stress relating to potential contamination from known AECs was observed during site inspection. Flora on site are potential receptors of shallow soil contamination if present. Possible off-site ecological receptors include potential surface water receptors (i.e. Werrington Creek approximately 900m to the northwest of the site).

# 5. Sampling and Analysis Plan

## 5.1 Data Quality Objectives

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

### 5.1.1 State the Problem

The site is proposed to be redeveloped for tertiary education purposes. As such, a PSI with limited sampling was required to characterise potential contamination at the site and to draw conclusions regarding the continued use of the land for commercial / industrial land use, or make recommendations to enable such conclusions for the site.

### 5.1.2 Identify the Decision

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

- Were there any unacceptable risks to likely future onsite receptors?
- Were there any issues relating to the local area background soil concentrations that exceed appropriate soil criteria?
- Were there any impacts of chemical mixtures?
- Were there any aesthetic issues present at the site?
- Was there any evidence of, or potential for, migration of contaminants from the site?
- Is a site management strategy required?

### 5.1.3 Identify Inputs to the Decision

Inputs to the decision are:

- Historical site information and inspection of the site to identify and/or confirm potential AECs and COPCs at the site;
- The collection and interpretation of environmental data through collection and analysis of limited soil and groundwater samples;
- Laboratory analysis of samples of potentially contaminated media for COPC; and
- Confirmation that data generated by sample analyses were of sufficient quality to allow reliable comparison to assessment criteria as undertaken by assessment of quality assurance / quality control (QA/QC).

### 5.1.4 Define the Study Boundaries

The study boundaries are limited to cadastral site boundaries as shown on **Figure 2**.

The vertical extent of the soil investigation was to a maximum depth of 2.8 m bgs, the depth of the deepest soil sample collected, and 8.5 m bgs for groundwater.

Due to the project objectives, seasonality was not assessed as part of this investigation. Data are therefore representative of the timing and duration of the current investigation.

[6] *Contaminated Land Management. Guidelines for the NSW Site Auditor Scheme (3rd Edition).* NSW EPA October 2017 (EPA 2017)

### 5.1.5 Develop a Decision Rule

Soil analytical data was assessed against EPA endorsed criteria including the National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No.1), National Environment Protection Council (NEPC 2013).

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

**Table 5.1: Summary of Decision Rules**

| Decision Required to be Made | Decision Rule |
|---|---|
| 1. Were there any potentially unacceptable risks to onsite future receptors? | a) Soil analytical data was compared against EPA endorsed criteria. Statistical analyses of the data in accordance with relevant guidance documents was undertaken, if appropriate, to facilitate the decisions. The following statistical criteria was adopted with respect to soils: Either: the reported concentrations were all below the site criteria; Or: the 95% upper confidence limit (UCL) of the average concentration for each analyte was below the adopted site criterion; no single analyte concentration exceeded 250% of the adopted site criterion; and the standard deviation of the results was less than 50% of the site criterion. If the statistical criteria stated above was satisfied, the decision was No. If the statistical criteria were not satisfied, the decision was Yes. |
| | b) Groundwater analytical data was compared against EPA endorsed criteria. If the reported concentrations were all below the Site Criteria, the answer to the decision was No; If analytical concentrations were in excess of the Site criteria, further consideration of potential risks would be required to establish whether the results are indicative of background conditions. If this is not the case, then the answer to the decision is Yes. |
| 2. Were there any issues relating to the local area background soil concentrations that exceed appropriate soil criteria? | If surface soils concentrations exceeded background concentrations, the decision was Yes. Otherwise, the decision was No. |
| 3. Were there any chemical mixtures? | Were there more than one group of contaminants present which increase the risk of harm? If there was, the decision was Yes. Otherwise, the decision was No. |
| 4. Were there any aesthetic issues? | If there were any unacceptable odours or soil discolouration, or large quantities of non-hazardous inert material, the decision was Yes. Otherwise, the decision was No. |
| 5. Was there any evidence of, or potential for, migration of contaminants from the site? | Were the contaminant concentrations and contaminant types expected to impact groundwater based on assessment of data against ecological investigation levels? If yes, the decision was Yes. Otherwise, the decision was No. |
| 6. Are there any unacceptable risks to likely future onsite receptors from hazardous materials that may be present within the structures on the site? | Are any future on-site receptors likely to be exposed to hazardous material present? If yes, the decision is Yes. Otherwise, the decision is No |
| 7. Is a management strategy required? | If the answer to and of Decisions 1 to 6 was Yes, then the decision is Yes. Otherwise, the decision is No |

### 5.1.6 Specify Limits of Decision Error

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

Specific limits for this project have been adopted in accordance with the appropriate guidance from the NSW EPA, NEPC 2013 appropriate indicators of data quality (DQIs used to assess quality assurance / quality control) and standard JBS&G procedures for field sampling and handling.

To assess the usability of the data prior to making decisions, the data will be assessed against pre-determined Data Quality Indicators (DQIs) established for the project as discussed below in relation to precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS parameters). The acceptable limit on decision error is 95% compliance with DQIs.

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

- Precision - measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples.
- Accuracy - 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 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; ensuring analysing laboratories use consistent analysis techniques and reporting methods.
- Completeness – is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.
- Sensitivity – expresses the adopted soil analytical methods provided suitable limits of reporting (LORs) with respect to the adopted site assessment criteria.

**Table 5.2: Summary of Quality Assurance / Quality Control Program**

| Data Quality Indicators | Frequency | Data Quality Criteria |
|---|---|---|
| **Precision** | | |
| Blind duplicates (intra laboratory) | 1 / 20 samples | <50% RPD |
| Blind duplicates (inter laboratory) | 1 / 20 samples | <50% RPD |
| Laboratory Duplicates | 1 / 20 samples | <50% RPD |
| **Accuracy** | | |
| Surrogate spikes | All organic samples | 70-130% |
| Laboratory control samples | 1 per lab batch | 70-130% |
| Matrix spikes | 1 per lab batch | 70-130% |
| **Representativeness** | | |
| Sampling appropriate for media and analytes | All samples | - |
| Samples extracted and analysed within holding times. | - | organics (14 days), inorganics (6 months) |
| Trip spike | 1 per sampling event | 70-130% recovery |
| Trip blank | 1 per sampling event | <LOR |
| Rinsate blank | 1 per sampling event when non-disposable sampling equipment used/media | <LOR |
| **Comparability** | | |
| Standard operating procedures for sample collection & handling | All Samples | All samples |
| Standard analytical methods used for all analyses | All Samples | All samples |
| Consistent field conditions, sampling staff and laboratory analysis | All Samples | All samples |
| Limits of reporting appropriate and consistent | All Samples | All samples |
| **Completeness** | | |
| Sample description and COCs completed and appropriate | All Samples | All samples |
| Appropriate documentation | All Samples | All samples |
| Satisfactory frequency and result for QC samples | All QA/QC samples | - |
| Data from critical samples is considered valid | - | Critical samples valid |
| **Sensitivity** | | |
| Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria | All Analytes | All limits of reporting were less than the adopted site assessment criteria. |

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

### 5.1.7 Optimise the Design for Obtaining Data

The NSW EPA sampling design guidelines (EPA 1995) does not provide specific guidance on the sampling density for sites larger than 5 ha, rather it recommends a stratified sampling approach based on consideration of the potential for contamination based on an understanding of potential AECs. However, given the preliminary nature of this investigation, and based on the requirement to co-locate contamination samples within geotechnical boreholes, therefore, limited sampling from six borehole locations (BH01-BH04, BH09 and BH10) advanced during the geotechnical investigation together with four hand auger locations (HA01-HA04) advanced by JBS&G via hand tools was undertaken.

Based upon the objectives of this preliminary investigation and the available historical site use information, the adopted sampling density was considered appropriate.

## 5.2 Soil Sampling Methodology

Intrusive soil sampling via boreholes was undertaken using a drill rig with solid flight auger in conjunction with the geotechnical site investigation. Soil samples were collected by JBS&G generally

from surface at 0-0.15 m, 0.3 m, 0.5 m and then at 0.5 m intervals to a maximum depth of 3 m or 0.5 m into natural materials (or prior refusal), whichever was the shallower.

Intrusive soil sampling via hand augers was undertaken by JBS&G in unpaved and accessible areas of the site. Samples were collected from surface at 0-0.15 m, 0.3 m, 0.5 m and then at 0.5 m intervals to a maximum depth of 1 m or 0.5 m into natural materials (or prior refusal), whichever was the shallower

Soil sampling locations are shown on **Figures 3**.

During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indicators of contamination were noted on investigation logs presented in **Appendix K**. A calibrated PID was utilised to screen for volatile organic compounds (VOCs) within the sampled material. Calibration records are presented in **Appendix L**.

Soil samples for the contamination assessment were collected using a fresh, dedicated pair of nitrile gloves and immediately transferred to laboratory supplied sample jars and bags. The sample containers were then transferred to a chilled esky for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form was completed and forwarded with the samples to the testing laboratory.

Based upon field observations, samples were analysed in accordance with the analytical schedule detailed in **Table 5.3**.

### 5.3 Groundwater Sampling Methodology

One groundwater well was installed at BH01 to a depth of 8.5 m bgs during the geotechnical investigation. The well was constructed from 50 mm unplasticised polyvinyl chloride (uPVC) screen and casing, combined with a lockable cap and completed as road box. The screen was installed such that the encountered water level was within the screened interval, allowing for the detection of Light Non-Aqueous Phase Liquids (LNAPLs), if present.

The well annulus was backfilled with a graded (2mm) sand to construct a 'filter pack' to limit soil clogging the well screen. A bentonite seal was installed above the screened interval to reduce the potential for surface water, perched water and/or liquid phase contaminants to enter the well from outside the screened interval.

After installation, the monitoring well was developed by PSM to remove excess silt and sediment resultant from the installation process. The well was then allowed to settle for a week prior to sampling.

The groundwater monitoring well was gauged with an oil/water Interface Probe (IP) which can detect Non-Aqueous Phase Liquids (NAPLs). The groundwater at each well was then purged with a Micropurge pump using a low flow sampling technique, fresh disposable Low Density Poly-ethylene (LDPE) tubing, to remove the standing water. During removal, physicochemical parameters (pH, electrical conductivity, dissolved oxygen, reduction-oxidation potential and temperature) were monitored until stabilisation. Groundwater samples were recovered after parameter stabilisation had occurred.

Collected groundwater samples were immediately filtered (as necessary) and transferred to laboratory supplied sample bottles. The sample containers were then transferred to a chilled iced box for sample preservation prior to and during shipment to the testing laboratory. A chain of custody form was completed and forwarded with the samples. Samples were analysed in accordance with the laboratory schedule (**Table 5.3**).

### 5.4 Decontamination

Samples were collected directly from the auger during borehole sampling. The hand auger and trowel were decontaminated between sampling locations by removing excess dirt using a brush,

rinsing in a mixture of phosphate-free detergent, followed by rinsing with potable water. A pair of new nitrile gloves were worn for collection of each new sample.

Groundwater samples were collected using disposable sampling equipment which was disposed of after use.

### 5.5 Laboratory Analysis

JBS&G contracted Eurofins Environment Testing (Eurofins) and Envirolab Services Pty Ltd (Envirolab) for all laboratory analysis of samples. Both laboratories are National Association of Testing Authorities (NATA) registered for the required analyses. In addition, the laboratories are required to meet JBS&G's internal QA/QC requirements.

The completed analysis schedule is summarised in **Table 5.3**.

**Table 5.3 Analytical Schedule**

| Sample Type | No. of Sampling Locations | Analyses (exc. QA/QC) |
|---|---|---|
| Soil | 10 sample locations | Heavy Metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) – 15 samples<br>PAHs – 15 samples<br>TRH/BTEX –15 samples<br>OCP/PCB – 15 samples<br>Asbestos – 10 soil samples (500 mL) + plus visual inspection<br>Total organic carbon (TOC), Fe, Cation Exchange Capacity (CEC), % clay, pH – 2 samples |
| Groundwater | 1 monitoring well | Heavy Metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) – 1 sample<br>PAHs (low level) – 1 sample<br>TRH/BTEX – 1 sample |

In addition to the above analyses, for QA/QC purposes field duplicates and triplicates were analysed at a rate of 1/20 primary soil samples. A rinsate samples was obtained from non-disposable sampling equipment, plus a single trip spike and single trip blank accompanied each sample batch.

# 6. Assessment Criteria

## 6.1 Regulatory Guidelines

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

- *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)*, National Environment Protection Council (NEPC 2013);
- *Contaminated Sites: Sampling Design Guidelines*, NSW EPA, 1995 (EPA 1995);
- *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia. Available at www.waterquality.gov.au/anz-guidelines (ANZG 2018);
- *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme*, 3rd Edition, NSW EPA, 2017 (EPA 2017);
- *Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination*, NSW DEC, March 2007 (DEC 2007);
- *National Water Quality Management Strategy – Australian Drinking Water Guidelines 6 2011*, National Health and Medical Research Council, Updated August 2018, (NHMRC 2018);
- *Guidelines for Managing Risks in Recreational Water*, NHMRC, 2008 (NHMRC 2008);
- *Contaminated Sites: Guidelines on Duty to Report Contamination under the Contaminated Land Management Act 1997*, NSW EPA, September 2015 (EPA 2015); and
- *Consultants Reporting on Contaminated Land*, NSW EPA, April 2020 (EPA 2020).

## 6.2 Soil Assessment Criteria Selection

As per the decision process for assessment of urban development site (EPA 2017), a set of health and ecological assessment thresholds derived from NEPC (2013) was used for evaluation of site contamination data collected for this assessment. The site requires assessment for future use as a tertiary educational facility. Based on consideration of typical uses, and NEPC (2013), the data has been assessed against criteria for commercial/industrial land use. Aesthetics were also considered in the assessment of site suitability consistent with EPA (2017) and NEPC (2013).

The site assessment criteria are presented on **Table A** and summarised below.

*Health Based Criteria:*

- Table 1A(1) 'Health Investigation Levels for Soil contaminants' (HIL D); and
- Table 1A(3) Soil HSLs for Vapour Intrusion (HSL D).

Where laboratory results provided concentrations of contaminant groups (i.e. total chromium) for which assessment criteria refer to specific contaminants within the group, the lowest specific contaminant criteria were adopted for initial screening purposes. Total chromium was compared against the chromium (valence state 6) criterion of 500 mg/kg.

*Ecological Screening Levels:*

Ecological Screening Levels (ESLs) for the site were obtained from Table 1B(6) 'ESLs for TPH Fractions F1-F4, BTEX and Benzo(a)pyrene in Soil' under the 'commercial/industrial' land use scenario.

*Site Specific Ecological Investigation Levels:*

Site specific EILs were derived in accordance with the methodology outlined within NEPC (2013), using average physical parameters calculated from analytical data obtained from site soil samples for the site as follows:

- CEC – 22 meq/100g
- pH – 6.8 pH units
- % Clay – 11%

*Management Limits:*

Management limits for consideration of the formation of Light Non-Aqueous Phase Liquids (LNAPLs), fire and explosive hazards, and effects on buried infrastructure have been obtained from Table 1B(7) 'Management Limits for TPH Fractions F1-F4 in Soil' under the 'commercial/industrial' land use scenario. Based on site observations discussed in **Section 8.1**, a fine soil texture was adopted for comparison of results as the most conservative option based on observed site characteristics.

### 6.3 Waste Classification for Off-site Disposal

Waste classification will be carried out in accordance with the Waste Classification Guidelines (EPA 2014). Initially, the soils will be assessed against the special waste criteria, primarily for the presence of asbestos then, where soils are not pre-classified, comparison of initial total soil chemical analytical data will be undertaken to classify waste by chemical assessment without the TCLP testing. The following initial screening criteria will be used. Maximum values of specific contaminant concentrations (SCC) for classification without TCLP:

- Below Contaminant Threshold 1 (CT1) – General Solid Waste (GSW);
- Above CT1 and below Contaminant Threshold 2 (CT2) – Restricted Solid Waste (RSW); and
- Above CT2 – Hazardous Solid Waste.

Where soil sample analytical results indicated that contaminants are present at concentrations above either CT1 or CT2 thresholds, representative TCLP analysis may be undertaken to facilitate comparison of SCC together with leachable concentrations. Maximum values for leachable concentration and SCC when used together:

- Below SCC1 and TCLP1 – General Solid Waste (GSW);
- Above SCC1 and/or TCLP1 and below SCC2 and TCLP2 – Restricted Solid Waste (RSW); and
- Above either SCC2 and/or TCLP2 – Hazardous Solid Waste

### 6.4 Groundwater Investigation Levels

DEC (2007) instructs that groundwater investigation levels (GILs) be based on a consideration of groundwater's environmental values. Environmental values are defined in ANZG (2018) as "...particular values or uses of the environment that are important for a healthy ecosystem or for public benefit, health, safety or welfare which require protection from the effects of stressors".

NEPC (2013) presents six environmental values which are required to be considered in the assessment of contaminated groundwater including:

- Aquatic ecosystems;
- Aquaculture and human consumers of food;
- Agricultural water;
- Recreation and aesthetics;

- Drinking water; and
- Industrial water.

Current and projected contaminant concentrations in groundwater are required to be compared to the GILs at the points of existing and realistic future use for each relevant environmental value.

Beneficial reuse of groundwater is considered unlikely, however, as a conservative guideline, the health and aesthetics based Australian Drinking Water Guidelines (NHMRC 2018) for drinking water were adopted for the purposes of the assessment. In addition, conservative screening criteria, for the assessment of risk to construction/maintenance workers as a result of short term work involving interaction with groundwater at the site, has been adopted as 10 times the health values for Drinking Water published in (NHMRC 2018).

To assess the potential risk of contaminated groundwater migrating from the site to Werrington Creek, reference has been made to the ANZG (2018) default trigger values for 95 % protection of species. Where no high reliability values have been specified, low reliability and/or screening level values have been utilised for the purpose of site assessment and screening.

Groundwater analytical data for this assessment has also been compared against NEPC (2013) groundwater HSLs for vapour intrusion for commercial/industrial land use for clay soils.

# 7. Quality Assurance and Quality Control

## 7.1 QA / QC Results

The QA/QC results for soil samples collected at the site are summarised in **Table 7.1** and discussed in **Section 7.2** below. Detailed QA/QC results are included in the laboratory reports in **Appendix N** and QA/QC summary tables in **Appendix M**.

**Table 7.1: Data Quality Indicator Assessment**

| Data Quality Indicator | Results | DQO met? |
|---|---|---|
| **Precision** | | |
| Soil blind duplicates (intra laboratory) | Chemical samples 0-26% RPD<br>Asbestos non-detection agreement with primary sample<br>Soil duplicates were analysed at a rate greater than 1 in 20 samples. | Yes |
| Soil split duplicates (inter laboratory) | Chemical samples 0-33 % RPD<br>Asbestos non-detection agreement with primary sample<br>Soil duplicates were analysed at a rate greater than 1 in 20 samples. | Yes |
| Groundwater duplicates | Non collected | Partial[1] |
| Laboratory Duplicates | 0-200 % RPD | Partial[1] |
| **Accuracy** | | |
| Surrogate spikes | 70-138% recovery | Partial[1] |
| Laboratory control samples | 70-130% recovery | Yes |
| Matrix spikes | 70-130% recovery | Yes |
| **Representativeness** | | |
| Samples extracted and analysed within holding times. | All primary and duplicate samples were extracted and analysed within the nominated holding times. | Yes |
| Trip spike | 70-130 % recovery | Yes |
| Trip blank | <LOR | Yes |
| Field/Rinsate blanks | N/A | Yes |
| Standard operating procedures for sample collection & handling | Field scientist used the same standard operating procedures throughout works. | Yes |
| **Comparability** | | |
| Standard analytical methods used for all analyses | Standard analytical methods used. | Yes |
| Consistent field conditions, sampling staff and laboratory analysis | Standard operating procedures were conducted throughout the works. Field conditions remained the same throughout the works. The primary and secondary labs remained consistent throughout the investigation. | Yes |
| Limits of reporting appropriate and consistent | Soil limits of reporting were consistent and appropriate. | Yes |
| **Completeness** | | |
| Soil description and COCs completed and appropriate | All bore logs and COCs were completed appropriately. | Yes |
| Appropriate documentation | All appropriate field documentation is included in the Appendices. | Yes |
| Satisfactory frequency and result for QC samples | The QC results are considered adequate for the purposes of the investigation. | Yes |
| Data from critical samples | Samples were analysed at locations were potential for contamination was observed. | Yes |
| **Sensitivity** | | |
| Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria | Analytical methods and limits of recovery were considered appropriate for media and adopted site assessment criteria for all soil analytes. | Yes |

Notes:
1. See discussion of DQI exceedances in **Section 7.2.**

## 7.2 QA/QC Discussion

### 7.2.1 Precision

Soil Duplicate (intra-laboratory) Samples

Intra-laboratory duplicates were analysed at a rate of 1 per 15 primary samples for heavy metals, TRH/BTEX, PAH, PCB, OCP and asbestos, which met the DQIs for soil sampling (1 in 20). RPDs were within the acceptance criteria.

Soil Triplicate (inter-laboratory) Samples

Inter-laboratory duplicates were analysed at a rate of 1 per 15 primary samples for heavy metals, TRH/BTEX, PAH, PCB, OCP and asbestos, which met the DQIs for soil sampling (1 in 20). RPDs were within the acceptance criteria.

Groundwater Duplicate Samples

Groundwater intra-laboratory and inter-laboratory duplicate samples were not collected given the small dataset and the preliminary nature of the investigation. The sampling undertaken is considered adequate for the project objectives.

Laboratory Duplicate

Laboratory duplicate soil samples were analysed by the testing laboratory at a rate greater than 1 per 20 primary soil samples. The results of analysis for the laboratory duplicate soil sample were generally within the laboratory acceptance criteria of 0-30 %, except for total organic carbon (200%). However, the laboratory reported that the elevated RPD was within the NATA accredited laboratory acceptance criteria.

On this basis the DQIs for precision are considered to have been achieved for this investigation, noting that total organic carbon concentrations are not used to assess potential site contamination.

### 7.2.2 Accuracy

Surrogate spike recoveries were generally within the DQI range of 70-130 % with the exception of surrogate 2-Fluorobiphenyl recovery in water sample BH01 (138%). However, the recovery percentage was within the NATA acceptance limits of 50-150 % for surrogate spike recoveries.

Laboratory control sample (LCS) recoveries were reported within the acceptable range of 70 – 130%.

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

### 7.2.3 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 selected soil samples was completed within the recommended holding times for all COPCs.

Trip Spike

A trip spike was submitted with each sampling event during the soil and groundwater investigation. The trip spike recoveries were within the JBS&G acceptable limit of 70%-130%.

Trip Blank

A trip blank was submitted with each sampling event during the soil and groundwater investigation. There were no reported concentrations of BTEX above the laboratory LOR, achieving the nominated DQIs.

Decontamination and Calibration

All field equipment was decontaminated and calibrated appropriately as per the procedure identified in **Section 5.2.1**. One rinsate blanks were collected for the hand auger soil sampling event. Analyte levels were all below laboratory LOR, indicating decontamination procedures were adequate.

Records of field calibration and decontamination are provided in **Appendix L**.

### 7.2.4 Comparability

Experienced JBS&G field scientists undertook all sampling in accordance with standard JBS&G sampling methods.

All field documentation was appropriately completed. The nominated laboratories undertook all analysis in accordance with the relevant NATA accredited methods.

### 7.2.5 Completeness

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

All field documentation was completed appropriately including test pit logs, COCs, daily field logs and calibration and decontamination sheets (PID).

### 7.2.6 Sensitivity

Laboratory analysis methods for all contaminants adopted during the investigation used limits of reporting significantly less than the site assessment criteria to ensure the contaminant concentrations could be confidently identified as being less than the adopted site assessment criteria.

## 7.3 QA/QC Assessment

The field sampling and handling procedures across the site produced QA/QC results which indicate that the investigation data collected is of an acceptable quality.

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 of this program were analysed.

On the basis of the results of the field and laboratory QA/QC program, the soil and groundwater data are of an acceptable quality upon which to draw conclusions regarding the environmental condition of the site.

# 8. Results

## 8.1 Soil Observations

Soil sampling was conducted between 17 and 19 November 2020 at the sample locations shown on **Figure 3**. Borehole logs are included in **Appendix K**. A summary of soil conditions present at the site is provided as follows. A total of four boreholes advanced via hand auger (HA01-HA04) and six boreholes (BH01-BH04, BH09 and BH10) advanced via mechanical drill rig were used for the purposes of soil sampling.

Fill material encountered at the site primarily comprised silty clay with a low proportion of gravels, and anthropogenic inclusions were generally not observed with the exception of ash and plastic observed in HA03. Natural material at the site typically comprised a grey/brown/red clay underlain by grey weathered shale.

No odours, staining or ACM was observed throughout the soil profile at any of the investigation locations. PID readings (0.1-22.9ppm) from sampled soils indicated no significant sources of hydrocarbon/VOC contamination existing within site soils. Groundwater seepage was not observed within the boreholes advanced during the soil investigation. Further, no indicators of potential acid sulphate soils were observed during intrusive works at the site.

## 8.2 Soil Analytical Results

Detailed laboratory reports and chain of custody documentation are provided in **Appendix N**. Summarised soil laboratory results are presented in **Table A** and discussed in the following sections.

### 8.2.1 Heavy Metals

Concentrations of heavy metals in all analysed samples were reported to be below the adopted site assessment criteria.

### 8.2.2 TRH and BTEX

Concentrations of TRH in all analysed samples were reported below the laboratory LOR and/or less than the adopted site assessment criteria. Concentrations of BTEX in all analysed samples were reported below the laboratory LOR.

### 8.2.3 PAHs

All carcinogenic PAHs as benzo(a)pyrene (B(a)P) TEQ and total PAH concentrations in samples selected for analysis were below the laboratory LOR.

### 8.2.4 OCPs

Concentrations of OCPs in all samples selected for analysis were reported below the laboratory LOR.

### 8.2.5 PCBs

Concentrations of PCBs in all samples selected for analysis were reported below the laboratory LOR.

### 8.2.6 Asbestos

Visible ACM was not observed during the current investigation. Asbestos in soil analysis results identified no concentrations above the adopted assessment criteria in soil samples submitted to the laboratory for analysis.

## 8.3 Preliminary In-Situ Waste Classification

Summarised soil analytical data for waste classification are presented in **Table B** and are discussed below. Detailed laboratory reports and chain of custody documentation are provided in **Appendix N**. Statistical Analyses for the data set are provided in **Appendix O**.

All COPC concentrations have been reported below CT1 – General Solid Waste (GSW) criteria with the exception of nickel concentration marginally exceeding CT1 criterion (40 mg/kg) in samples BH04 1.5-1.6 (41 mg/kg), BH09 0.5-0.6 (42 mg/kg) and HA01 0.5-0.6 (41 mg/kg). Statistical analysis was undertaken for the nickel data set available for the site, which identified maximum concentrations less than 250% of CT1, standard deviation less than half of CT1 and 95% UCL less than CT1.

On this basis, the preliminary classification of fill material on site is General Solid Waste (GSW) (non-putrescible) in accordance with the EPA Waste Classification Guidelines (EPA 2014).

### 8.4 Groundwater Field Observations

A groundwater monitoring event (GME) sampling the new well (BH01/MW01) was conducted on 26 November 2020. Groundwater monitoring well location is provided on **Figure 3**. Details of depths to groundwater and other geospatial characteristics are summarised in **Table 8.2** below. A summary of groundwater conditions encountered during the GME is presented in **Table 8.3** and **Table 8.4** below.

**Table 8.2 Groundwater Geospatial Details**

| Well Reference | Easting (MGA 56) | Northing (MGA 56) | Depth to Groundwater (m below top of casing) |
|---|---|---|---|
| BH01/MW01 | 290667.9 | 6261624 | 3.457 |

MGA coordinate and AHD values were provided by a registered surveyor, with the surveyor's report is provided as part of **Appendix J**.

**Table 8.3 Groundwater Field Physicochemical Parameters**

| Well Reference | Dissolved Oxygen (mg/L) | Electrical Conductivity (µS/cm) | pH (units) | Oxidation Reduction Potential (mV) | Temperature (°C) |
|---|---|---|---|---|---|
| BH01/MW01 | 1.13 | 7585 | 6.94 | -18.37 | 19.2 |

Review of the field parameters as presented above indicates that the groundwater is near neutral and mildly acidic, prevalent under oxidising conditions and characterised as saline.

**Table 8.4 Groundwater Observations**

| Well Reference | Odour | Sheen | Turbidity | Light non-aqueous phase liquid (LNAPL) |
|---|---|---|---|---|
| BH01/MW01 | No odour | No sheen | turbid | None observed |

### 8.5 Groundwater Analytical Results

Detailed laboratory reports and chain of custody documentation are provided in **Appendix N.** Summarised groundwater analytical data for COPCs are presented in **Table C** and discussed in the following sections.

#### 8.5.1 Metals

Heavy metal concentrations within the sample were all reported to be below the adopted site assessment criteria with the exception of the following:

- Copper concentration (0.004 mg/L) detected exceeding the ecological criterion (0.0014 mg/L); and
- Zinc concentration (0.14 mg/L) detected exceeding the ecological criterion (0.008 mg/L).

#### 8.5.2 TRH and BTEX

TRH compounds were reported less than site assessment criteria with the exception of the following:

- F2 (TRH>C10-C16 less naphthalene) concentration was detected at a concentration exceeding the drinking water criterion (0.09 mg/L); and
- TRH>C10-C40 Fraction (Total) concentration (0.83 mg/L) detected exceeding the drinking water criterion (0.09 mg/L).

BTEX concentrations were reported below the laboratory LOR.

### 8.5.3 Polycyclic Aromatic Hydrocarbons

PAH compound concentrations were all reported to be below the laboratory LORs and/or less than the adopted site criteria within the analysed samples.

# 9. Site Characterisation

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

## 9.1 Are there any unacceptable risks to future onsite receptors?

In reference to the decision rules developed in **Section 5.1.2**, the following sections discuss potential risks posed to future on-site receptors from impacted media present at the site.

Representative samples of soil analysed for identified contaminants of concern were reviewed against established site assessment criteria. No COPCs in soil characterisation samples were reported at concentrations exceeding the adopted health based and ecological criteria.

Comparison of analytical results with the adopted site assessment criteria has not identified the occurrence of groundwater impacts presenting a significant risk to future site users. The reported copper and zinc concentrations are considered to most likely reflect background conditions within the hydrogeological setting of the site given that there were no elevated levels of heavy metals within soil samples collected at the site. TRH fractions including F2 (TRH>C10-C16 less naphthalene) and TRH>C10-C40 Fraction (Total) were detected at concentrations exceeding the drinking water criteria. It is noted that drinking water criteria were adopted as a conservative guideline during the current investigation and beneficial reuse of groundwater at the site is unlikely given that the proposed development will include reticulated water supply. Further, groundwater was identified to be saline, consistent with the encountered geology and therefore not considered suitable as a drinking water source.

Therefore, the reported COPC concentrations in groundwater is not considered to represent an unacceptable risk to future on-site receptors.

## 9.2 Background Soil Concentrations

In-situ natural soils were sampled and analysed for heavy metals, PAHs, TRH, BTEX, OCPs and PCBs. Heavy metals concentrations were reported to be within background concentrations provided in Olszowy et. al. (1995) and were below the adopted site criteria. Other organic contaminants were detected below the laboratory LOR and/or the adopted site criteria.

## 9.3 Chemical Mixtures

There were no potential chemical mixtures identified during the investigation that may pose an unacceptable contamination risk at the site with respect to future site users.

## 9.4 Aesthetic Issues

No odours or staining associated with potential contamination were noted during the investigation works completed at the site, and no visible ACM was observed at the site surface or in soils at investigation locations.

Brick and concrete fragments observed within surface soil to the south of Block P, to the north and east of Building D, and adjacent to the drainage line in the northern portion of the site which could pose an aesthetic issue if exposed.

## 9.5 Potential Migration of Contaminants

Based on the conditions encountered during the soil investigation, the lack of significant COPC concentrations in soil samples, and findings of the preliminary groundwater assessment, COPC migration to groundwater or off-site migration of contamination via surface water/groundwater is considered to be low.

### 9.6 Site Management Strategy

Based on the scope of works completed, including a desktop review and limited intrusive investigations, and the limitations presented in **Section 11**, there are considered not to be any contamination conditions at the site that represent an unacceptable risk with respect to the proposed development works. On this basis, a long term contamination management strategy is not required for the site. Typical site management controls including protocols to manage unexpected finds should be implemented during any ground disturbance works associated with future site development to enable management of any unidentified contamination if encountered.

# 10. Conclusions and Recommendations

## 10.1 Conclusions

Based on the scope of work and subject to the limitations in **Section 11**, the following conclusions are made:

- The site history review identified that the site was historically used for rural residential and agricultural use including livestock grazing and market gardening prior to development as the TAFE Kingswood Campus with no significantly contaminating historical land uses identified.
- A search of the NSW EPA contaminated land register and NSW contaminated sites notified to the EPA did not identify any notices relating to the site, or any potential for migration of contamination to the site from adjacent properties.
- Based on review acid sulfate soil risk mapping, local topography and site observations, no further consideration of requirements in relation to assessment and/or management of ASS is necessary with regard to the proposed development.
- Concentrations of COPCs were not identified at levels posing an unacceptable risk to human/ecological receptors relating to the proposed development of the site.
- Brick and concrete fragments observed within surface soil to the south of Block P, to the north and east of Building D, and adjacent to the drainage line in the northern portion of the site which could pose an aesthetic issue if exposed.
- Based on the conditions encountered during the soil investigation and the lack of significant COPC concentrations in soil samples, and findings of the preliminary groundwater assessment, COPC migration to groundwater or off-site migration of contamination via surface water/groundwater is considered to be low.
- The risk from contamination at the site is low. However, fill is present at the site, and given the limited nature of intrusive investigations, implementation of an appropriate unexpected finds protocol for future development works would enable management of any unidentified contamination, if encountered.

## 10.2 Recommendations

Typical site management controls including protocols to manage unexpected finds should be implemented during any ground disturbance works associated with future site development.

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

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

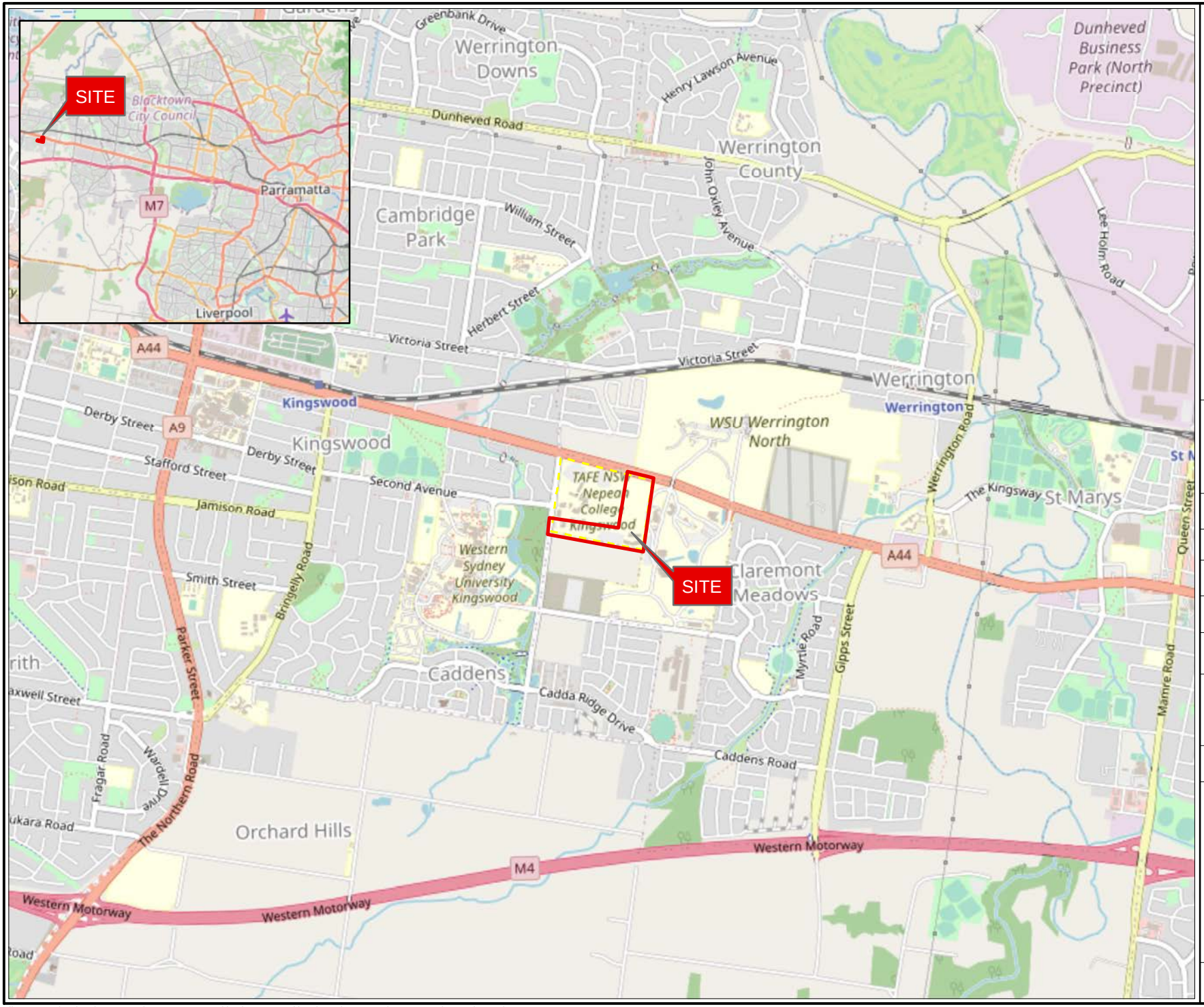
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the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

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

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

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

## Figures




**Legend:**

- Approximate Site Boundary
- TAFE Kingswood Boundary

JBS&G

| | |
|---|---|
| Job No: 59831 | |
| Client: TAFE NSW | |
| Version: R01 Rev A | Date 11/11/2020 |
| Drawn By: AS | Checked By: SG |

Scale 1:30,000

0 500 1,000

metres

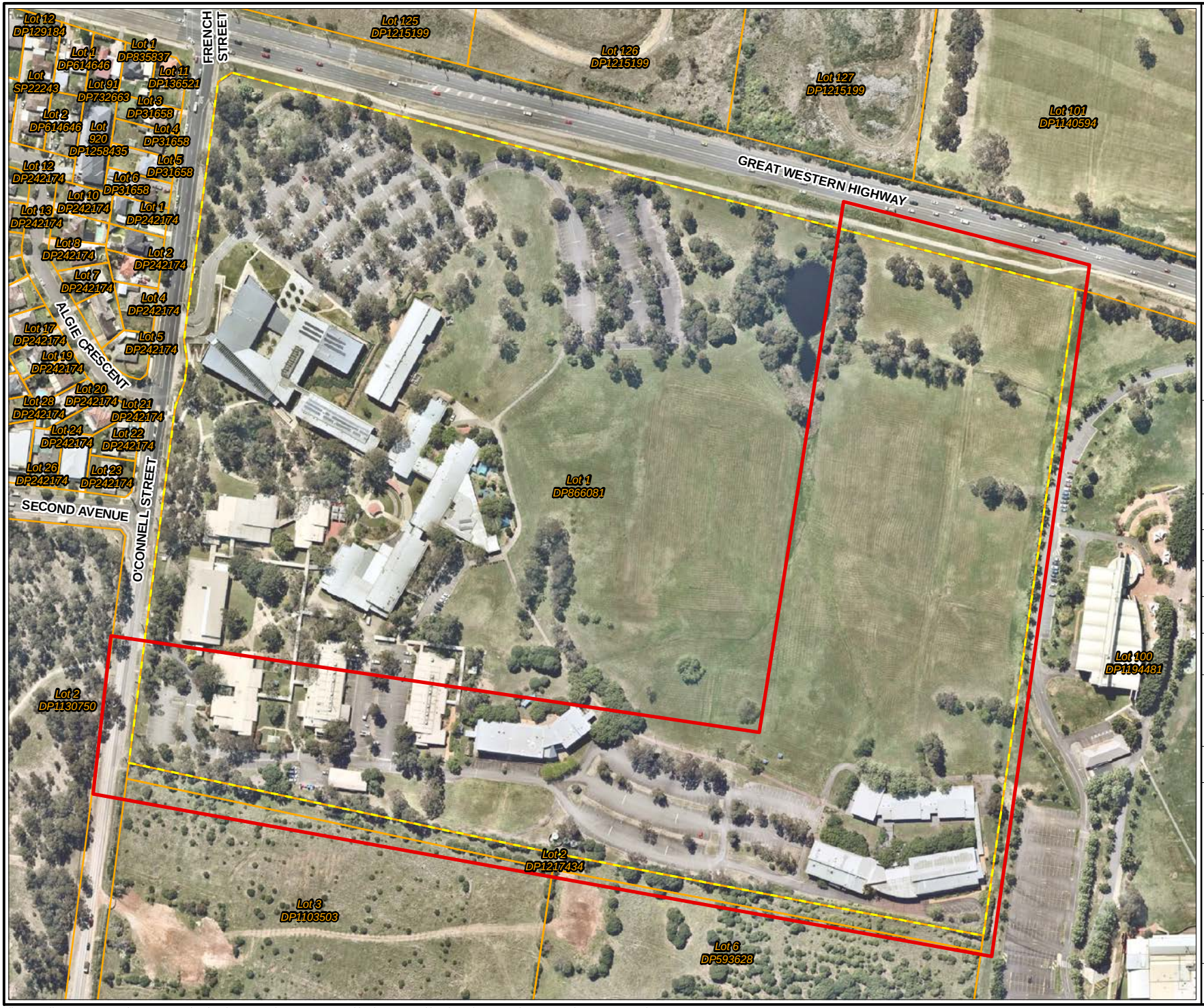
Coord. Sys. GDA 1994 MGA Zone 56

**2-44 O'Connell Street, Kingswood NSW**

**SITE LOCATION**

**FIGURE 1**

File Name: N:\Projects\TAFE NSW\59831 WSCH combined DSI Geotech\GIS\Maps\R01 Rev A\59831_01_SiteLocation.mxd




**Legend:**

- Approximate Site Boundary
- TAFE Kingswood Boundary
- NSW Cadastre (DFSI, 2020)

JBS&G

| | |
|---|---|
| Job No: 59831 | |
| Client: TAFE NSW | |
| Version: R01 Rev A | Date 11/11/2020 |
| Drawn By: AS | Checked By: SG |
| Scale 1:3,200 | |

0 50 100
metres

Coord. Sys. GDA 1994 MGA Zone 56

**2-44 O'Connell Street, Kingswood NSW**

**SITE LAYOUT**

**FIGURE 2**

File Name: \\JBSG-NSW-FS01\Company Data\Projects\TAFE NSW\59831 WSCH combined DSI Geotech\GIS\Maps\R01 Rev A\59831_02_SiteLayout_AS.mxd
Reference: www.nearmap.com - Imagery 01-10-2020


**Legend:**

- Approximate Site Boundary
- TAFE Kingswood Boundary

**Sampling Locations**

- JBS&G Hand Auger
- PSM Boreholes (Auger)
- PSM Boreholes (Cored)
- PSM Boreholes (Cored)/ Monitoring Well

JBS&G

| | |
|---|---|
| Job No: 59831 | |
| Client: TAFE NSW | |
| Version: R01 Rev A | Date 1/12/2020 |
| Drawn By: AS/RH | Checked By: SG |
| Scale 1:3,200 | |

0 50 100
metres

Coord. Sys. GDA 1994 MGA Zone 56

**2-44 O'Connell Street, Kingswood NSW**

**SAMPLING LOCATIONS**

**FIGURE 3**

File Name: N:\Projects\TAFE NSW\59831 WSCH combined PSI Geotech\GIS\Maps\R01 Rev A\59831_03_SamplingLocs_v2.mxd
Reference: www.nearmap.com - Imagery 01-10-2020, Basemap adapted from Gray Puksand, 'TAFE NSW Western Sydney Construction Hub'


**Legend:**

- Approximate Site Boundary
- TAFE Kingswood Boundary

**Sampling Locations**

- JBS&G Hand Auger
- PSM Boreholes (Auger)
- PSM Boreholes (Cored)
- PSM Boreholes (Cored)/ Monitoring Well

JBS&G

| | |
|---|---|
| Job No: 59831 | |
| Client: TAFE NSW | |
| Version: R01 Rev A | Date 1/12/2020 |
| Drawn By: AS | Checked By: SG |
| Scale 1:3,200 | |

0 50 100
metres

Coord. Sys. GDA 1994 MGA Zone 56

**2-44 O'Connell Street, Kingswood NSW**

**PROPOSED DEVELOPMENT PLAN**

**FIGURE 4**

File Name: N:\Projects\TAFE NSW\59831 WSCH combined PSI Geotech\GIS\Maps\R01 Rev A\59831_04_ProposedDevelopmentPlan.mxd
Reference: www.nearmap.com - Imagery 01-10-2020, Basemap adapted from Gray Puksand, 'TAFE NSW Western Sydney Construction Hub'

**Table A – Soil Analytical Results**

**Table A Soil Analytical Results**
Project Number: 59831
Project Name: WSCH PSI

| | | | Metals & Metalloids | | | | | | | | TRHs (NEPC 2013) | | | | | | | BTEXN | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Arsenic | Cadmium | Chromium (III+VI) | Copper | Lead | Mercury | Nickel | Zinc | C6-C10 | C10-C16 | C16-C34 | C34-C40 | C10-C40 (Sum of total) | F1 (C6-C10 minus BTEX) | F2 (C10-C16 less Naphthalene) | Benzene | Toluene | Ethylbenzene | Xylene (o) | Xylene (m & p) | Xylene Total | Naphthalene | Naphthalene - MAH | Acenaphthene | Acenaphthylene | Anthracene | Benz(a)anthracene | Benzo(a) pyrene | Benzo(a)pyrene TEQ (LOR) | Benzo(a)pyrene TEQ calc (Half) | Benzo(a)pyrene TEQ calc (Zero) |
| | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| EQL | | | 2 | 0.4 | 1 | 1 | 1 | 0.1 | 1 | 1 | 20 | 50 | 100 | 100 | 50 | 20 | 50 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.1 | 0.5 | 0.1 | 0.1 | 0.1 | 0.1 | 0.05 | 0.5 | 0.5 | 0.5 |
| CRC Care 2011 Table A4 Direct Contact Intrusive Maintenance Worker | | | | | | | | | | | 82000 | 62000 | 85000 | 120000 | | | | 1100 | 120000 | 85000 | | | 130000 | 29000 | 29000 | | | | | | | | |
| NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil | | | 3000[#1] | 900 | 3600[#2] | 240000 | 1500[#3] | 730[#4] | 6000 | 400000 | | | | | | | | | | | | | | | | | | | | 40[#5] | 40[#5] | 40[#5] |
| NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0-1m | | | | | | | | | | | | | | | | 310[#8] | NL[#9] | 4[#10] | NL[#10] | NL[#10] | | | NL[#10] | NL[#10] | NL[#10] | | | | | | | | |
| NEPM 2013 Table 1B(1-5) Generic EIL - Comm/Ind | | | 160[#11] | | 960 | 330 | 1800[#14] | | 490 | 1200 | | | | | | | | | | | | | | 370 | 370 | | | | | | | | |
| NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil | | | | | | | | | | | | | 2500[#17] | 6600[#17] | | 215[#18] | 170[#19] | 95[#17] | 135[#17] | 185[#17] | | | 95[#17] | | | | | | | 1.4[#20] | | | |
| NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil | | | | | | | | | | | 800[#21] | 1000[#21] | 5000 | 10000 | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 7 Comm/Ind D Soil HSL for Asbestos in Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Field_ID** | **Lab_Report_Number** | **Sampled_Date_Time** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH01 0.2-0.3 | 758440 | 18/11/2020 | 19 | <0.4 | 23 | 30 | 28 | <0.1 | 18 | 80 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| BH01 0.5-0.6 | 758440 | 18/11/2020 | 11 | <0.4 | 19 | 27 | 17 | <0.1 | 16 | 57 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| BH02 0-0.1 | 758440 | 19/11/2020 | 7.7 | <0.4 | 21 | 31 | 13 | <0.1 | 22 | 42 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| BH02 1.0-1.1 | 758440 | 19/11/2020 | 24 | <0.4 | 23 | 32 | 11 | <0.1 | 35 | 76 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| BH03 0.2-0.3 | 758440 | 18/11/2020 | 8.1 | <0.4 | 19 | 31 | 24 | <0.1 | 16 | 75 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| BH04 0.2-0.3 | 758440 | 18/11/2020 | 9 | <0.4 | 21 | 22 | 14 | <0.1 | 21 | 36 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| BH04 1.5-1.6 | 758440 | 18/11/2020 | 24 | <0.4 | 15 | 41 | 16 | <0.1 | 41 | 72 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| BH09 0.5-0.6 | 758440 | 19/11/2020 | 5.1 | <0.4 | 32 | 32 | 13 | <0.1 | 42 | 85 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| BH09 0-0.1 | 758440 | 19/11/2020 | 9.6 | <0.4 | 25 | 32 | 11 | <0.1 | 27 | 62 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| BH10 0.2-0.3 | 758440 | 19/11/2020 | 4.7 | <0.4 | 24 | 38 | 12 | <0.1 | 19 | 68 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| BH10 1.0-1.1 | 758440 | 19/11/2020 | 5.4 | <0.4 | 19 | 43 | 11 | <0.1 | 11 | 42 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| HA01 0.5-0.6 | 757514 | 17/11/2020 | 8.1 | <0.4 | 32 | 31 | 17 | <0.1 | 41 | 63 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| HA02 0.2-0.3 | 757514 | 17/11/2020 | 5.7 | <0.4 | 26 | 30 | 24 | <0.1 | 24 | 85 | <20 | 54 | 250 | <100 | 304 | <20 | 54 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| HA03 0-0.1 | 757514 | 17/11/2020 | 5.7 | <0.4 | 24 | 25 | 20 | <0.1 | 25 | 63 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| HA04 0.5-0.6 | 757514 | 17/11/2020 | 5.6 | <0.4 | 22 | 36 | 16 | <0.1 | 21 | 56 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| QA181120 | 758440 | 18/11/2020 | 10 | <0.4 | 24 | 28 | 16 | <0.1 | 20 | 46 | <20 | <50 | <100 | 130 | 130 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.2 | 0.6 | <0.5 |
| QC18/11/20 | 256393 | 18/11/2020 | 7 | <0.4 | 18 | 23 | 15 | <0.1 | 15 | 31 | <25 | <50 | <100 | <100 | <50 | <25 | | <0.2 | <0.5 | <1 | <1 | <2 | <3 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.05 | <0.5 | <0.5 | <0.5 |

**Table A Soil Analytical Results**
Project Number: 59831
Project Name: WSCH PSI

| | | | PAH | | | | | | | | | | | | Organochlorine Pesticides | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Benzo(b+j)fluoranthene | Benzo(b+j+k)fluoranthene | Benzo(g,h,i)perylene | Benzo(k)fluoranthene | Chrysene | Dibenz(a,h)anthracene | Fluoranthene | Fluorene | Indeno(1,2,3-c,d)pyrene | Naphthalene - PAH | Phenanthrene | Pyrene | PAHs (Sum of total) | 4,4-DDE | a-BHC | b-BHC | d-BHC | g-BHC (Lindane) | Aldrin | Dieldrin | Aldrin + Dieldrin | Chlordane | Chlordane (cis) | Chlordane (trans) | DDT | DDD | DDT+DDE+DDD | Endosulfan I | Endosulfan II | Endosulfan sulphate | Endrin | Endrin aldehyde | Endrin ketone |
| | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| EQL | | | 0.5 | 0.2 | 0.1 | 0.5 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.5 | 0.1 | 0.1 | 0.05 | 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 |
| CRC Care 2011 Table A4 Direct Contact Intrusive Maintenance Wo | | | | | | | | | | | | 29000 | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil | | | | | | | | | | | | | | | 4000[#6] | | | | | | | | 45 | 530 | | | | 3600 | | | | 100 | | | | |
| NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0-1m | | | | | | | | | | | | NL[#10] | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(1-5) Generic EIL - Comm/Ind | | | | | | | | | | | | 370 | | | | | | | | | | | | | | | 640 | | | | | | | | | | |
| NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 7 Comm/Ind D Soil HSL for Asbestos in Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Field_ID** | **Lab_Report_Number** | **Sampled_Date_Time** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH01 0.2-0.3 | 758440 | 18/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| BH01 0.5-0.6 | 758440 | 18/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| BH02 0-0.1 | 758440 | 19/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| BH02 1.0-1.1 | 758440 | 19/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| BH03 0.2-0.3 | 758440 | 18/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| BH04 0.2-0.3 | 758440 | 18/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| BH04 1.5-1.6 | 758440 | 18/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| BH09 0.5-0.6 | 758440 | 19/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| BH09 0-0.1 | 758440 | 19/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| BH10 0.2-0.3 | 758440 | 19/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| BH10 1.0-1.1 | 758440 | 19/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| HA01 0.5-0.6 | 757514 | 17/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| HA02 0.2-0.3 | 757514 | 17/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| HA03 0-0.1 | 757514 | 17/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| HA04 0.5-0.6 | 757514 | 17/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| QA181120 | 758440 | 18/11/2020 | <0.5 | | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | <0.05 | <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 |
| QC18/11/20 | 256393 | 18/11/2020 | | <0.2 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.05 | <0.1 | <0.1 | <0.1 | <0.1 | <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 | |

**Table A Soil Analytical Results**
Project Number: 59831
Project Name: WSCH PSI

| | | | | | | Polychlorinated Biphenyls | | | | | | | | Chlorinated Benzenes | Ionic Balance | | | Inorganics | Particle Size | Asbestos - Eurofins | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Heptachlor | Heptachlor Epoxide | Methoxychlor | Toxaphene | Arochlor 1016 | Arochlor 1221 | Arochlor 1232 | Arochlor 1242 | Arochlor 1248 | Arochlor 1254 | Arochlor 1260 | PCBs (Sum of total) | Hexachlorobenzene | CEC | Conductivity (1:5 aqueous extract) | pH (aqueous extract) | Moisture | % Clay* | Approximate Sample Mass | Mass ACM | Mass Asbestos in ACM | Asbestos from ACM in Soil | Mass FA | Mass Asbestos in FA | Mass AF | Mass asbestos in AF | Asbestos from FA & AF in Soil | Mass Asbestos in FA & AF | ACM - Comment | FA- Comment |
| | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | MEQ/100G | US/CM | pH Units | % | % | g | g | g | % (w/w) | g | g | g | g | % (w/w) | g | Comment | Comment |
| EQL | | 0.05 | 0.05 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.05 | 0.05 | 10 | 0.1 | 0.1 | 1 | | | | | | | | | | | | |
| CRC Care 2011 Table A4 Direct Contact Intrusive Maintenance Wo | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil | | 50 | | 2500 | 160 | | | | | | | | 7[#7] | 80 | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0-1m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(1-5) Generic EIL - Comm/Ind | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 7 Comm/Ind D Soil HSL for Asbestos in Soil | | | | | | | | | | | | | | | | | | | | | | | 0.05[#22] | | | | | 0.001[#23] | | | |
| **Field_ID** | **Lab_Report_Number** | **Sampled_Date_Time** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH01 0.2-0.3 | 758440 | 18/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | | | 701 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] |
| BH01 0.5-0.6 | 758440 | 18/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | | | | | | | | | | | | | | |
| BH02 0-0.1 | 758440 | 19/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | | | 499 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] |
| BH02 1.0-1.1 | 758440 | 19/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | | | | | | | | | | | | | | |
| BH03 0.2-0.3 | 758440 | 18/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | | | 462 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] |
| BH04 0.2-0.3 | 758440 | 18/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | 11 | 23 | 6.4 | | 10 | 475 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] |
| BH04 1.5-1.6 | 758440 | 18/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | | | | | | | | | | | | | | |
| BH09 0.5-0.6 | 758440 | 19/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | | | | | | | | | | | | | | |
| BH09 0-0.1 | 758440 | 19/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | 33 | 70 | 7.1 | | 12 | 639 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] |
| BH10 0.2-0.3 | 758440 | 19/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | | | 453 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] |
| BH10 1.0-1.1 | 758440 | 19/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | | | | | | | | | | | | | | |
| HA01 0.5-0.6 | 757514 | 17/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | | | 430 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] |
| HA02 0.2-0.3 | 757514 | 17/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | | | 524 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] |
| HA03 0-0.1 | 757514 | 17/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | | | 488 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] |
| HA04 0.5-0.6 | 757514 | 17/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | | | 592 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] |
| QA181120 | 758440 | 18/11/2020 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | | | 416 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] |
| QC18/11/20 | 256393 | 18/11/2020 | <0.1 | <0.1 | <0.1 | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | | 30 | | | | | | | | | | | | | |

**Table A Soil Analytical Results**
Project Number: 59831
Project Name: WSCH PSI

| | | | | | | | Asbestos - Envirolab | | | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AF - Comment | Organic Fibres - Comment | Respirable Fibres - Comment | Synthetic Fibres - Comment | Asbestos Reported Result | Asbestos ID in Soil | Total Asbestos | Asbestos (ACM >7mm) Estimation | Asbestos in soil (<2mm AF/FA) (%w/w) | Moisture Content (dried @ 103°C) | TOC |
| | | | Comment | Comment | Comment | Comment | Comment | g/kg | g/kg | % (w/w) | % (w/w) | % | mg/kg |
| EQL | | | | | | | | | 0.1 | 0.01 | 0.001 | 1 | 0.1 |
| CRC Care 2011 Table A4 Direct Contact Intrusive Maintenance Wo | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil | | | | | | | | | | | | | |
| NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion | | | | | | | | | | | | | |
| 0-1m | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(1-5) Generic EIL - Comm/Ind | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil | | | | | | | | | | | | | |
| NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil | | | | | | | | | | | | | |
| NEPM 2013 Table 7 Comm/Ind D Soil HSL for Asbestos in Soil | | | | | | | | | | 0.05[#22] | 0.001[#23] | | |
| **Field_ID** | **Lab_Report_Number** | **Sampled_Date_Time** | | | | | | | | | | | |
| BH01 0.2-0.3 | 758440 | 18/11/2020 | 1[#4] | 1[#3] | 0 | 1[#4] | 1[#1] | | | | | 15 | |
| BH01 0.5-0.6 | 758440 | 18/11/2020 | | | | | | | | | | 13 | |
| BH02 0-0.1 | 758440 | 19/11/2020 | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 13 | |
| BH02 1.0-1.1 | 758440 | 19/11/2020 | | | | | | | | | | 9.5 | |
| BH03 0.2-0.3 | 758440 | 18/11/2020 | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 20 | |
| BH04 0.2-0.3 | 758440 | 18/11/2020 | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 33 | 1.1 |
| BH04 1.5-1.6 | 758440 | 18/11/2020 | | | | | | | | | | 13 | |
| BH09 0.5-0.6 | 758440 | 19/11/2020 | | | | | | | | | | 6.3 | |
| BH09 0-0.1 | 758440 | 19/11/2020 | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 8.1 | 0.6 |
| BH10 0.2-0.3 | 758440 | 19/11/2020 | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 12 | |
| BH10 1.0-1.1 | 758440 | 19/11/2020 | | | | | | | | | | 13 | |
| HA01 0.5-0.6 | 757514 | 17/11/2020 | 1[#4] | 1[#3] | 0 | 1[#4] | 1[#1] | | | | | 17 | |
| HA02 0.2-0.3 | 757514 | 17/11/2020 | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 11 | |
| HA03 0-0.1 | 757514 | 17/11/2020 | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 12 | |
| HA04 0.5-0.6 | 757514 | 17/11/2020 | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 15 | |
| QA181120 | 758440 | 18/11/2020 | 1[#4] | 1[#4] | 1[#2] | 1[#4] | 1[#1] | | | | | 15 | |
| QC18/11/20 | 256393 | 18/11/2020 | | | | | | 0 | <0.1 | <0.01 | <0.001 | | |

**Table A Soil Analytical Results**
Project Number: 59831
Project Name: WSCH PSI

| | Metals & Metalloids | | | | | | | | TRHs (NEPC 2013) | | | | | | | BTEXN | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Arsenic | Cadmium | Chromium (III+VI) | Copper | Lead | Mercury | Nickel | Zinc | C6-C10 | C10-C16 | C16-C34 | C34-C40 | C10-C40 (Sum of total) | F1 (C6-C10 minus BTEX) | F2 (C10-C16 less Naphthalene) | Benzene | Toluene | Ethylbenzene | Xylene (o) | Xylene (m & p) | Xylene Total | Naphthalene | Naphthalene - MAH | Acenaphthene | Acenaphthylene | Anthracene | Benz(a)anthracene | Benzo(a) pyrene | Benzo(a)pyrene TEQ (LOR) | Benzo(a)pyrene TEQ calc (Half) | Benzo(a)pyrene TEQ calc (Zero) |
| | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| EQL | 2 | 0.4 | 1 | 1 | 1 | 0.1 | 1 | 1 | 20 | 50 | 100 | 100 | 50 | 20 | 50 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.1 | 0.5 | 0.1 | 0.1 | 0.1 | 0.1 | 0.05 | 0.5 | 0.5 | 0.5 |
| CRC Care 2011 Table A4 Direct Contact Intrusive Maintenance Worker | | | | | | | | | 82000 | 62000 | 85000 | 120000 | | | | 1100 | 120000 | 85000 | | | 130000 | 29000 | 29000 | | | | | | | | |
| NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil | 3000[#1] | 900 | 3600[#2] | 240000 | 1500[#3] | 730[#4] | 6000 | 400000 | | | | | | | | | | | | | | | | | | | | | 40[#5] | 40[#5] | 40[#5] |
| NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0-1m | | | | | | | | | | | | | | 310[#8] | NL[#9] | 4[#10] | NL[#10] | NL[#10] | | | NL[#10] | NL[#10] | NL[#10] | | | | | | | | |
| NEPM 2013 Table 1B(1-5) Generic EIL - Comm/Ind | 160[#11] | | 960 | 330 | 1800[#14] | | 490 | 1200 | | | | | | | | | | | | | | 370 | 370 | | | | | | | | |
| NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil | | | | | | | | | | | 2500[#17] | 6600[#17] | | 215[#18] | 170[#19] | 95[#17] | 135[#17] | 185[#17] | | | 95[#17] | | | | | | | 1.4[#20] | | | |
| NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil | | | | | | | | | 800[#21] | 1000[#21] | 5000 | 10000 | | | | | | | | | | | | | | | | | | | |
| NEPM 2013 Table 7 Comm/Ind D Soil HSL for Asbestos in Soil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**Field_ID** **Lab_Report_Number** **Sampled_Date_Time**

**Env Stds Comments**

#1:Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Shedule B7).
#2:Trigger Value adopted from Chromium (VI)
#3:Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#4:Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#5:Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#6:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & napthalene (should meet relevant HSL)
#7:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#8:Derived soil HSL exceeds soil saturation concentraiton. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#9:Derived soil HSL exceeds soil saturation concentraiton. To obtain F2 subtract naphthalene from the >C10-C16 fraction
#10:Derived soil HSL exceeds soil saturation concentraiton
#11:Aged values apply to arsenic contamination present in soil > 2 years. Refer Schedule B5c for < 2 years.
#12:Trigger Value taken for Chromium (III), Clay Content of 1%
#13:Trigger Value taken for pH 4.5
#14:Aged values apply to lead contamination present in soil > 2 years. Refer Schedule B5c for < 2 years.
#15:Trigger Value taken for CEC 5
#16:Trigger Value taken for pH 4 and CEC 5
#17:ESLs are of low reliability.
#18:Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#19:Moderate reliability. To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#20:ESLs are of low reliability. Revised as per NEPC errata 6 Feb 2014
#21:Separate management limits for BTEX & naphthalene are not available hence should not be subtracted from the relevant fractions to obtain F1 & F2
#22:Commercial/industrial D includes premises such as shops, offices, factories and industrial sites.
#23:Only applies where the FA and AF are able to be quantified by gravimetric procedures (refer Section 4.10). This screening level is not applicable to free fibres.
#24:Trigger value adopted from Chromium VI
#25:Approximate range of petroleum hydrocarbon fractions: petrol C6–C9, kerosene C10–C18, diesel C12–C18, and lubricating oils above C18. Refer to NSW Waste Criteria Nov 2014 p.12 footnote 7
#26:There may be a need for the laboratory to concentrate the sample to achieve the TCLP limit value for benzo(a)pyrene with confidence. Refer to NSW Waste Criteria Nov 2014 p.11 footnote 2
#27:Polychlorinated biphenyls must be managed in accordance with the EPA's polychlorinated biphenyl (PCB) chemical control order 1997. Refer to NSW Waste Criteria Nov 2014 p.12 footnote 8
#28:Refer to NSW Waste Criteria Nov 2014 p.17 footnote 13
#29:Calculated from Hazardous Waste: Identification and Listing (USEPA 2012a). Refer to NSW Waste Criteria Nov 2014 p.16 footnote 3, 4
#30:Refer to NSW Waste Criteria Nov 2014 p.17 footnote 12

**Data Comments**

#1 No asbestos detected at the reporting limit of 0.001% w/w.*Organic fibre detected.No trace asbestos detected.
#2 No respirable fibres detected.
#3 Organic fibres detected.
#4 Nil

**Table B – Waste Classification Results**

**Table B Preliminary Soil Waste Classification**
Project Number: 59831
Project Name: WSCH PSI

| | | | Metals & Metalloids | | | | | | | | TPHs (NEPC 1999) | | | | | TRHs (NEPC 2013) | | | | | | | BTEXN | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Arsenic | Cadmium | Chromium (III+VI) | Copper | Lead | Mercury | Nickel | Zinc | C6-C9 Fraction | C10-C14 Fraction | C15-C28 Fraction | C29-C36 Fraction | C10-C36 Fraction (Sum of Total) | C6-C10 | C10-C16 | C16-C34 | C34-C40 | C10-C40 (Sum of total) | F1 (C6-C10 minus BTEX) | F2 (C10-C16 less Naphthalene) | Benzene | Toluene | Ethylbenzene | Xylene (o) | Xylene (m & p) | Xylene Total | Naphthalene | Naphthalene - MAH | Acenaphthene | Acenaphthylene |
| | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| EQL | | | 2 | 0.4 | 1 | 1 | 1 | 0.1 | 1 | 1 | 20 | 20 | 50 | 50 | 50 | 20 | 50 | 100 | 100 | 50 | 20 | 50 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.1 | 0.5 | 0.1 | 0.1 |
| NSW 2014 General Solid Waste CT1 (No Leaching) | | | 100 | 20 | 100[#1] | | 100 | 4 | 40 | | 650[#2] | | | | 10000[#2] | | | | | | | | 10 | 288 | 600 | | | 1000 | | | | |
| NSW 2014 General Solid Waste SCC1 (with leached) | | | 500 | 100 | 1900[#1] | | 1500 | 50 | 1050 | | 650[#5] | | | | 10000[#5] | | | | | | | | 18 | 518 | 1080 | | | 1800 | | | | |
| NSW 2014 Restricted Solid Waste CT2 (No Leaching) | | | 400 | 80 | 400[#1] | | 400 | 16 | 160 | | 2600[#2] | | | | 40000[#2] | | | | | | | | 40 | 1152 | 2400 | | | 4000 | | | | |
| NSW 2014 Restricted Solid Waste SCC2 (with leached) | | | 2000 | 400 | 7600[#1] | | 6000 | 200 | 4200 | | 2600[#5] | | | | 40000[#5] | | | | | | | | 72 | 2073 | 4320 | | | 7200 | | | | |
| **Field_ID** | **Lab_Report_Number** | **Sampled_Date_Time** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH01 0.2-0.3 | 758440 | 18/11/2020 | 19 | <0.4 | 23 | 30 | 28 | <0.1 | 18 | 80 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| BH01 0.5-0.6 | 758440 | 18/11/2020 | 11 | <0.4 | 19 | 27 | 17 | <0.1 | 16 | 57 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| BH02 0-0.1 | 758440 | 19/11/2020 | 7.7 | <0.4 | 21 | 31 | 13 | <0.1 | 22 | 42 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| BH02 1.0-1.1 | 758440 | 19/11/2020 | 24 | <0.4 | 23 | 32 | 11 | <0.1 | 35 | 76 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| BH03 0.2-0.3 | 758440 | 18/11/2020 | 8.1 | <0.4 | 19 | 31 | 24 | <0.1 | 16 | 75 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| BH04 0.2-0.3 | 758440 | 18/11/2020 | 9 | <0.4 | 21 | 22 | 14 | <0.1 | 21 | 36 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| BH04 1.5-1.6 | 758440 | 18/11/2020 | 24 | <0.4 | 15 | 41 | 16 | <0.1 | 41 | 72 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| BH09 0.5-0.6 | 758440 | 19/11/2020 | 5.1 | <0.4 | 32 | 32 | 13 | <0.1 | 42 | 85 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| BH09 0-0.1 | 758440 | 19/11/2020 | 9.6 | <0.4 | 25 | 32 | 11 | <0.1 | 27 | 62 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| BH10 0.2-0.3 | 758440 | 19/11/2020 | 4.7 | <0.4 | 24 | 38 | 12 | <0.1 | 19 | 68 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| BH10 1.0-1.1 | 758440 | 19/11/2020 | 5.4 | <0.4 | 19 | 43 | 11 | <0.1 | 11 | 42 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| HA01 0.5-0.6 | 757514 | 17/11/2020 | 8.1 | <0.4 | 32 | 31 | 17 | <0.1 | 41 | 63 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| HA02 0.2-0.3 | 757514 | 17/11/2020 | 5.7 | <0.4 | 26 | 30 | 24 | <0.1 | 24 | 85 | <20 | <20 | 150 | 170 | 320 | <20 | 54 | 250 | <100 | 304 | <20 | 54 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| HA03 0-0.1 | 757514 | 17/11/2020 | 5.7 | <0.4 | 24 | 25 | 20 | <0.1 | 25 | 63 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| HA04 0.5-0.6 | 757514 | 17/11/2020 | 5.6 | <0.4 | 22 | 36 | 16 | <0.1 | 21 | 56 | <20 | <20 | <50 | <50 | <50 | <20 | <50 | <100 | <100 | <100 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| QA181120 | 758440 | 18/11/2020 | 10 | <0.4 | 24 | 28 | 16 | <0.1 | 20 | 46 | <20 | <20 | <50 | 81 | 81 | <20 | <50 | <100 | 130 | 130 | <20 | <50 | <0.1 | <0.1 | <0.1 | <0.1 | <0.2 | <0.3 | | <0.5 | <0.5 | <0.5 |
| QC18/11/20 | 256393 | 18/11/2020 | 7 | <0.4 | 18 | 23 | 15 | <0.1 | 15 | 31 | <25 | <50 | <100 | <100 | | <25 | <50 | <100 | <100 | <50 | <25 | | <0.2 | <0.5 | <1 | <1 | <2 | <3 | <0.1 | | <0.1 | <0.1 |

**Env Stds Comments**
#1:Trigger value adopted from Chromium VI
#2:Approximate range of petroleum hydrocarbon fractions: petrol C6–C9, kerosene C10–C18, diesel C12–C18, and lubricating oils above C18. Refer to NSW Waste Criteria Nov 2014 p.12 footnote 7
#3:There may be a need for the laboratory to concentrate the sample to achieve the TCLP limit value for benzo(a)pyrene with confidence. Refer to NSW Waste Criteria Nov 2014 p.11 footnote 2
#4:Polychlorinated biphenyls must be managed in accordance with the EPA's polychlorinated biphenyl (PCB) chemical control order 1997. Refer to NSW Waste Criteria Nov 2014 p.12 footnote 8
#5:Refer to NSW Waste Criteria Nov 2014 p.17 footnote 13
#6:Calculated from Hazardous Waste: Identification and Listing (USEPA 2012a). Refer to NSW Waste Criteria Nov 2014 p.16 footnote 3, 4
#7:Refer to NSW Waste Criteria Nov 2014 p.17 footnote 12

**Data Comments**
#1 No asbestos detected at the reporting limit of 0.001% w/w.*Organic fibre detected.No trace asbestos detected.
#2 No respirable fibres detected.
#3 Organic fibres detected.
#4 Nil

**Table B Preliminary Soil Waste Classification**
Project Number: 59831
Project Name: WSCH PSI

| | | | PAH | | | | | | | | | | | | | | | | | | Organochlori | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Anthracene | Benz(a)anthracene | Benzo(a) pyrene | Benzo(a)pyrene TEQ (LOR) | Benzo(a)pyrene TEQ calc (Half) | Benzo(a)pyrene TEQ calc (Zero) | Benzo(b+j)fluoranthene | Benzo(b+j+k)fluoranthene | Benzo(g,h,i)perylene | Benzo(k)fluoranthene | Chrysene | Dibenz(a,h)anthracene | Fluoranthene | Fluorene | Indeno(1,2,3-c,d)pyrene | Naphthalene - PAH | Phenanthrene | Pyrene | PAHs (Sum of total) | 4,4-DDE | a-BHC | b-BHC | d-BHC | g-BHC (Lindane) | Aldrin | Dieldrin | Aldrin + Dieldrin | Chlordane | Chlordane (cis) | Chlordane (trans) | DDT |
| | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| EQL | | | 0.1 | 0.1 | 0.05 | 0.5 | 0.5 | 0.5 | 0.5 | 0.2 | 0.1 | 0.5 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.5 | 0.1 | 0.1 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.1 | 0.1 | 0.1 | 0.05 |
| NSW 2014 General Solid Waste CT1 (No Leaching) | | | | | 0.8[#3] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NSW 2014 General Solid Waste SCC1 (with leached) | | | | | 10[#6] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NSW 2014 Restricted Solid Waste CT2 (No Leaching) | | | | | 3.2[#3] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NSW 2014 Restricted Solid Waste SCC2 (with leached) | | | | | 23[#6] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Field_ID** | **Lab_Report_Number** | **Sampled_Date_Time** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH01 0.2-0.3 | 758440 | 18/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| BH01 0.5-0.6 | 758440 | 18/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| BH02 0-0.1 | 758440 | 19/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| BH02 1.0-1.1 | 758440 | 19/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| BH03 0.2-0.3 | 758440 | 18/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| BH04 0.2-0.3 | 758440 | 18/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| BH04 1.5-1.6 | 758440 | 18/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| BH09 0.5-0.6 | 758440 | 19/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| BH09 0-0.1 | 758440 | 19/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| BH10 0.2-0.3 | 758440 | 19/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| BH10 1.0-1.1 | 758440 | 19/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| HA01 0.5-0.6 | 757514 | 17/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| HA02 0.2-0.3 | 757514 | 17/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| HA03 0-0.1 | 757514 | 17/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| HA04 0.5-0.6 | 757514 | 17/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| QA181120 | 758440 | 18/11/2020 | <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 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.1 | | | <0.05 |
| QC18/11/20 | 256393 | 18/11/2020 | <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 | <0.05 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | | | <0.1 | <0.1 | <0.1 |

**Env Stds Comments**
#1:Trigger value adopted from Chromium VI
#2:Approximate range of petroleum hydrocarbon fractions: petrol (
#3:There may be a need for the laboratory to concentrate the samp
#4:Polychlorinated biphenyls must be managed in accordance with
#5:Refer to NSW Waste Criteria Nov 2014 p.17 footnote 13
#6:Calculated from Hazardous Waste: Identification and Listing (US
#7:Refer to NSW Waste Criteria Nov 2014 p.17 footnote 12

**Data Comments**
#1 No asbestos detected at the reporting limit of 0.001% w/w.*Org
#2 No respirable fibres detected.
#3 Organic fibres detected.
#4 Nil

**Table B Preliminary Soil Waste Classification**
Project Number: 59831
Project Name: WSCH PSI

| | ne Pesticides | | | | | | | | | | | | Polychlorinated Biphenyls | | | | | | | | Chlorinated Benzenes | Ionic Balance | | | PA VIC - IWRG62 | | Inorganics |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DDD | DDT+DDE+DDD | Endosulfan I | Endosulfan II | Endosulfan sulphate | Endrin | Endrin aldehyde | Endrin ketone | Heptachlor | Heptachlor Epoxide | Methoxychlor | Toxaphene | Arochlor 1016 | Arochlor 1221 | Arochlor 1232 | Arochlor 1242 | Arochlor 1248 | Arochlor 1254 | Arochlor 1260 | PCBs (Sum of total) | Hexachlorobenzene | CEC | Conductivity (1:5 aqueous extract) | pH (aqueous extract) | Organochlorine Pesticides EPAVic | Other Organochlorine Pesticides EPAVic | Moisture |
| | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | MEQ/100G | US/CM | pH Units | mg/kg | mg/kg | % |
| EQL | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.05 | 0.05 | 10 | 0.1 | 0.1 | 0.1 | 0.1 |
| NSW 2014 General Solid Waste CT1 (No Leaching) | | | | | | | | | | | | | | | | | | | | <50[#4] | | | | | | | |
| NSW 2014 General Solid Waste SCC1 (with leached) | | | | | | | | | | | | | | | | | | | | <50-[#7] | | | | | | | |
| NSW 2014 Restricted Solid Waste CT2 (No Leaching) | | | | | | | | | | | | | | | | | | | | <50[#4] | | | | | | | |
| NSW 2014 Restricted Solid Waste SCC2 (with leached) | | | | | | | | | | | | | | | | | | | | <50[#7] | | | | | | | |
| **Field_ID** | **Lab_Report_Number** | **Sampled_Date_Time** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BH01 0.2-0.3 | 758440 | 18/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | <0.2 | <0.2 | |
| BH01 0.5-0.6 | 758440 | 18/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | <0.2 | <0.2 | |
| BH02 0-0.1 | 758440 | 19/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | <0.2 | <0.2 | |
| BH02 1.0-1.1 | 758440 | 19/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | <0.2 | <0.2 | |
| BH03 0.2-0.3 | 758440 | 18/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | <0.2 | <0.2 | |
| BH04 0.2-0.3 | 758440 | 18/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | 11 | 23 | 6.4 | <0.2 | <0.2 | |
| BH04 1.5-1.6 | 758440 | 18/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | <0.2 | <0.2 | |
| BH09 0.5-0.6 | 758440 | 19/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | <0.2 | <0.2 | |
| BH09 0-0.1 | 758440 | 19/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | 33 | 70 | 7.1 | <0.2 | <0.2 | |
| BH10 0.2-0.3 | 758440 | 19/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | <0.2 | <0.2 | |
| BH10 1.0-1.1 | 758440 | 19/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | <0.2 | <0.2 | |
| HA01 0.5-0.6 | 757514 | 17/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | <0.2 | <0.2 | |
| HA02 0.2-0.3 | 757514 | 17/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | <0.2 | <0.2 | |
| HA03 0-0.1 | 757514 | 17/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | <0.2 | <0.2 | |
| HA04 0.5-0.6 | 757514 | 17/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | <0.2 | <0.2 | |
| QA181120 | 758440 | 18/11/2020 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.2 | <0.1 | <0.5 | <0.1 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.05 | | | | <0.2 | <0.2 | |
| QC18/11/20 | 256393 | 18/11/2020 | <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 | | | | | | 30 |

**Env Stds Comments**
#1:Trigger value adopted from Chromium VI
#2:Approximate range of petroleum hydrocarbon fractions: petrol (
#3:There may be a need for the laboratory to concentrate the samp
#4:Polychlorinated biphenyls must be managed in accordance with
#5:Refer to NSW Waste Criteria Nov 2014 p.17 footnote 13
#6:Calculated from Hazardous Waste: Identification and Listing (US
#7:Refer to NSW Waste Criteria Nov 2014 p.17 footnote 12

**Data Comments**
#1 No asbestos detected at the reporting limit of 0.001% w/w.*Org
#2 No respirable fibres detected.
#3 Organic fibres detected.
#4 Nil

**Table B Preliminary Soil Waste Classification**
Project Number: 59831
Project Name: WSCH PSI

| | | | Particle Size | Asbestos - Eurofins | | | | | | | | | | | | | | | | Asbestos - Envirolab | | | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | % Clay* | Approximate Sample Mass | Mass ACM | Mass Asbestos in ACM | Asbestos from ACM in Soil | Mass FA | Mass Asbestos in FA | Mass AF | Mass asbestos in AF | Asbestos from FA & AF in Soil | Mass Asbestos in FA & AF | ACM - Comment | FA- Comment | AF - Comment | Organic Fibres - Comment | Respirable Fibres - Comment | Synthetic Fibres - Comment | Asbestos Reported Result | Asbestos ID in Soil | Total Asbestos | Asbestos (ACM >7mm) Estimation | Asbestos in soil (<2mm AF/FA) (%w/w) | Moisture Content (dried @ 103°C) | TOC |
| | | | % | g | g | g | % (w/w) | g | g | g | g | % (w/w) | g | Comment | Comment | Comment | Comment | Comment | Comment | Comment | g/kg | g/kg | % (w/w) | % (w/w) | % | mg/kg |
| EQL | | | 1 | | | | | | | | | | | | | | | | | | | 0.1 | 0.01 | 0.001 | 1 | 0.1 |
| NSW 2014 General Solid Waste CT1 (No Leaching) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NSW 2014 General Solid Waste SCC1 (with leached) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NSW 2014 Restricted Solid Waste CT2 (No Leaching) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NSW 2014 Restricted Solid Waste SCC2 (with leached) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Field_ID** | **Lab_Report_Number** | **Sampled_Date_Time** | | | | | | | | | | | | | | | | | | | | | | | | |
| BH01 0.2-0.3 | 758440 | 18/11/2020 | | 701 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] | 1[#4] | 1[#3] | 0 | 1[#4] | 1[#1] | | | | | 15 | |
| BH01 0.5-0.6 | 758440 | 18/11/2020 | | | | | | | | | | | | | | | | | | | | | | | 13 | |
| BH02 0-0.1 | 758440 | 19/11/2020 | | 499 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 13 | |
| BH02 1.0-1.1 | 758440 | 19/11/2020 | | | | | | | | | | | | | | | | | | | | | | | 9.5 | |
| BH03 0.2-0.3 | 758440 | 18/11/2020 | | 462 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 20 | |
| BH04 0.2-0.3 | 758440 | 18/11/2020 | 10 | 475 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 33 | 1.1 |
| BH04 1.5-1.6 | 758440 | 18/11/2020 | | | | | | | | | | | | | | | | | | | | | | | 13 | |
| BH09 0.5-0.6 | 758440 | 19/11/2020 | | | | | | | | | | | | | | | | | | | | | | | 6.3 | |
| BH09 0-0.1 | 758440 | 19/11/2020 | 12 | 639 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 8.1 | 0.6 |
| BH10 0.2-0.3 | 758440 | 19/11/2020 | | 453 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 12 | |
| BH10 1.0-1.1 | 758440 | 19/11/2020 | | | | | | | | | | | | | | | | | | | | | | | 13 | |
| HA01 0.5-0.6 | 757514 | 17/11/2020 | | 430 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] | 1[#4] | 1[#3] | 0 | 1[#4] | 1[#1] | | | | | 17 | |
| HA02 0.2-0.3 | 757514 | 17/11/2020 | | 524 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 11 | |
| HA03 0-0.1 | 757514 | 17/11/2020 | | 488 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 12 | |
| HA04 0.5-0.6 | 757514 | 17/11/2020 | | 592 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] | 1[#4] | 1[#3] | 1[#2] | 1[#4] | 1[#1] | | | | | 15 | |
| QA181120 | 758440 | 18/11/2020 | | 416 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1[#4] | 1[#4] | 1[#4] | 1[#4] | 1[#2] | 1[#4] | 1[#1] | | | | | 15 | |
| QC18/11/20 | 256393 | 18/11/2020 | | | | | | | | | | | | | | | | | | | 0 | <0.1 | <0.01 | <0.001 | | |

**Env Stds Comments**
#1:Trigger value adopted from Chromium VI
#2:Approximate range of petroleum hydrocarbon fractions: petrol (
#3:There may be a need for the laboratory to concentrate the samp
#4:Polychlorinated biphenyls must be managed in accordance with
#5:Refer to NSW Waste Criteria Nov 2014 p.17 footnote 13
#6:Calculated from Hazardous Waste: Identification and Listing (US
#7:Refer to NSW Waste Criteria Nov 2014 p.17 footnote 12

**Data Comments**
#1 No asbestos detected at the reporting limit of 0.001% w/w.*Org
#2 No respirable fibres detected.
#3 Organic fibres detected.
#4 Nil

**Table C – Groundwater Analytical Results**

**Table C Groundwater Analytical Results**
Project Number: 59831
Project Name: WSCH PSI

| | Metals & Metalloids | | | | | | | | TRHs (NEPC 2013) | | | | | | | BTEXN | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Arsenic (Filtered) | Cadmium (Filtered) | Chromium (III+VI) (Filtered) | Copper (Filtered) | Lead (Filtered) | Mercury (Filtered) | Nickel (Filtered) | Zinc (Filtered) | C6-C10 | C10-C16 | C16-C34 | C34-C40 | C10-C40 (Sum of total) | F1 (C6-C10 minus BTEX) | F2 (C10-C16 less Naphthalene) | Benzene | Toluene | Ethylbenzene | Xylene (o) | Xylene (m & p) | Xylene Total | Naphthalene - MAH | Acenaphthene | Acenaphthylene | Anthracene | Benz(a)anthracene |
| | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L |
| EQL | 0.001 | 0.0002 | 0.001 | 0.001 | 0.001 | 0.0001 | 0.001 | 0.005 | 0.02 | 0.05 | 0.1 | 0.1 | 0.1 | 0.02 | 0.05 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.003 | 0.01 | 0.00001 | 0.00001 | 0.00001 | 0.00001 |
| ADWG 2018 Aesthetic | | | | 1 | | | | 3 | | | | | | | | | 0.025 | 0.003 | 0.001 | | 0.02 | | | | | |
| ADWG 2018 Health | 0.01 | 0.002 | | 2 | 0.01 | 0.001 | 0.02 | #1 | | | | | 0.09[#2] | | 0.09[#2] | 0.001 | 0.8 | 0.3 | | | 0.6 | | | | | |
| ADWG 2018 Health x10 | 0.1 | 0.02 | | 20 | 0.1 | 0.01 | 0.2 | #1 | | | | | 0.9[#2] | | 0.9[#2] | 0.01 | 8 | 3 | | | 6 | | | | | |
| ANZG (2018) Freshwater 95% toxicant DGVs | 0.013[#3] | 0.0002[#4] | 0.001[#5] | 0.0014[#4] | 0.0034[#6] | 0.0006[#7] | 0.011[#7] | 0.008[#8] | | | | | | | | 0.95[#6] | | | 0.35[#7] | | | 0.016[#7] | | | | |
| NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2-4m | | | | | | | | | | | | | | NL[#9] | NL[#10] | 30 | NL | NL | | | NL | NL | | | | |
| 4-8m | | | | | | | | | | | | | | NL[#9] | NL[#10] | 30 | NL | NL | | | NL | NL | | | | |
| >8m | | | | | | | | | | | | | | NL[#9] | NL[#10] | 35 | NL | NL | | | NL | NL | | | | |

| Field_ID | Location_Code | Well | Sampled_Date_Time | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BH01 | BH01 | BH01 | 26/11/2020 | <0.001 | <0.0002 | 0.001 | 0.004 | <0.001 | <0.0001 | 0.003 | 0.14 | <0.02 | 0.83 | <0.1 | <0.1 | 0.83 | <0.02 | 0.83 | <0.001 | <0.001 | <0.001 | <0.001 | <0.002 | <0.003 | <0.01 | <0.00001 | <0.00001 | <0.00001 | <0.00001 |

**Env Stds Comments**
#1:Insufficient data to set a guideline value based on health considerations
#2:Adopted from WHO Petroleum Products in Drinking Water 2008
#3:Adopted From AsV
#4:Very high reliability
#5:Adopted from CrVI
#6:Moderate reliability
#7:Low reliability
#8:High reliability
#9:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#10:To obtain F2 subtract napthalene from the >C10 - C16 fraction.

**Table C Groundwater Analytical Results**

Project Number: 59831

Project Name: WSCH PSI

| | PAH | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Benzo(a) pyrene | Benzo(b+j)fluoranthene | Benzo(g,h,i)perylene | Benzo(k)fluoranthene | Chrysene | Dibenz(a,h)anthracene | Fluoranthene | Fluorene | Indeno(1,2,3-c,d)pyrene | Naphthalene - PAH | Phenanthrene | Pyrene | PAHs (Sum of total) |
| | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L |
| EQL | 0.00001 | 0.00001 | 0.00001 | 0.00001 | 0.00001 | 0.00001 | 0.00001 | 0.00001 | 0.00001 | 0.00001 | 0.00001 | 0.00001 | 0.00001 |
| ADWG 2018 Aesthetic | | | | | | | | | | | | | |
| ADWG 2018 Health | 0.00001 | | | | | | | | | | | | |
| ADWG 2018 Health x10 | 0.0001 | | | | | | | | | | | | |
| ANZG (2018) Freshwater 95% toxicant DGVs | | | | | | | | | | 0.016[#7] | | | |
| NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intru | | | | | | | | | | | | | |
| 2-4m | | | | | | | | | | NL | | | |
| 4-8m | | | | | | | | | | NL | | | |
| >8m | | | | | | | | | | NL | | | |
| **Field_ID** **Location_Code** **Well** **Sampled_Date_Time** | | | | | | | | | | | | | |
| BH01 BH01 BH01 26/11/2020 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | 0.00016 | <0.00001 | <0.00001 | 0.00016 |

**Env Stds Comments**

#1:Insufficient data to set a guideline value based on health co
#2:Adopted from WHO Petroleum Products in Drinking Water :
#3:Adopted From AsV
#4:Very high reliability
#5:Adopted from CrVI
#6:Moderate reliability
#7:Low reliability
#8:High reliability
#9:To obtain F1 subtract the sum of BTEX concentrations from
#10:To obtain F2 subtract napthalene from the >C10 - C16 frac

# Appendix A Proposed Development Plans

GREAT WESTERN HIGHWAY

O' CONNELL STREET

EXISTING CARPARK

EXISTING CARPARK

EXISTING POND

GATE 1

NEW VEHICULAR ACCESS

RECONFIGURED CARPARK

EXISTING CARPARK

CARPARK

POTENTIAL CARPARK

EXISTING CARPARK

PROPOSED VEHICLE ROUTE OPTION A

PROPOSED VEHICLE ROUTE OPTION B

PROPOSED CONSTRUCTION HUB

WALKWAY

DELIVERIES

BRUNKER ROAD

CAFE SOUTH

WSU BUILDING BB

WSU BUILDING BA

WSU WERRINGTON SOUTH CAMPUS

WSU PARKING

WSU BUILDING BD

WSU BUILDING BD

POTENTIAL FUTURE ROAD NETWORK

POTENTIAL FUTURE DEVELOPMENT

POTENTIAL O'CONNELL STREET RESIDENTIAL DEVELOPMENT

POTENTIAI O'CONNELL STREET RESIDENTIAL DEVELOPMENT

FUTURE DEVELOPMENT

O'CONNELL STREET RESIDENTIAL DEVELOPMENT

O'CONNELL STREET RESIDENTIAL DEVELOPMENT

FUTURE DEVELOPMENT

ROAD 02

ROAD 04

ROAD 05

ROAD 08

A B C D E F G

1 2 3 4 5 6 7 8 9

## LEGEND

- EXISTING PEDESTRIAN ACCESS
- PROPOSED PEDESTRIAN ACCESS
- EXISTING VEHICULAR ACCESS
- PROPOSED VEHICULAR ACCESS
- BOUNDARY LINE
- EXISTING BUILDING NAME
- PROPOSED VEHICULAR ROUTE CARPARK RECONFIGURATION
- PROPOSED PEDESTRIAN PATH
- PROPOSED CONSTRUCTION HUB
- PROPOSED ROADS WALKWAYS AND RECONFIGURED CARPARK
- EXISTING ROADS, WALKWAYS AND CARPARKS
- PROPOSED LANDSCAPE

1 SITE PLAN - PROPOSED
1 : 1000

0 10000 25000 50000
1:1000

# GRAY PUKSAND



| REV | DESCRIPTION | DATE |
|---|---|---|
| A. | For Information | 03-12-20 |

| | |
|---|---|
| PROJECT NO | 220090 |
| DRAWN | RD |
| CHECKED | SS |
| APPROVED | BH |

**TAFE NSW Western Sydney Construction Hub**
12-44 O'connell St, Kingswood
NSW 2747

**PRELIMINARY**

**SITE PLAN - PROPOSED**

| | | | |
|---|---|---|---|
| DWG # | A0102 | REV | A |
| SCALE @ A0 | As indicated | | |

## Appendix B Photo Log

## PHOTOGRAPH 1: WESTERN BOUNDARY OF THE SITE FACING EAST

## PHOTOGRAPH 2: BUILDING B FACING NORTHEAST

## PHOTOGRAPH 3: CARPARK TO THE WEST OF BUILDING B

## PHOTOGRAPH 4: ACCESS ROAD TO NORTH OF BUILDING D FACING EAST

JBS&G

| | |
|---|---|
| Job No: 59831 | |
| Client: TAFE NSW | |
| Version: R01 Rev A | Date: 8/12/2020 |
| Drawn By: SG | Checked By: SG |
| Not to Scale | |
| | |
| Coord. Sys n/a | |

**2-44 O'Connell Street, Kingswood NSW**

**APPENDIX B**

## PHOTOGRAPH 5: SURFICIAL RUBBISH TO SOUTH OF BUILDING D

## PHOTOGRAPH 6: SURFICIAL RUBBISH TO SOUTH OF BUILDING D

## PHOTOGRAPH 7: BUILDING C FACING NORTHWEST

## PHOTOGRAPH 8: BUILDING E FACING NORTHEAST

JBS&G

| | |
|---|---|
| Job No: 59831 | |
| Client: TAFE NSW | |
| Version: R01 Rev A | Date: 8/12/2020 |
| Drawn By: SG | Checked By: SG |
| Not to Scale | |
| Coord. Sys n/a | |

**2-44 O'Connell Street, Kingswood NSW**

**APPENDIX B**

## PHOTOGRAPH 9: BUILDING N FACING NORTHWEST

## PHOTOGRAPH 10: GRASSED AREA TO SOUTH OF BUILDING N

## PHOTOGRAPH 11: WATER TANK AND MULCH STOCKPILE IN THE VICINITY OF BH09

## PHOTOGRAPH 12: CARPARK TO THE WEST OF BUILDINGS P AND T FACING NORTHEAST

JBS&G

| | |
|---|---|
| Job No: 59831 | |
| Client: TAFE NSW | |
| Version: R01 Rev A | Date: 8/12/2020 |
| Drawn By: SG | Checked By: SG |
| Not to Scale | |
| Coord. Sys n/a | |

**2-44 O'Connell Street, Kingswood NSW**

**APPENDIX B**

## PHOTOGRAPH 13: BRICK/CONCRETE IN SURFACE SOIL OBSERVED IN THE VICINITY OF BUILDING D

## PHOTOGRAPH 14: BUILDING T FACING SOUTHEAST

## PHOTOGRAPH 15: SOUTH OF BUILDING P FACING EAST

## PHOTOGRAPH 16: SOUTH OF BUILDING P (SOUTHEASTERN PORTION OF THE SITE) FACING WEST

JBS&G

| | |
|---|---|
| Job No: 59831 | |
| Client: TAFE NSW | |
| Version: R01 Rev A | Date: 8/12/2020 |
| Drawn By: SG | Checked By: SG |
| Not to Scale | |
| | |
| Coord. Sys n/a | |

**2-44 O'Connell Street, Kingswood NSW**

**APPENDIX B**

## PHOTOGRAPH 17: STORMWATER CONDUIT NORTH OF BUILDING T

## PHOTOGRAPH 18: EASTERN PORTION OF THE SITE FACING NORTH

## PHOTOGRAPH 19: EASTERN PORTION OF THE SITE FACING EAST

## PHOTOGRAPH 20: EASTERN PORTION OF THE SITE FACING NORTH

JBS&G

| | |
|---|---|
| Job No: 59831 | |
| Client: TAFE NSW | |
| Version: R01 Rev A | Date: 8/12/2020 |
| Drawn By: SG | Checked By: SG |
| Not to Scale | |
| | |
| Coord. Sys n/a | |

**2-44 O'Connell Street, Kingswood NSW**

**APPENDIX B**

## PHOTOGRAPH 21: STORMWATER CONDUIT IN THE EASTERN PORTION OF THE SITE

## PHOTOGRAPH 22: SURFACE DAM AND DRAINAGE LINE COVERED IN VEGETATION IN NORTHERN EXTENT OF SITE

## PHOTOGRAPH 23: EASTERN EXTENT OF SITE FACING WEST

## PHOTOGRAPH 24: DRAINAGE LINE IN NORTHERN EXTENT OF SITE

JBS&G

| | |
|---|---|
| Job No: 59831 | |
| Client: TAFE NSW | |
| Version: R01 Rev A | Date: 8/12/2020 |
| Drawn By: SG | Checked By: SG |
| Not to Scale | |
| | |
| Coord. Sys n/a | |

**2-44 O'Connell Street, Kingswood NSW**

**APPENDIX B**

## PHOTOGRAPH 25: BRICK/CONCRETE OBSERVED IN SURFACE SOIL ADJACENT TO DRAINAGE LINE

## PHOTOGRAPH 26: GROUNDWATER MONITORING WELL INSTALLED AT BH01

JBS&G

| | |
|---|---|
| Job No: 59831 | |
| Client: TAFE NSW | |
| Version: R01 Rev A | Date: 8/12/2020 |
| Drawn By: SG | Checked By: SG |
| Not to Scale | |
| | |
| Coord. Sys n/a | |

**2-44 O'Connell Street, Kingswood NSW**

**APPENDIX B**

# Appendix C Groundwater Bore Search

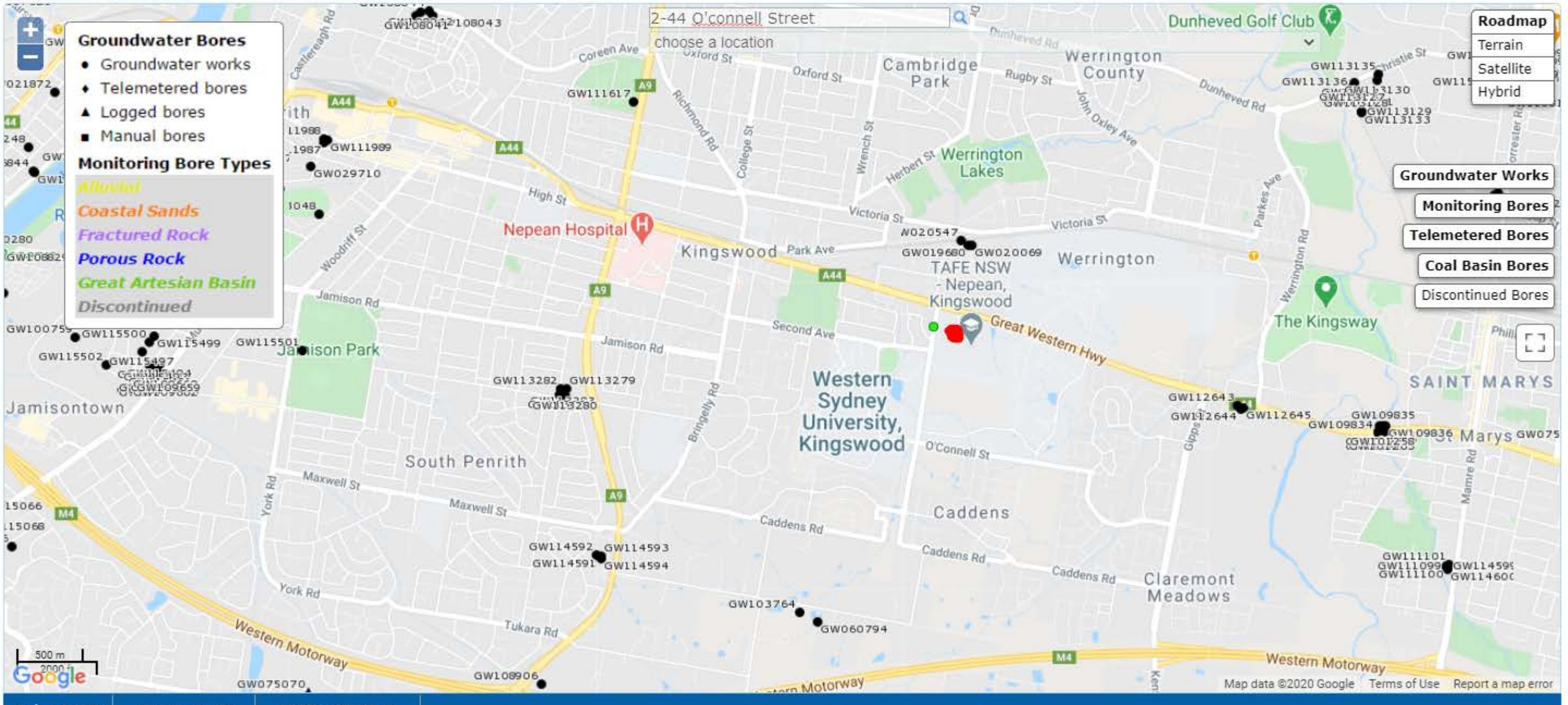
# ALL GROUNDWATER MAP

bookmark this page

All data times are Eastern Standard Time

Map | Info

current site: GW112643




Scale = 1 : 27K | 150.671, -33.748 | 284266, 6263348, 56

# WaterNSW
## Work Summary

### GW019680

**Licence:**
**Licence Status:**

**Authorised Purpose(s):**
**Intended Purpose(s):** WASTE DISPOSAL

**Work Type:** Bore open thru rock
**Work Status:** Test Hole
**Construct.Method:** Cable Tool
**Owner Type:** Federal Govt

**Commenced Date:**
**Completion Date:** 01/04/1962
**Final Depth:** 53.30 m
**Drilled Depth:** 53.30 m

**Contractor Name:** (None)
**Driller:**
**Assistant Driller:**

**Property:**
**GWMA:**
**GW Zone:**
**Standing Water Level (m):**
**Salinity Description:** Salty
**Yield (L/s):**

## Site Details

**Site Chosen By:**

| | County | Parish | Cadastre |
|---|---|---|---|
| **Form A:** | CUMBERLAND | LONDONDER | 109 |
| **Licensed:** | | | |

**Region:** 10 - Sydney South Coast
**River Basin:** 212 - HAWKESBURY RIVER
**Area/District:**
**CMA Map:** 9030-3N
**Grid Zone:**
**Scale:**

**Elevation:** 0.00 m (A.H.D.)
**Elevation Source:** (Unknown)
**Northing:** 6262298.000
**Easting:** 290432.000
**Latitude:** 33°45'31.3"S
**Longitude:** 150°44'14.2"E

**GS Map:** -
**MGA Zone:** 56
**Coordinate Source:** GD.,ACC.MAP

## Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure

Cemented; S-Sump; CE-Centralisers

| Hole | Pipe | Component | Type | From (m) | To (m) | Outside Diameter (mm) | Inside Diameter (mm) | Interval | Details |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Casing | Threaded Steel | -0.60 | 42.90 | 152 | | | Suspended in Clamps |

## Water Bearing Zones

| From (m) | To (m) | Thickness (m) | WBZ Type | S.W.L. (m) | D.D.L. (m) | Yield (L/s) | Hole Depth (m) | Duration (hr) | Salinity (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| 10.90 | 11.20 | 0.30 | Unconsolidated | 10.90 | | 0.03 | | | |
| 44.10 | 44.70 | 0.60 | Fractured | 10.90 | | 0.19 | | | |
| 52.40 | 53.30 | 0.90 | Fractured | 10.90 | | 3.54 | | | |

## Drillers Log

| From (m) | To (m) | Thickness (m) | Drillers Description | Geological Material | Comments |
|---|---|---|---|---|---|
| 0.00 | 11.27 | 11.27 | Clay Water Supply | Clay | |
| 11.27 | 16.15 | 4.88 | Clay Shale | Clay | |
| 16.15 | 44.19 | 28.04 | Shale Hard | Shale | |
| 44.19 | 44.80 | 0.61 | Shale Water Supply | Shale | |
| 44.80 | 50.29 | 5.49 | Shale Dark | Shale | |
| 50.29 | 52.42 | 2.13 | Shale Clay Seams | Shale | |
| 52.42 | 53.34 | 0.92 | Shale Water Supply | Shale | |

## Remarks

19/02/1975: RECHARGE TEST CAPACITY 0.505 L/S

***** End of GW019680 *****

# WaterNSW
## Work Summary

### GW020069

**Licence:**
**Licence Status:**

**Authorised Purpose(s):**
**Intended Purpose(s):** WASTE DISPOSAL

**Work Type:** Bore open thru rock
**Work Status:**
**Construct.Method:** Cable Tool
**Owner Type:** Federal Govt

**Commenced Date:**
**Completion Date:** 01/06/1962
**Final Depth:** 75.50 m
**Drilled Depth:** 75.60 m

**Contractor Name:** (None)
**Driller:**
**Assistant Driller:**

**Property:**
**GWMA:**
**GW Zone:**
**Standing Water Level (m):**
**Salinity Description:**
**Yield (L/s):**

## Site Details

**Site Chosen By:**

| | County | Parish | Cadastre |
|---|---|---|---|
| **Form A:** | CUMBERLAND | LONDONDER | 109 |
| **Licensed:** | | | |

**Region:** 10 - Sydney South Coast
**River Basin:** 212 - HAWKESBURY RIVER
**Area/District:**
**CMA Map:** 9030-3N
**Grid Zone:**
**Scale:**

**Elevation:** 0.00 m (A.H.D.)
**Elevation Source:** (Unknown)
**Northing:** 6262298.000
**Easting:** 290458.000
**Latitude:** 33°45'31.3"S
**Longitude:** 150°44'15.2"E

**GS Map:** -
**MGA Zone:** 56
**Coordinate Source:** GD.,ACC.MAP

## Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure

Cemented; S-Sump; CE-Centralisers

| Hole | Pipe | Component | Type | From (m) | To (m) | Outside Diameter (mm) | Inside Diameter (mm) | Interval | Details |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Casing | | 0.00 | 64.60 | 152 | | | Suspended in Clamps |
| 1 | 1 | Opening | Slots | 7.30 | 8.80 | 152 | | 1 | |
| 1 | 1 | Opening | Slots | 57.90 | 59.40 | 152 | | 2 | |

## Water Bearing Zones

| From (m) | To (m) | Thickness (m) | WBZ Type | S.W.L. (m) | D.D.L. (m) | Yield (L/s) | Hole Depth (m) | Duration (hr) | Salinity (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| 7.30 | 8.80 | 1.50 | Unconsolidated | | | 0.03 | | | |
| 57.90 | 59.40 | 1.50 | (Unknown) | 9.10 | | 0.13 | | | |
| 72.50 | 74.60 | 2.10 | (Unknown) | 6.00 | | 0.25 | | | |

## Drillers Log

| From (m) | To (m) | Thickness (m) | Drillers Description | Geological Material | Comments |
|---|---|---|---|---|---|
| 0.00 | 2.13 | 2.13 | Clay | Clay | |
| 2.13 | 4.57 | 2.44 | Clay Coloured | Clay | |
| 4.57 | 7.31 | 2.74 | Clay Shale | Clay | |
| 7.31 | 8.83 | 1.52 | Clay Sticky Water Supply | Clay | |
| 8.83 | 51.20 | 42.37 | Shale Light Coloured | Shale | |
| 51.20 | 59.43 | 8.23 | Shale Dark Water Supply | Shale | |
| 59.43 | 60.65 | 1.22 | Shale Dark | Shale | |
| 60.65 | 63.70 | 3.05 | Shale | Shale | |
| 63.70 | 72.54 | 8.84 | Shale Light Orange | Shale | |
| 72.54 | 74.67 | 2.13 | Shale Dark Orange Water Supply | Shale | |
| 74.67 | 75.59 | 0.92 | Shale Dark Orange | Shale | |
| 51.20 | 59.43 | 8.23 | Clay Seams | Clay | |
| 60.65 | 63.70 | 3.05 | Sandstone Yellow Streaks | Sandstone | |
| 72.54 | 74.67 | 2.13 | Clay Seams | Clay | |

***** End of GW020069 *****

# WaterNSW
## Work Summary

### GW020547

**Licence:**
**Licence Status:**

**Authorised Purpose(s):**
**Intended Purpose(s):** WASTE DISPOSAL

**Work Type:** Bore open thru rock
**Work Status:**
**Construct.Method:** Cable Tool
**Owner Type:** Federal Govt

**Commenced Date:**
**Completion Date:** 01/06/1963
**Final Depth:** 91.40 m
**Drilled Depth:** 91.40 m

**Contractor Name:** (None)
**Driller:**
**Assistant Driller:**

**Property:**
**GWMA:**
**GW Zone:**
**Standing Water Level (m):**
**Salinity Description:**
**Yield (L/s):**

## Site Details

**Site Chosen By:**

| | County | Parish | Cadastre |
|---|---|---|---|
| **Form A:** | CUMBERLAND | LONDONDER | 109 |
| **Licensed:** | | | |

**Region:** 10 - Sydney South Coast
**River Basin:** 212 - HAWKESBURY RIVER
**Area/District:**
**CMA Map:** 9030-3N
**Grid Zone:**
**Scale:**

**Elevation:** 0.00 m (A.H.D.)
**Elevation Source:** (Unknown)
**Northing:** 6262327.000
**Easting:** 290380.000
**Latitude:** 33°45'30.3"S
**Longitude:** 150°44'12.2"E

**GS Map:** -
**MGA Zone:** 56
**Coordinate Source:** GD.,ACC.MAP

## Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure

Cemented; S-Sump; CE-Centralisers

| Hole | Pipe | Component | Type | From (m) | To (m) | Outside Diameter (mm) | Inside Diameter (mm) | Interval | Details |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Casing | Threaded Steel | -0.30 | 28.00 | 152 | | | |

## Water Bearing Zones

| From (m) | To (m) | Thickness (m) | WBZ Type | S.W.L. (m) | D.D.L. (m) | Yield (L/s) | Hole Depth (m) | Duration (hr) | Salinity (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| 15.20 | 15.80 | 0.60 | Fractured | | | | | | |
| 39.60 | 40.20 | 0.60 | Fractured | 9.10 | | 0.19 | | | |
| 43.80 | 44.40 | 0.60 | Fractured | | | 0.06 | | | |
| 57.30 | 57.90 | 0.60 | Fractured | | | 0.06 | | | |

## Drillers Log

| From (m) | To (m) | Thickness (m) | Drillers Description | Geological Material | Comments |
|---|---|---|---|---|---|
| 0.00 | 0.91 | 0.91 | Topsoil | Topsoil | |
| 0.91 | 9.14 | 8.23 | Clay Yellow | Clay | |
| 9.14 | 13.71 | 4.57 | Shale Grey | Shale | |
| 13.71 | 91.44 | 77.73 | Shale Black Water Supply | Shale | |
| 0.91 | 9.14 | 8.23 | Pebbles | Gravel | |

***** End of GW020547 *****

# WaterNSW
## Work Summary

### GW060794

**Licence:** 10WA108208
**Licence Status:** CURRENT

**Authorised Purpose(s):** STOCK,DOMESTIC
**Intended Purpose(s):** STOCK, DOMESTIC

**Work Type:** Bore open thru rock
**Work Status:**
**Construct.Method:** Rotary Air
**Owner Type:** Private

**Commenced Date:**
**Completion Date:** 01/02/1985
**Final Depth:** 78.10 m
**Drilled Depth:** 78.10 m

**Contractor Name:** (None)
**Driller:** Neil John Mason
**Assistant Driller:**

**Property:** POLI INVESTMENTS 120 Castle Rd ORCHARD HILLS 2748 NSW
**GWMA:** -
**GW Zone:** -
**Standing Water Level (m):**
**Salinity Description:**
**Yield (L/s):**

## Site Details

**Site Chosen By:**

| | County | Parish | Cadastre |
|---|---|---|---|
| **Form A:** | CUMBERLAND | CLAREMONT | L15 DP263498 (12) |
| **Licensed:** | CUMBERLAND | CLAREMONT | Whole Lot 42//879632 |

**Region:** 10 - Sydney South Coast
**River Basin:** 212 - HAWKESBURY RIVER
**Area/District:**
**CMA Map:** 9030-3N
**Grid Zone:**
**Scale:**

**Elevation:** 0.00 m (A.H.D.)
**Elevation Source:** (Unknown)
**Northing:** 6259780.000
**Easting:** 289484.000
**Latitude:** 33°46'52.3"S
**Longitude:** 150°43'35.2"E

**GS Map:** -
**MGA Zone:** 56
**Coordinate Source:** GD.,ACC.MAP

## Water Bearing Zones

| From (m) | To (m) | Thickness (m) | WBZ Type | S.W.L. (m) | D.D.L. (m) | Yield (L/s) | Hole Depth (m) | Duration (hr) | Salinity (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| 18.80 | 18.90 | 0.10 | Fractured | | | 0.02 | | | |
| 75.00 | 75.20 | 0.20 | Fractured | | | 0.06 | | | |

## Drillers Log

| From (m) | To (m) | Thickness (m) | Drillers Description | Geological Material | Comments |
|---|---|---|---|---|---|
| 0.00 | 6.20 | 6.20 | Clay | Clay | |
| 6.20 | 78.10 | 71.90 | Slate Or Shale | Slate | |

***** End of GW060794 *****

# WaterNSW
## Work Summary

### GW103764

**Licence:** 10CA109341
**Licence Status:** CURRENT

**Authorised Purpose(s):** IRRIGATION
**Intended Purpose(s):** IRRIGATION

**Work Type:** Bore
**Work Status:**
**Construct.Method:** Rotary
**Owner Type:**

**Commenced Date:**
**Completion Date:** 06/10/1995
**Final Depth:** 231.60 m
**Drilled Depth:** 231.60 m

**Contractor Name:** Ultra Drilling
**Driller:** Rodney Ronald Orchard
**Assistant Driller:**

**Property:** POLESE 126-164 Castle Road ORCHARD HILLS 2748 NSW
**GWMA:** -
**GW Zone:** -
**Standing Water Level (m):**
**Salinity Description:**
**Yield (L/s):**

## Site Details

**Site Chosen By:**

| | County | Parish | Cadastre |
|---|---|---|---|
| **Form A:** | CUMBERLAND | CLAREMONT | 1//239091 |
| **Licensed:** | CUMBERLAND | CLAREMONT | Whole Lot 1//239091 |

**Region:** 10 - Sydney South Coast
**River Basin:** - Unknown
**Area/District:**
**CMA Map:**
**Grid Zone:**
**Scale:**

**Elevation:** 0.00 m (A.H.D.)
**Elevation Source:** Unknown
**Northing:** 6259844.000
**Easting:** 289362.000
**Latitude:** 33°46'50.2"S
**Longitude:** 150°43'30.5"E

**GS Map:** -
**MGA Zone:** 56
**Coordinate Source:** Unknown

## Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

| Hole | Pipe | Component | Type | From (m) | To (m) | Outside Diameter (mm) | Inside Diameter (mm) | Interval | Details |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | Hole | Hole | 0.00 | 167.50 | 171 | | | Rotary Air |
| 1 | | Hole | Hole | 167.50 | 231.60 | 151 | | | Rotary Air |
| 1 | 1 | Casing | Stainless Steel | 0.00 | 167.80 | 140 | | | Suspended in Clamps, Welded |

## Water Bearing Zones

| From (m) | To (m) | Thickness (m) | WBZ Type | S.W.L. (m) | D.D.L. (m) | Yield (L/s) | Hole Depth (m) | Duration (hr) | Salinity (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| 208.00 | 209.50 | 1.50 | Unknown | | | 0.42 | 214.00 | 01:00:00 | |
| 216.50 | 219.00 | 2.50 | Unknown | | | 0.83 | 230.00 | 01:00:00 | |

## Drillers Log

| From (m) | To (m) | Thickness (m) | Drillers Description | Geological Material | Comments |
|---|---|---|---|---|---|
| 0.00 | 0.60 | 0.60 | TOPSOIL | Topsoil | |
| 0.60 | 6.40 | 5.80 | CLAY | Clay | |
| 6.40 | 11.20 | 4.80 | SHALE | Shale | |
| 11.20 | 123.40 | 112.20 | SHALE | Shale | |
| 123.40 | 216.40 | 93.00 | SANDSTONE | Sandstone | |
| 216.40 | 217.30 | 0.90 | SHALE | Shale | |
| 217.30 | 231.60 | 14.30 | SANDSTONE | Sandstone | |

## Remarks

06/10/1995: Form A Remarks:
PREVIOUS LIC NO:10BL157019

***** End of GW103764 *****

# WaterNSW
## Work Summary

### GW112643

**Licence:**
**Licence Status:**

**Authorised Purpose(s):**
**Intended Purpose(s):** MONITORING BORE

**Work Type:** Bore
**Work Status:** Equipped
**Construct.Method:** Auger - Solid
**Owner Type:** Private

**Commenced Date:**
**Completion Date:** 28/08/2009
**Final Depth:** 6.00 m
**Drilled Depth:** 6.00 m

**Contractor Name:** Numac Drilling Services
**Driller:** Christopher Mcmullen
**Assistant Driller:**

**Property:**
**GWMA:**
**GW Zone:**
**Standing Water Level (m):**
**Salinity Description:**
**Yield (L/s):**

## Site Details

**Site Chosen By:**

| | County | Parish | Cadastre |
|---|---|---|---|
| **Form A:** | CUMBERLAND | CLAREMONT | 1//1042373 |
| **Licensed:** | | | |

**Region:** 10 - Sydney South Coast
**River Basin:** - Unknown
**Area/District:**
**CMA Map:**
**Grid Zone:**
**Scale:**

**Elevation:** 0.00 m (A.H.D.)
**Elevation Source:** Unknown
**Northing:** 6261274.000
**Easting:** 292246.000
**Latitude:** 33°46'05.8"S
**Longitude:** 150°45'23.8"E

**GS Map:** -
**MGA Zone:** 56
**Coordinate Source:** Unknown

## Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure

Cemented; S-Sump; CE-Centralisers

| Hole | Pipe | Component | Type | From (m) | To (m) | Outside Diameter (mm) | Inside Diameter (mm) | Interval | Details |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | Hole | Hole | 0.00 | 6.00 | 150 | | | Auger - Solid Flight |
| 1 | | Annulus | Waterworn/Rounded | 2.50 | 6.00 | | | | Graded |
| 1 | 1 | Casing | Pvc Class 18 | 0.00 | 3.00 | 60 | 50 | | Seated on Bottom, Other |
| 1 | 1 | Opening | Slots - Horizontal | 3.00 | 6.00 | 60 | | 0 | Casing - Machine Slotted, PVC Class 18, Other, SL: 40.0mm, A: 3.80mm |

## Water Bearing Zones

| From (m) | To (m) | Thickness (m) | WBZ Type | S.W.L. (m) | D.D.L. (m) | Yield (L/s) | Hole Depth (m) | Duration (hr) | Salinity (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| 3.00 | 4.00 | 1.00 | Unknown | | | | | | |

## Drillers Log

| From (m) | To (m) | Thickness (m) | Drillers Description | Geological Material | Comments |
|---|---|---|---|---|---|
| 0.00 | 1.00 | 1.00 | FILL | Fill | |
| 1.00 | 3.00 | 2.00 | SAND, MINOR CLAY | Sand | |
| 3.00 | 6.00 | 3.00 | CLAY AND GRAVEL | Clay | |

## Remarks

22/07/2014: Nat Carling, 22-July-2014; Added status & work name, updated work type.

***** End of GW112643 *****

# WaterNSW
## Work Summary

### GW112644

**Licence:**
**Licence Status:**

**Authorised Purpose(s):**
**Intended Purpose(s):** MONITORING BORE

**Work Type:** Bore
**Work Status:** Equipped
**Construct.Method:** Auger - Solid
**Owner Type:** Private

**Commenced Date:**
**Completion Date:** 28/08/2009
**Final Depth:** 6.00 m
**Drilled Depth:** 6.00 m

**Contractor Name:** Numac Drilling Services
**Driller:** Christopher Mcmullen
**Assistant Driller:**

**Property:**
**GWMA:**
**GW Zone:**
**Standing Water Level (m):**
**Salinity Description:**
**Yield (L/s):**

## Site Details

**Site Chosen By:**

| | County | Parish | Cadastre |
|---|---|---|---|
| **Form A:** | CUMBERLAND | CLAREMONT | 1//1042373 |
| **Licensed:** | | | |

**Region:** 10 - Sydney South Coast
**River Basin:** - Unknown
**Area/District:**
**CMA Map:**
**Grid Zone:**
**Scale:**

**Elevation:** 0.00 m (A.H.D.)
**Elevation Source:** Unknown
**Northing:** 6261250.000
**Easting:** 292267.000
**Latitude:** 33°46'06.6"S
**Longitude:** 150°45'24.6"E

**GS Map:** -
**MGA Zone:** 56
**Coordinate Source:** Unknown

## Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure

Cemented; S-Sump; CE-Centralisers

| Hole | Pipe | Component | Type | From (m) | To (m) | Outside Diameter (mm) | Inside Diameter (mm) | Interval | Details |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | Hole | Hole | 0.00 | 6.00 | 150 | | | Auger - Solid Flight |
| 1 | | Annulus | Waterworn/Rounded | 2.50 | 6.00 | | | | Graded |
| 1 | 1 | Casing | Pvc Class 18 | 0.00 | 3.00 | 60 | 50 | | Seated on Bottom, Other |
| 1 | 1 | Opening | Slots - Horizontal | 3.00 | 6.00 | 60 | | 0 | Casing - Machine Slotted, PVC Class 18, Other, SL: 40.0mm, A: 3.80mm |

## Water Bearing Zones

| From (m) | To (m) | Thickness (m) | WBZ Type | S.W.L. (m) | D.D.L. (m) | Yield (L/s) | Hole Depth (m) | Duration (hr) | Salinity (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| 3.00 | 4.00 | 1.00 | Unknown | | | | | | |

## Drillers Log

| From (m) | To (m) | Thickness (m) | Drillers Description | Geological Material | Comments |
|---|---|---|---|---|---|
| 0.00 | 1.00 | 1.00 | FILL | Fill | |
| 1.00 | 3.00 | 2.00 | SAND ,MINOR CLAY | Sand | |
| 3.00 | 6.00 | 3.00 | CLAY ,MINOR GRAVEL | Clay | |

## Remarks

22/07/2014: Nat Carling, 22-July-2014; Added status & work name, updated work type.

***** End of GW112644 *****

# WaterNSW
## Work Summary

### GW112645

**Licence:**
**Licence Status:**

**Authorised Purpose(s):**
**Intended Purpose(s):** MONITORING BORE

**Work Type:** Bore
**Work Status:** Equipped
**Construct.Method:** Auger - Solid
**Owner Type:** Private

**Commenced Date:**
**Completion Date:** 28/08/2009
**Final Depth:** 6.00 m
**Drilled Depth:** 6.00 m

**Contractor Name:** Numac Drilling Services
**Driller:** Christopher Mcmullen
**Assistant Driller:**

**Property:**
**GWMA:**
**GW Zone:**
**Standing Water Level (m):**
**Salinity Description:**
**Yield (L/s):**

## Site Details

**Site Chosen By:**

| | County | Parish | Cadastre |
|---|---|---|---|
| **Form A:** | CUMBERLAND | CLAREMONT | 1//1042373 |
| **Licensed:** | | | |

**Region:** 10 - Sydney South Coast
**River Basin:** - Unknown
**Area/District:**
**CMA Map:**
**Grid Zone:**
**Scale:**

**Elevation:** 0.00 m (A.H.D.)
**Elevation Source:** Unknown
**Northing:** 6261260.000
**Easting:** 292283.000
**Latitude:** 33°46'06.3"S
**Longitude:** 150°45'25.2"E

**GS Map:** -
**MGA Zone:** 56
**Coordinate Source:** Unknown

## Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure

Cemented; S-Sump; CE-Centralisers

| Hole | Pipe | Component | Type | From (m) | To (m) | Outside Diameter (mm) | Inside Diameter (mm) | Interval | Details |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | Hole | Hole | 0.00 | 6.00 | 150 | | | Auger - Solid Flight |
| 1 | | Annulus | Waterworn/Rounded | 2.50 | 6.00 | | | | Graded |
| 1 | 1 | Casing | Pvc Class 18 | 0.00 | 3.00 | 60 | 50 | | Seated on Bottom, Other |
| 1 | 1 | Opening | Slots - Horizontal | 3.00 | 6.00 | 60 | | 0 | Casing - Machine Slotted, PVC Class 18, Other, SL: 40.0mm, A: 3.80mm |

## Water Bearing Zones

| From (m) | To (m) | Thickness (m) | WBZ Type | S.W.L. (m) | D.D.L. (m) | Yield (L/s) | Hole Depth (m) | Duration (hr) | Salinity (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| 3.00 | 4.00 | 1.00 | Unknown | | | | | | |

## Drillers Log

| From (m) | To (m) | Thickness (m) | Drillers Description | Geological Material | Comments |
|---|---|---|---|---|---|
| 0.00 | 1.00 | 1.00 | FILL | Fill | |
| 1.00 | 3.00 | 2.00 | SAND. MNOR CLAY | Sand | |
| 3.00 | 6.00 | 3.00 | CLAY , MINOR GRAVEL | Clay | |

## Remarks

22/07/2014: Nat Carling, 22-July-2014; Added status & work name, updated work type.

***** End of GW112645 *****

# WaterNSW
## Work Summary

### GW113279

**Licence:** 10BL601835
**Licence Status:** ACTIVE

**Authorised Purpose(s):** MONITORING BORE
**Intended Purpose(s):** MONITORING BORE

**Work Type:** Bore
**Work Status:** Equipped
**Construct.Method:**
**Owner Type:** Local Govt

**Commenced Date:**
**Completion Date:** 02/05/2007
**Final Depth:** 7.50 m
**Drilled Depth:** 7.50 m

**Contractor Name:** (None)
**Driller:** Unkown Unknown
**Assistant Driller:**

**Property:** THE PROSPECT COUNTY COUNCIL 107 Smith St SOUTH PENRITH 2750 NSW
**GWMA:** -
**GW Zone:** -
**Standing Water Level (m):**
**Salinity Description:**
**Yield (L/s):**

## Site Details

**Site Chosen By:**

| | County | Parish | Cadastre |
|---|---|---|---|
| **Form A:** | CUMBERLAND | MULGOA | 2//216840 |
| **Licensed:** | CUMBERLAND | MULGOA | Whole Lot 2//216840 |

**Region:** 10 - Sydney South Coast
**River Basin:** - Unknown
**Area/District:**
**CMA Map:**
**Grid Zone:**
**Scale:**

**Elevation:** 0.00 m (A.H.D.)
**Elevation Source:** Unknown
**Northing:** 6261289.000
**Easting:** 287781.000
**Latitude:** 33°46'02.2"S
**Longitude:** 150°42'30.3"E

**GS Map:** -
**MGA Zone:** 56
**Coordinate Source:** Unknown

## Remarks

30/07/2014: Nat Carling, 30-July-2014; Added status, drill method & depth, updated owner type.

***** End of GW113279 *****

# WaterNSW
## Work Summary

### GW113280

**Licence:**
**Licence Status:**

**Authorised Purpose(s):**
**Intended Purpose(s):** MONITORING BORE

**Work Type:** Bore
**Work Status:** Equipped
**Construct.Method:**
**Owner Type:** Local Govt

**Commenced Date:**
**Completion Date:** 02/05/2007
**Final Depth:** 8.20 m
**Drilled Depth:** 8.20 m

**Contractor Name:** (None)
**Driller:** Unkown Unknown
**Assistant Driller:**

**Property:**
**GWMA:**
**GW Zone:**
**Standing Water Level (m):**
**Salinity Description:**
**Yield (L/s):**

## Site Details

**Site Chosen By:**

| | County | Parish | Cadastre |
|---|---|---|---|
| **Form A:** | CUMBERLAND | MULGOA | 2//216840 |
| **Licensed:** | | | |

**Region:** 10 - Sydney South Coast
**River Basin:** - Unknown
**Area/District:**
**CMA Map:**
**Grid Zone:**
**Scale:**

**Elevation:** 0.00 m (A.H.D.)
**Elevation Source:** Unknown
**Northing:** 6261245.000
**Easting:** 287775.000
**Latitude:** 33°46'03.6"S
**Longitude:** 150°42'30.1"E

**GS Map:** -
**MGA Zone:** 56
**Coordinate Source:** Unknown

## Remarks

30/07/2014: Nat Carling, 30-July-2014; Added status, drill method & depth, updated owner type.

***** End of GW113280 *****

# WaterNSW
## Work Summary

### GW113281

**Licence:**
**Licence Status:**

**Authorised Purpose(s):**
**Intended Purpose(s):** MONITORING BORE

**Work Type:** Bore
**Work Status:** Equipped
**Construct.Method:**
**Owner Type:** Local Govt

**Commenced Date:**
**Completion Date:** 02/05/2007
**Final Depth:** 2.85 m
**Drilled Depth:** 2.85 m

**Contractor Name:** (None)
**Driller:** Unkown Unknown
**Assistant Driller:**

**Property:**
**GWMA:**
**GW Zone:**
**Standing Water Level (m):**
**Salinity Description:**
**Yield (L/s):**

## Site Details

**Site Chosen By:**

| | County | Parish | Cadastre |
|---|---|---|---|
| **Form A:** | CUMBERLAND | MULGOA | 2//216840 |
| **Licensed:** | | | |

**Region:** 10 - Sydney South Coast
**River Basin:** - Unknown
**Area/District:**
**CMA Map:**
**Grid Zone:**
**Scale:**

**Elevation:** 0.00 m (A.H.D.)
**Elevation Source:** Unknown
**Northing:** 6261252.000
**Easting:** 287737.000
**Latitude:** 33°46'03.3"S
**Longitude:** 150°42'28.6"E

**GS Map:** -
**MGA Zone:** 56
**Coordinate Source:** Unknown

## Remarks

30/07/2014: Nat Carling, 30-July-2014; Added status, drill method & depth, updated owner type.

***** End of GW113281 *****

# WaterNSW
## Work Summary

### GW113282

**Licence:**
**Licence Status:**

**Authorised Purpose(s):**
**Intended Purpose(s):** MONITORING BORE

**Work Type:** Bore
**Work Status:** Equipped
**Construct.Method:**
**Owner Type:** Local Govt

**Commenced Date:**
**Completion Date:** 02/05/2007
**Final Depth:** 7.00 m
**Drilled Depth:** 7.00 m

**Contractor Name:** (None)
**Driller:** Unkown Unknown
**Assistant Driller:**

**Property:**
**GWMA:**
**GW Zone:**
**Standing Water Level (m):**
**Salinity Description:**
**Yield (L/s):**

## Site Details

**Site Chosen By:**

| | County | Parish | Cadastre |
|---|---|---|---|
| **Form A:** | CUMBERLAND | MULGOA | 2//216840 |
| **Licensed:** | | | |

**Region:** 10 - Sydney South Coast
**River Basin:** - Unknown
**Area/District:**
**CMA Map:**
**Grid Zone:**
**Scale:**

**Elevation:** 0.00 m (A.H.D.)
**Elevation Source:** Unknown
**Northing:** 6261291.000
**Easting:** 287742.000
**Latitude:** 33°46'02.1"S
**Longitude:** 150°42'28.8"E

**GS Map:** -
**MGA Zone:** 56
**Coordinate Source:** Unknown

## Remarks

30/07/2014: Nat Carling, 30-July-2014; Added status, drill method & depth, updated owner type.

***** End of GW113282 *****

# WaterNSW
## Work Summary

### GW113283

**Licence:**
**Licence Status:**

**Authorised Purpose(s):**
**Intended Purpose(s):** MONITORING BORE

**Work Type:** Bore
**Work Status:** Equipped
**Construct.Method:**
**Owner Type:** Local Govt

**Commenced Date:**
**Completion Date:** 02/05/2007
**Final Depth:** 2.80 m
**Drilled Depth:** 2.80 m

**Contractor Name:** (None)
**Driller:** Unkown Unknown
**Assistant Driller:**

**Property:**
**GWMA:**
**GW Zone:**
**Standing Water Level (m):**
**Salinity Description:**
**Yield (L/s):**

## Site Details

**Site Chosen By:**

| | County | Parish | Cadastre |
|---|---|---|---|
| **Form A:** | CUMBERLAND | MULGOA | 2//216840 |
| **Licensed:** | | | |

**Region:** 10 - Sydney South Coast
**River Basin:** - Unknown
**Area/District:**
**CMA Map:**
**Grid Zone:**
**Scale:**

**Elevation:** 0.00 m (A.H.D.)
**Elevation Source:** Unknown
**Northing:** 6261271.000
**Easting:** 287758.000
**Latitude:** 33°46'02.7"S
**Longitude:** 150°42'29.4"E

**GS Map:** -
**MGA Zone:** 56
**Coordinate Source:** Unknown

## Remarks

30/07/2014: Nat Carling, 30-July-2014; Added status, drill method & depth, updated owner type.

***** End of GW113283 *****

# Appendix D Historical Aerial Photographs

**Legend:**
Approximate Site Boundary

JBS&G

| | |
|---|---|
| Job No: 59831 | |
| Client: TAFE NSW | |
| Version: Aerials | Date 11/11/2020 |
| Drawn By: AS | Checked By: SG |
| Scale 1:5,000 | |

0 100 200
metres

Coord. Sys. GDA 1994 MGA Zone 56

**2 - 44 O'Connell Street, Kingswood, NSW**

**HISTORICAL AERIAL IMAGERY 1943**

**FIGURE 1943**

File Name: \\JBSG-NSW-FS01\Company Data\Projects\TAFE NSW\59831 WSCH combined DSI Geotech\GIS\Maps\Aerials\59831_1943.mxd
Reference: NSW DFSI, 2019

**Legend:**
Approximate Site Boundary

JBS&G

Job No: 59831

Client: TAFE NSW

| Version: Aerials | Date 11/11/2020 |
|---|---|
| Drawn By: AS | Checked By: SG |

Scale 1:5,000

0 100 200
metres

Coord. Sys. GDA 1994 MGA Zone 56

**2 - 44 O'Connell Street, Kingswood, NSW**

**HISTORICAL AERIAL IMAGERY 1956**

**FIGURE 1956**

File Name: N:\Projects\TAFE NSW\59831 WSCH combined DSI Geotech\GIS\Maps\Aerials\59831_1956.mxd
Reference: NSW DFSI, 2019

**Legend:**

Approximate Site Boundary

JBS&G

Job No: 59831

Client: TAFE NSW

| Version: Aerials | Date 11/11/2020 |
|---|---|
| Drawn By: AS | Checked By: SG |

Scale 1:5,000

0 100 200

metres

Coord. Sys. GDA 1994 MGA Zone 56

**2 - 44 O'Connell Street, Kingswood, NSW**

**HISTORICAL AERIAL IMAGERY 1961**

**FIGURE 1961**

File Name: N:\Projects\TAFE NSW\59831 WSCH combined DSI Geotech\GIS\Maps\Aerials\59831_1961.mxd
Reference: NSW DFSI, 2019

**Legend:**

Approximate Site Boundary

JBS&G

Job No: 59831

Client: TAFE NSW

| Version: Aerials | Date 11/11/2020 |
|---|---|
| Drawn By: AS | Checked By: SG |

Scale 1:5,000

0 100 200

metres

Coord. Sys. GDA 1994 MGA Zone 56

**2 - 44 O'Connell Street, Kingswood, NSW**

**HISTORICAL AERIAL IMAGERY 1970**

**FIGURE 1970**

File Name: \\JBSG-NSW-FS01\Company Data\Projects\TAFE NSW\59831 WSCH combined DSI Geotech\GIS\Maps\Aerials\59831_1970.mxd
Reference: NSW DFSI, 2019

**Legend:**
Approximate Site Boundary

JBS&G

Job No: 59831

Client: TAFE NSW

| Version: Aerials | Date 11/11/2020 |
|---|---|
| Drawn By: AS | Checked By: SG |

Scale 1:5,000

0 100 200
metres

Coord. Sys. GDA 1994 MGA Zone 56

**2 - 44 O'Connell Street, Kingswood, NSW**

**HISTORICAL AERIAL IMAGERY 1984**

**FIGURE 1984**

File Name: N:\Projects\TAFE NSW\59831 WSCH combined DSI Geotech\GIS\Maps\Aerials\59831_1984.mxd
Reference: NSW DFSI, 2019

**Legend:**

Approximate Site Boundary

JBS&G

| | |
|---|---|
| Job No: 59831 | |
| Client: TAFE NSW | |
| Version: Aerials | Date 2/12/2020 |
| Drawn By: AS | Checked By: SG |
| Scale 1:5,000 | |

0 100 200

metres

Coord. Sys. GDA 1994 MGA Zone 56

**2 - 44 O'Connell Street, Kingswood, NSW**

**HISTORICAL AERIAL IMAGERY 1991**

**FIGURE 1991**

File Name: N:\Projects\TAFE NSW\59831 WSCH combined PSI Geotech\GIS\Maps\Aerials\59831_1991.mxd
Reference: NSW DFSI, 2019

**Legend:**

Approximate Site Boundary

JBS&G

Job No: 59831

Client: TAFE NSW

| Version: Aerials | Date 11/11/2020 |
|---|---|
| Drawn By: AS | Checked By: SG |

Scale 1:5,000

0 100 200

metres

Coord. Sys. GDA 1994 MGA Zone 56

**2 - 44 O'Connell Street, Kingswood, NSW**

**HISTORICAL AERIAL IMAGERY 2002**

**FIGURE 2002**

File Name: N:\Projects\TAFE NSW\59831 WSCH combined DSI Geotech\GIS\Maps\Aerials\59831_2002.mxd
Reference: NSW DFSI, 2019

**Legend:**

Approximate Site Boundary

JBS&G

Job No: 59831

Client: TAFE NSW

| Version: Aerials | Date 11/11/2020 |
|---|---|
| Drawn By: AS | Checked By: SG |

Scale 1:5,000

0 100 200

metres

Coord. Sys. GDA 1994 MGA Zone 56

**2 - 44 O'Connell Street, Kingswood, NSW**

**HISTORICAL AERIAL IMAGERY 2010**

**FIGURE 2010**

File Name: N:\Projects\TAFE NSW\59831 WSCH combined DSI Geotech\GIS\Maps\Aerials\59831_2010.mxd
Reference: www.nearmap.com - Imagery 21-09-2010

**Legend:**

Approximate Site Boundary

JBS&G

| | |
|---|---|
| Job No: 59831 | |
| Client: TAFE NSW | |
| Version: Aerials | Date 11/11/2020 |
| Drawn By: AS | Checked By: SG |
| Scale 1:5,000 | |

0 100 200

metres

Coord. Sys. GDA 1994 MGA Zone 56

**2 - 44 O'Connell Street, Kingswood, NSW**

**HISTORICAL AERIAL IMAGERY 2020**

**FIGURE 2020**

File Name: N:\Projects\TAFE NSW\59831 WSCH combined DSI Geotech\GIS\Maps\Aerials\59831_2020.mxd
Reference: www.nearmap.com - Imagery 01-10-2010

# Appendix E Historical Land Titles

**ABN: 36 092 724 251**
**Ph: 02 9099 7400**
(Ph: 0412 199 304)

**Level 14, 135 King Street, Sydney**
**Sydney 2000**
**GPO Box 4103 Sydney NSW 2001**
**DX 967 Sydney**

**Summary of Owners Report**

**Address: 2 to 44 O'Connell Street, Kingswood**

**Description: - Lot 1 D.P. 866081**

**As regards the part numbered (1) on the attached Cadastral records Enquiry Report**

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|---|---|---|
| 22.04.1903<br>(1903 to 1964) | Mary Ann Molloy (Spinster)<br>**(As regards the northern part)** | Book 734 No. 274 |
| 22.04.1903<br>(1903 to 1964) | Bernard William Molloy<br>**(as regards the southern part)** | Book 734 No. 274 |
| | **Continued as regards the whole** | |
| 21.10.1964<br>(1964 to 1988) | Paul Vassallo (Gardener) | Book 2732 No. 878<br>Now<br>5/205204 |
| 22.01.1988<br>(1988 to 2016) | Minister for Education<br>(For the purpose of the Technical and Further Education Act), 1974) | 5/205204<br>Now<br>1/866081 |

**As regards the part numbered (2) on the attached Cadastral records Enquiry Report**

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|---|---|---|
| 22.04.1903<br>(1903 to 1964) | Mary Ann Molloy (Spinster)<br>**(As regards the north eastern part)** | Book 734 No. 274 |
| 22.04.1903<br>(1903 to 1964) | Bernard William Molloy<br>**(as regards the south eastern part)** | Book 734 No. 274 |
| 22.04.1903<br>(1903 to 1964) | John Molloy (Farmer)<br>**(As regards the north western part)** | Book 734 No. 274 |
| 22.04.1903<br>(1903 to 1922) | Susannah Molloy (Spinster)<br>**(as regards the south western part)** | Book 734 No. 274 |
| 07.04.1922<br>(1922 to 1964) | Mary Ann Molloy (Spinster)<br>**(As regards the south western part)** | Book 1257 No. 629 |
| | **Continued as regards the whole** | |
| 27.08.1964<br>(1964 to 1974) | Klara Skutela (Widow) | Book 2712 No. 207 |
| 28.06.1974<br>(1974 to 2016) | Minister for Education<br>(For the purpose of the Technical and Further Education Act), 1974) | Gazette<br>(Book 3277 No. 878)<br>Now<br>1/866081 |

**ABN: 36 092 724 251**
**Ph: 02 9099 7400**
(Ph: 0412 199 304)

**Level 14, 135 King Street, Sydney**
**Sydney 2000**
**GPO Box 4103 Sydney NSW 2001**
**DX 967 Sydney**

**As regards the part numbered (3) & (4) on the attached Cadastral records Enquiry Report**

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|---|---|---|
| 22.04.1903<br>(1903 to 1964) | Mary Ann Molloy (Spinster)<br>**(As regards the northern part)** | Book 734 No. 274 |
| 22.04.1903<br>(1903 to 1964) | Bernard William Molloy<br>**(as regards the southern part)** | Book 734 No. 274 |
| | **Continued as regards the whole** | |
| 27.08.1964<br>(1964 to 1986) | Giovanni Muscara (Market Gardener)<br>Carmella Muscara (Married Woman) | Book 2712 No. 599<br>Now<br>Vol 14665 Fol 249<br>(The period 1964 to 1986 has not been searched) |
| 03.07.1986<br>(1986 to 2016) | Minister for Education<br>(For the purpose of the Technical and Further Education Act), 1974) | Vol 14665 Fol 249<br>Now<br>1/866081 |

**As regards the part numbered (5) on the attached Cadastral records Enquiry Report**

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|---|---|---|
| 22.04.1903<br>(1903 to 1964) | John Molloy (Farmer) | Book 734 No. 274 |
| 20.07.1964<br>(1964 to 1977) | Andrew Matsak (Welder)<br>Nadia Matsak (Married Woman) | Book 2709 No. 176 |
| 02.12.1977<br>(1977 to 2016) | Minister for Education | Book 3301 No. 979<br>Now<br>1/866081 |

**As regards the part numbered (6) on the attached Cadastral records Enquiry Report**

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|---|---|---|
| 22.04.1903<br>(1903 to 1964) | John Molloy (Farmer)<br>**(As regards the northern part)** | Book 734 No. 274 |
| 22.04.1903<br>(1903 to 1922) | Susannah Molloy (Spinster)<br>**(as regards the southern part)** | Book 734 No. 274 |
| 07.04.1922<br>(1922 to 1964) | Mary Ann Molloy (Spinster)<br>**(As regards the southern part)** | Book 1257 No. 629 |
| | **Continued as regards the whole** | |
| 21.10.1964<br>(1964 to 1974) | Joseph Rohozynsky (Timber Merchant)<br>Anna Rohozynsky (Married Woman) | Book 2722 No. 354 |
| 28.06.1974<br>(1974 to 2016) | Minister for Education<br>(For the purpose of the Technical and Further Education Act), 1974) | Gazette<br>(Book 3301 No. 980)<br>Now<br>1/866081<br>(The period 1964 to 1974 has not been searched) |

**ABN: 36 092 724 251**
**Ph: 02 9099 7400**
(Ph: 0412 199 304)

**Level 14, 135 King Street, Sydney**
**Sydney 2000**
**GPO Box 4103 Sydney NSW 2001**
**DX 967 Sydney**

**As regards the part numbered (7) on the attached Cadastral records Enquiry Report**

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|---|---|---|
| 22.04.1903<br>(1903 to 1964) | John Molloy (Farmer)<br>**(As regards the northern part)** | Book 734 No. 274 |
| 22.04.1903<br>(1903 to 1922) | Susannah Molloy (Spinster)<br>**(as regards the southern part)** | Book 734 No. 274 |
| 07.04.1922<br>(1922 to 1964) | Mary Ann Molloy (Spinster)<br>**(As regards the southern part)** | Book 1257 No. 629 |
| | | |
| 27.11.1964<br>(1964 to 1974) | Thomas Robert Gale (Carpenter)<br>Therese May Mary Gale (Married Woman) | Book 2726 No. 491 |
| 28.06.1974<br>(1974 to 2016) | Minister for Education<br>(For the purpose of the Technical and Further Education Act), 1974) | Gazette<br>(Book 3179 No. 47)<br>Now<br>1/866081<br>(The period 1964 to 1974 has not been searched) |

**As regards the part numbered (8) on the attached Cadastral records Enquiry Report**

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|---|---|---|
| 22.04.1903<br>(1903 to 1964) | Bernard William Molloy<br>**(as regards the eastern part)** | Book 734 No. 274 |
| 22.04.1903<br>(1903 to 1922) | Susannah Molloy (Spinster)<br>**(as regards the western part)** | Book 734 No. 274 |
| 07.04.1922<br>(1922 to 1964) | Mary Ann Molloy (Spinster)<br>**(As regards the western part)** | Book 1257 No. 629 |
| | **Continued as regards the whole** | |
| 10.07.1964<br>(1964 to 1974) | Michael Joseph Scicluna (Labourer)<br>Mary Juliet Scicluna (Married Woman) | Book 2820 No. 425 |
| 28.06.1974<br>(1974 to 2016) | Minister for Education<br>(For the purpose of the Technical and Further Education Act), 1974) | Gazette<br>Now<br>1/866081 |

**As regards the part numbered (9) on the attached Cadastral records Enquiry Report**

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|---|---|---|
| 22.04.1903<br>(1903 to 1966) | Bernard William Molloy<br>**(as regards the eastern part)** | Book 734 No. 274 |
| 22.04.1903<br>(1903 to 1922) | Susannah Molloy (Spinster)<br>**(as regards the western part)** | Book 734 No. 274 |
| 07.04.1922<br>(1922 to 1966) | Mary Ann Molloy (Spinster)<br>**(As regards the western part)** | Book 1257 No. 629 |
| | **Continued as regards the whole** | |
| 05.01.1966<br>(1966 to 1966) | E.L.P. Development Pty Limited | Book 2777 No. 632 |

**ABN: 36 092 724 251**
**Ph: 02 9099 7400**
(Ph: 0412 199 304)

**Level 14, 135 King Street, Sydney**
**Sydney 2000**
**GPO Box 4103 Sydney NSW 2001**
**DX 967 Sydney**

As regards the part numbered (9) on the attached Cadastral records Enquiry Report

| **Date of Acquisition and term held** | **Registered Proprietor(s) & Occupations where available** | **Reference to Title at Acquisition and sale** |
|---|---|---|
| 24.10.1966<br>(1966 to 1971) | Joseph Azzopardi (Market Gardener) | Book 2813 No. 499 |
| 20.10.1971<br>(1971 to 1974) | Ezio Fomiatti (Market Gardener)<br>Maria Fomiatti (Married Woman) | Book 3028 No. 155 |
| 28.06.1974<br>(1974 to 2016) | Minister for Education<br>(For the purpose of the Technical and Further Education Act), 1974) | Gazette<br>Now<br>1/866081 |

**Continued as regards the whole of the subject land**

| **Date of Acquisition and term held** | **Registered Proprietor(s) & Occupations where available** | **Reference to Title at Acquisition and sale** |
|---|---|---|
| 07.11.2016<br>(2016 to date) | # Minister Adminstering the Technical and Further Education Commission Act 1990 | 1/866081 |

# Denotes Current Registered Proprietor

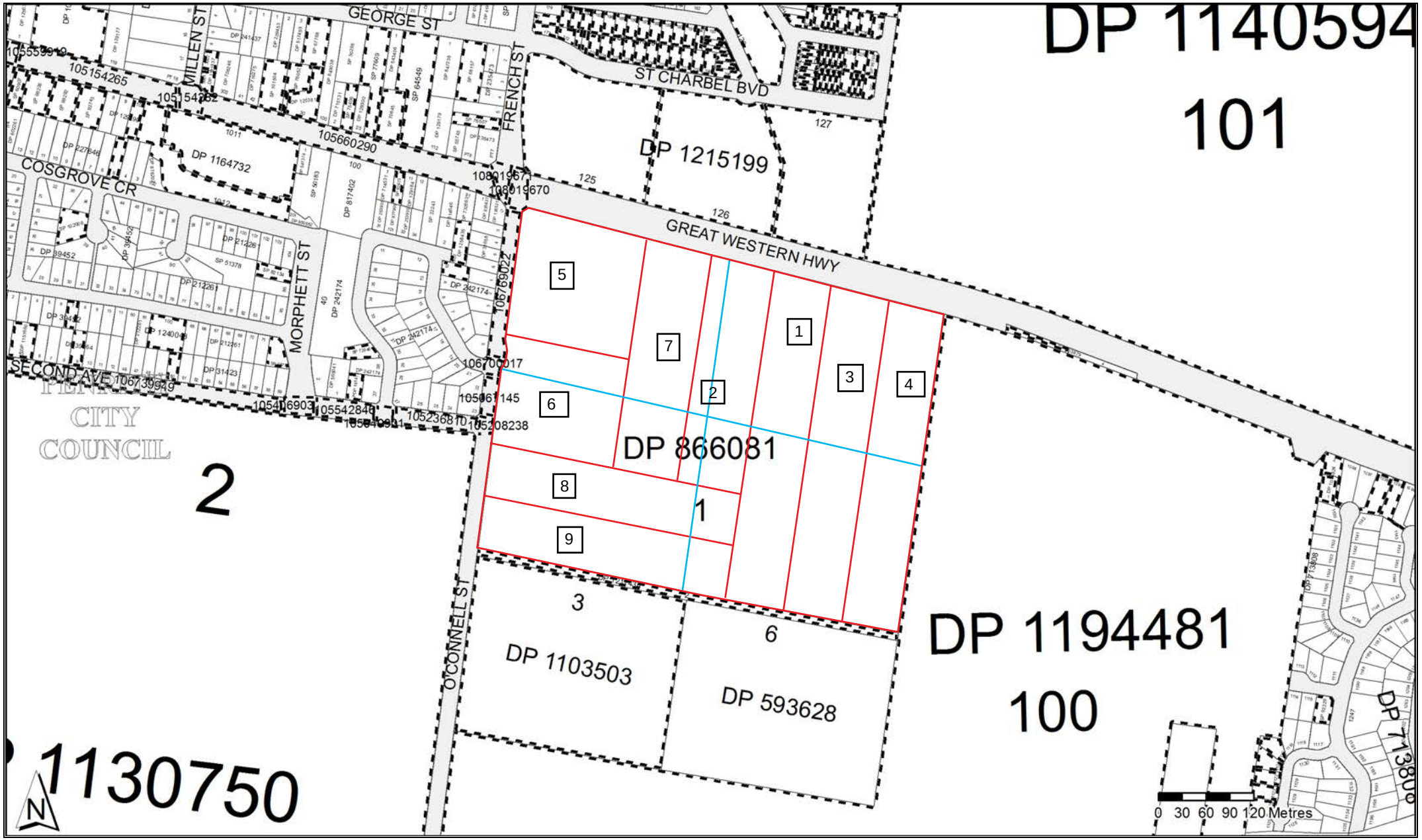
**Easements and Leases: -NIL**

Yours Sincerely
Mark Groll
25 November 2020

# Cadastral Records Enquiry Report : Lot 1 DP 866081

**Ref :** Kingswood 2-44 O?Connell Street

**Locality :** KINGSWOOD
**Parish :** CLAREMONT
**LGA :** PENRITH
**County :** CUMBERLAND







**This information is provided as a searching aid only.Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps**

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 205204 CONTINUED

| FEET | INCHES | METRES | AC | RD | P | HA |
|---|---|---|---|---|---|---|
| 1029 | 3 1/4 | 313.722 | 5 | - | 7 | 2.041 |
| 1032 | 3 1/4 | 314.636 | 5 | - | 21 | 2.076 |
| 1365 | - | 416.052 | 5 | 1 | 32 | 2.2 |
| 1380 | 0 3/4 | 420.693 | 5 | 1 | 34 | 2.21 |
| 1395 | 1 1/2 | 425.234 | 5 | 2 | 6 | 2.241 |
| 1410 | 2 | 429.819 | 5 | 3 | - | 2.327 |
| 2248 | 10 | 685.444 | 5 | 3 | 10 | 3.552 |
| | | | 6 | 2 | 19 | 2.426 |
| | | | 6 | 3 | 2 | 2.676 |
| | | | 6 | 3 | 2 | 2.737 |
| | | | 7 | 3 | 13 | 3.169 |
| | | | 7 | 3 | 27 | 3.2 |
| | | | 8 | - | - | 3.237 |

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 205204

| FEET | INCHES | METRES |
|---|---|---|
| 1 | | 0.025 |
| 5 | | 0.152 |
| 10 | | 0.254 |
| 1 | - | 0.305 |
| 1 | 6 | 0.457 |
| 1 | 6 1/8 | 0.460 |
| 1 | 6 1/4 | 0.464 |
| 2 | 4 | 0.711 |
| 3 | - | 0.914 |
| 3 | 2 | 0.965 |
| 4 | 3 | 1.295 |
| 4 | 6 | 1.372 |
| 4 | 9 | 1.448 |
| 5 | - | 1.524 |
| 5 | 2 | 1.651 |
| 5 | 8 1/2 | 1.740 |
| 5 | 10 | 1.778 |
| 6 | - | 1.829 |
| 6 | 3 | 1.867 |
| 6 | 6 | 1.968 |
| 14 | 4 | 4.978 |
| 19 | 8 | 6.096 |
| 20 | - | 6.096 |
| 33 | - | 10.058 |
| 33 | 8 | 10.262 |
| 44 | 6 | 13.564 |
| 52 | 9 | 15.850 |
| 53 | 5 | 16.383 |
| 56 | 4 3/4 | 17.196 |
| 57 | 9 | 17.399 |
| 58 | 1 | 17.678 |
| 60 | 2 | 18.288 |
| 62 | - | 18.898 |
| 62 | 1 | 19.837 |
| 65 | - | 20.117 |
| 66 | 7 | 20.295 |
| 67 | - | 20.422 |
| 69 | - | 21.031 |
| 83 | 4 | 25.298 |
| 85 | - | 26.010 |
| 91 | 6 1/4 | 27.787 |
| 174 | 6 1/4 | 54.464 |
| 226 | 7 1/2 | 69.075 |
| 231 | - | 70.409 |
| 248 | 8 | 75.794 |
| 248 | 10 | 75.844 |
| 250 | - | 76.200 |
| 263 | - | 80.162 |
| 264 | 4 1/2 | 80.467 |
| 417 | - | 127.216 |
| 417 | 2 | 127.271 |
| 419 | 4 | 127.762 |
| 419 | - | 127.812 |
| 445 | 6 | 135.839 |
| 462 | - | 140.818 |
| 469 | 3 1/2 | 142.951 |
| 475 | 7 1/2 | 144.869 |
| 483 | 7 1/2 | 147.409 |
| 484 | - | 147.523 |
| 502 | 4 1/4 | 153.118 |
| 506 | 3 1/4 | 154.231 |
| 512 | 9 1/4 | 156.153 |
| 515 | - | 156.972 |
| 520 | 4 1/4 | 158.496 |
| 602 | 8 1/4 | 183.598 |
| 663 | 1 1/4 | 202.286 |
| 683 | 8 | 208.210 |
| 696 | 3 | 212.344 |
| 710 | 6 | 216.484 |
| 741 | 6 | 226.009 |
| 761 | 3 1/2 | 232.195 |
| 871 | 3 1/2 | 265.837 |
| 885 | - | 269.837 |
| 924 | - | 281.635 |
| 948 | 2 | 289.001 |
| 959 | 8 1/4 | 292.506 |
| 971 | 4 1/4 | 296.069 |

Plan Form No. 2 ~~(For Deposited Plan)~~

DP 205204 C

Registered: 8.10.1963

C.A.: 31/59 of 9-12-58

Title System: Old System

Purpose: Subdivision

Ref. Map: Roll Plan 379

Last Plan: ~~da~~

~~Municipality~~ City ~~of~~ Penrith
~~Shire of~~

# PLAN

of subdn. of part of Molloy's subdn. of lots 28 & 29 of O'Connell's Est. at Kingswood

Bk 734. No. 274

PARISH OF Claremont COUNTY OF Cumberland

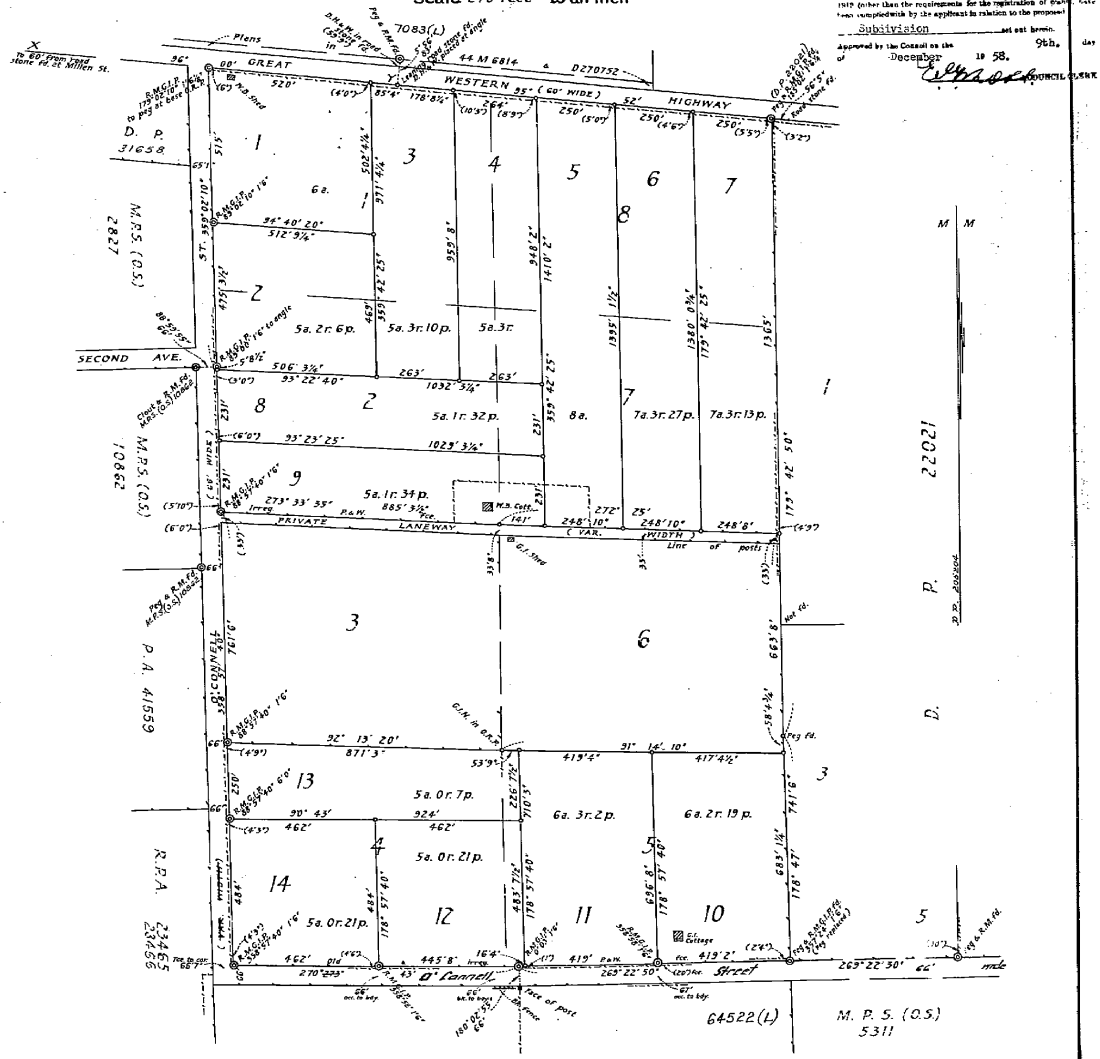
Scale 240 feet to an inch

Certificate No. 31/59

I hereby certify that the requirements of the Local Government Act 1919 (other than the requirements for the registration of plans) have been complied with by the applicant in relation to the proposed Subdivision set out hereon.

Approved by the Council on the 9th. day of December 1958.

COUNCIL CLERK




Approved by the Council and Certified in accordance with the Provisions of Section 327 of the Local Government Act 1919.

Subdivision No.....

Council Clerk.....

Datum line of Azimuth X - Y

I, Peter Herbert Blume of W. P. Hill

of 185 Elizabeth St. Sydney

a surveyor registered under the Surveyors Act, 1929-1945, hereby certify that the survey represented in this plan is accurate and has been made * (1) by me ~~(2) under my immediate supervision~~ in accordance with the Survey Practice Regulations, 1933, and was completed on † 24th. March 1959

(Signature) Peter Blume

Surveyor registered under the Surveyors Act, 1929-46.

* Strike out either (1) or (2). † Insert date of Survey.

I, Bruce Richard Davies, Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this 30th day of March, 1977

NEW SOUTH WALES

IVA No. 57229

[redacted]ICATE OF TITLE

[redacted]L PROPERTY ACT, 1900

14637014

Vol. 14637 Fol. 14

EDITION ISSUED

8 1 1982

14637 Fol. 14

(Page 1) Vol. .....

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

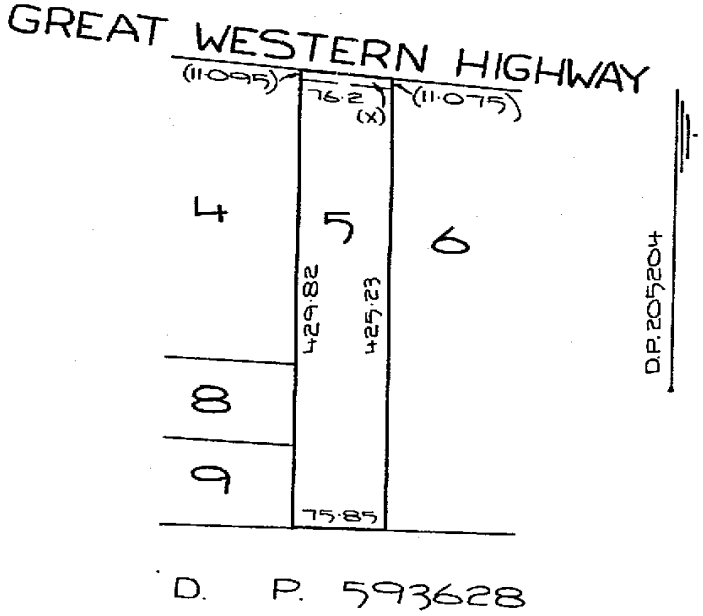
CANCELLED

Registrar General.

SEE AUTO FOLIO

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES




D. P. 593628

(X) REALIGNMENT - GOV. GAZ 1-10-1965 FOL 3219. ROAD SEE T817706

IVA 57229 RG

AREA: 3.237 ha

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 5 in Deposited Plan 205204 in the City of Penrith Parish of Claremont County of Cumberland being part of Portion 47 granted to Mary O'Connell on 27-6-1810 and part of Portion 109 granted to Mary Putland on 1-1-1806.

FIRST SCHEDULE

~~PAUL VASSALLO.~~

SECOND SCHEDULE

GRY 1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
QG 2. CAUTION. The land within described is held subject to any subsisting interest (as defined in Section 28A Real Property Act, 1900). 8-1-1982
CV 3. Book 2732 No. 878 Covenant.
AA 4. Notification in Government Gazette dated 1-10-1965 Folio 3219: Realignment affecting the part of land above described shown so burdened in the plan hereon and being Lot 64 in Deposited Plan 226184.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

RG 2/64

Vol. 14637 Fol. 14

94137C 4.81 D. West, Government Printer

## FIRST SCHEDULE (continued)

| REGISTERED PROPRIETOR | Registrar General |
|---|---|
| Paul Vassallo as regards the whole of the land excepting Lot 64 in DP 226184 and The Commissioner for Main Roads as regards the said Lot 64 in DP 226184 by Resumption T817706. Registered 20-12-1983 | |

USE "B" FORMAT

## SECOND SCHEDULE (continued)

| PARTICULARS | Registrar General | CANCELLATION |
|---|---|---|
| AB T817706 Resumption. Part of the land within described being Lot 64 in DP 226184 is now road. Registered 20-12-1983 | | |

## NOTATIONS AND UNREGISTERED DEALINGS

T817706 N/A
CT 23 OCT 1998

NOTE: ENTRIES RULED THROUGH

# Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
25/11/2020 3:52PM

FOLIO: 5/205204

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 14637 FOL 14

| Recorded | Number | Type of Instrument | C.T. Issue |
|---|---|---|---|
| 5/6/1987 | | TITLE AUTOMATION PROJECT | LOT RECORDED<br>FOLIO NOT CREATED |
| 9/10/1987 | | CONVERTED TO COMPUTER FOLIO | FOLIO CREATED<br>CT NOT ISSUED |
| 22/1/1988 | X228610 | TRANSFER | EDITION 1 |
| 10/11/1993 | | AMENDMENT: LOCAL GOVT AREA | |
| 11/2/1997 | DP866081 | DEPOSITED PLAN | FOLIO CANCELLED<br>RESIDUE REMAINS |
| 31/8/1999 | 6147676 | DEPARTMENTAL DEALING | |
| 14/9/2015 | AJ811575 | DEPARTMENTAL DEALING | |

*** END OF SEARCH ***





Received: 25/11/2020 15:52:25

RP 13 STAMP DUTY [redacted]

Crown [illegible] not liable to Stamp Du[redacted]
or payment of Registration or other fees.

H. K. ROBERTS
Crown Solicitor
per

# TRANSFER

REAL PROPERTY ACT, 1900

T

CA 1 of 1 X

$ OHMS

R11

| Torrens Title Reference | If Part Only, Delete Whole and Give Details | Location |
|---|---|---|
| VOLUME 14637<br>FOLIO 14<br>NOW 5/205204 | WHOLE<br>Excepting Lot 64 in D.P. 226184 | Parish: CLAREMONT<br>County: CUMBERLAND |

DESCRIPTION OF LAND
Note (a)

TRANSFEROR
Note (b)

PAUL VASSALLO

ESTATE
Note (c)

(the abovenamed TRANSFEROR) hereby acknowledges receipt of the consideration of $ 313,000.00
and transfers an estate in fee simple
in the land above described to the TRANSFEREE

TRANSFEREE
Note (d)

THE MINISTER FOR EDUCATION the Constructing Authority constituted by the Public Works Act, 1912 for the purpose of the Technical and Further Education Act, 1974.

OFFICE USE ONLY

OVER.

TENANCY
Note (e)

as joint tenants/tenants in common

PRIOR ENCUMBRANCES
Note (f)

subject to the following PRIOR ENCUMBRANCES 1. _____
2. _____ 3. _____

DATE 24/11/87

We hereby certify this dealing to be correct for the purposes of the Real Property Act, 1900.

EXECUTION
Note (g)

Signed in my presence by the transferor who is personally known to me

Signature of Witness

P R BUTTON
Name of Witness (BLOCK LETTERS)

SOLICITOR
Address and occupation of Witness

P Vassallo
Signature of Transferor

Note (g)

Signed in my presence by the transferee who is personally known to me

Signature of Witness

B.B. PHILLIPS
Name of Witness (BLOCK LETTERS)

STATE CROWN SOLICITORS
Address and occupation of Witness

OFFICE - CLERK.

H. K. ROBERTS
State Crown Solicitor
Per

Signature of Transferee

87/2235, C2/DW

TO BE COMPLETED BY LODGING PARTY
Notes (h) and (i)

LODGED BY
STATE CROWN SOLICITORS OFFICE
GOODSELL BUILDING
8-12 CHIFLEY SQUARE, SYDNEY. 2000
DX 19 PHONE: 238-7406
813E
Delivery Box Number

LOCATION OF DOCUMENTS

| CT | OTHER | |
|---|---|---|
| | | Herewith. |
| | | In R.G.O. with |
| | | Produced by |

OFFICE USE ONLY

| Checked | Passed |
|---|---|
| FEB11 | |
| Signed | Extra Fee |
| | |

REGISTERED 22-1-1988

Registrar General

| | | |
|---|---|---|
| Secondary Directions | SET | OG (Y) |
| Delivery Directions | CT | LP. |

RP 13
1983

## INSTRUCTIONS FOR COMPLETION

This dealing should be marked by the Commissioner of Stamp Duties before lodgment by hand at the Registrar General's Office.

Typewriting and handwriting should be clear, legible and in permanent non-copying ink.

Alterations are not to be made by erasure; the words rejected are to be ruled through and initialled by the parties to the dealing.

If the space provided is insufficient, additional sheets of the same size and quality of paper and having the same margins as this form should be used. Each additional sheet must be identified as an annexure and signed by the parties and the attesting witnesses.

If it is intended to create easements, covenants, &c., use forms RP13A, RP13B, RP13C as appropriate.

Rule up all blanks.

The following instructions relate to the SIDE NOTES on the form.

(a) Description of land:

(i) TORRENS TITLE REFERENCE.—For a manual reference insert the Volume and Folio (e.g., Vol. 8514 Fol. 126)—For a computer folio insert the folio identifier (e.g., 12/701924).

(ii) PART/WHOLE.—If part only of the land in the folio of the Register is being transferred, delete the word "WHOLE" and insert the lot and plan number, portion, &c. See also sections 327 and 327AA of the Local Government Act, 1919.

(iii) LOCATION.—Insert the locality shown on the Certificate of Title/Crown Grant, e.g., at Chullora. If the locality is not shown, insert the Parish and County, e.g., Ph. Lismore Co. Rous.

(b) Show the full name of the transferor(s).

(c) If the estate being transferred is a lesser estate than an estate in fee simple, delete "fee simple" and insert appropriate estate.

(d) Show the full name, address and occupation or description of the transferee(s).

(e) Delete if only one transferee. If more than one transferee, delete either "joint tenants" or "tenants in common", and, if the transferees hold as tenants in common, state the shares in which they hold.

(f) In the memorandum of prior encumbrances, state only the registered number of any mortgage, lease, charge or writ to which this dealing is subject.

(g) Execution:

GENERALLY (i) Should there be insufficient space for the execution of this dealing, use an annexure sheet.
(ii) The certificate of correctness under the Real Property Act, 1900, must be signed by all parties to the transfer, each party to execute the dealing in the presence of an adult witness, not being a party to the dealing, to whom he/she is personally known.
The solicitor for the transferee may sign the certificate on behalf of the transferee, the solicitor's name (not that of his/her firm), to be typewritten or printed adjacent to the signature. Any person falsely or negligently certifying is liable to the penalties provided by section 117 of the Real Property Act, 1900.

ATTORNEY (iii) If the transfer is executed by an attorney for the transferor/transferee pursuant to a registered power of attorney, the form of attestation must set out the full name of the attorney, and the form of execution must indicate the source of his/her authority, e.g., "AB by his attorney (or receiver or delegate, as the case may be) XY pursuant to power of attorney registered Book No.

AUTHORITY (iv) If the transfer is executed pursuant to an authority (other than specified in (iii)) the form of execution must indicate the statutory, judicial or other authority pursuant to which the transfer has been executed.

CORPORATION (v) If the transfer is executed by a corporation under seal, the form of execution should include a statement that the seal has been properly affixed, e.g., in accordance with the Articles of Association of the corporation. Each person attesting the affixing of the seal must state his/her position (e.g., director, secretary) in the corporation.

(h) Insert the name, postal address, Document Exchange reference, telephone number and delivery box number of the lodging party.

(i) The lodging party is to complete the LOCATION OF DOCUMENTS panel. Place a tick in the appropriate box to indicate the whereabouts of the Certificate of Title. List, in an abbreviated form, other documents lodged, e.g., stat. dec. for statutory declaration, pbte for probate, L/A. for letters of administration, &c.

OFFICE USE ONLY

L.O. 1341

### FIRST SCHEDULE DIRECTIONS

| (A) FOLIO IDENTIFIER | (B) DIRECTION | (C) NAME |
|---|---|---|
| | PROP | THE MINISTER FOR EDUCATION AS REGARDS THE WHOLE OF THE LAND EXCLUDING LOT 64 IN DP 226184 and THE COMMISSIONER FOR MAIN ROADS AS REGARDS THE SAID LOT 64 IN DP 226184 |

### SECOND SCHEDULE AND OTHER DIRECTIONS

| (D) FOLIO IDENTIFIER | (E) DIRECTION | (F) NOTFN TYPE | (G) DEALING NUMBER | (H) DETAILS |
|---|---|---|---|---|
| | | | | |

Purport not liable to Stamp Duty or payment of Registration or other fees.

RPA 52184

52184

R. J. McKAY
Crown Solicitor
per

OFFICE USE ONLY

Parish CUR7218 30.1.76.

NIL FEE

OHMS.

NEW SOUTH WALES

APPLICATION PURSUANT TO SECTION 31(A)(2) OF THE REAL PROPERTY ACT, 1900, TO BRING RESUMED LAND UNDER THE PROVISIONS OF THE ACT.

Application is hereby made for the issue of a Certificate of Title in favour of

THE MINISTER FOR EDUCATION

for Lot 1 Deposited Plan DP582171 being part of the land resumed by Notification in Government Gazette dated 28th June, 1974 Folio 2398 (a true copy of which is annexed hereto)

AND I, RAYMOND JAMES McKAY, State Crown Solicitor, hereby certify that -

(i) I am authorised to make the within application;

(ii) the said land has not been divested from the said THE MINISTER FOR EDUCATION and no estate or interest therein has been created in favour of any other person;

(iii) the said land is not under the provisions of the Real Property Act, 1900, and no sale, lease or other transaction affecting it is intended to be completed prior to the issue of the certificate of title; and

(iv) this application is correct for the purpose of the Real Property Act, 1900.

DATED at SYDNEY this 15TH day of DECEMBER. 1975.

SIGNED in my presence by the said RAYMOND JAMES McKAY by ERIC NORMAN McFARLANE, of the State Crown Solicitor's Office who is personally known to me:

.....
Signature of Witness

JOHN FANETTO
Name of Witness (BLOCK LETTERS)

State Crown Solicitor
Goodsell Building
8-12 Chifley Square
Sydney
2000

R. J. McKAY,
State Crown Solicitor
Per:

.....

Ser. 3 P 206 Pt Por 109 Mary Putland 1-1-1806 ø
Ser. 7 P 10 Pt Por 47 Mary O'Connell 27-6-1810 ø

The Registrar General,

SYDNEY.

New Certificate of Title issued

Vol. 13055 Fol. 178

[*Published in Government Gazette No. 79 of 28th June, 1974, on page No. 2398.*]

TECHNICAL EDUCATION ACT, 1949-1968.—PUBLIC WORKS ACT, 1912, AS AMENDED

ACQUISITION OF LAND

Technical College at Werrington

IN pursuance of the provisions of section 49 of the Technical *Education Act, 1949-1968, it is hereby notified* and declared by His Excellency the Governor, acting with the advice of the Executive Council, that so much of the land described in the Schedule hereto as is Crown land is hereby appropriated, and *so much of the said* land as is private property is hereby resumed under the Public Works Act, 1912, as amended, for the purpose of a Technical College at WERRINGTON, and that the said land is vested in the Minister for Education as Constructing Authority on behalf of Her Majesty the Queen.

Dated at Sydney, this fifth day of June, one thousand nine hundred and seventy-four.

A. R. CUTLER, Governor.

By His Excellency's Command,

E. A. WILLIS, Minister for Education.

THE SCHEDULE

All that piece or parcel of land situate in the City of Penrith, Parish of Claremont and County of Cumberland, being lots 2, 3, 4 and 8, Deposited Plan 205204, having an area of 9.145 *hectares or thereabouts, and said to* be in the possession of Thomas Robert Gale and others. (2891)

D. West, Government Printer, New South Wales—1974

This is the annexed Notification referred to in Application by the State Crown Solicitor dated the 15th day of DECEMBER 1975.

.....
Authorised Officer

.....
Witness

RPA 52184
LOT 1 D.P. 582171
8.947 ha. RMS 30/1/96

52184

Stamped by:
State Crown Solicitor
Goodsell Building
8-12 Chifley Square
Sydney

258-0155 ~~1055~~ ext 7406.

76/6520
C45 SDF.

RP36

Crown Instrument not liable to Stamp Duty or payment of Registration or other fees.

RPA 57377

H. K. ROBERTS
Crown Solicitor NEW SOUTH WALES
per

OFFICE USE ONLY

RESUMPTION APPLICATION

SECTION 31A (2), REAL PROPERTY ACT, 1900

For use where the land and/or easement is not under the provisions of the Real Property Act, 1900.

Paid cdd214009 20-4-83

(a)

THE MINISTER FOR EDUCATION

herein referred to as the APPLICANT

in consequence of the resumption notified in Government Gazette dated 17th December ,1982, folio 5802 , a true copy of which is set out overleaf, hereby applies to the Registrar General -

(b) for the issue of a certificate of title in favour of the applicant for the land described in the following schedule

| Lot No. | Plan No. |
|---|---|
| Part Lot 1. | Deposited Plan 625823 |

AND IT IS REQUESTED that a consolidated Certificate of Title issue in respect of the whole of Lot 1. Deposited Plan 625823 pursuant to this request and for that purpose the land described in the following Schedule:-

(b) ~~for the recording of the easement so resumed on the folio(s) of the Register described in the following schedule~~

| Reference to title | | Whole or Part | Description of land if part only |
|---|---|---|---|
| Volume | Folio | | |
| 13055 | 178 | Whole | |

was also resumed by the said notification and comprised within Lot 1. Deposited Plan 625823.

Dated at Sydney this 20th day of April , 1983.

Signed in my presence by an authorised officer of the applicant.

C Mourouki
Signature of witness

CHRISTINE MOUROUKI
Name of witness (BLOCK LETTERS)

REGISTRATION CLERK

Certified correct for the purposes of the Real Property Act, 1900.

H. K. ROBERTS
Stnd Crown Solicitor
per

Signature

Cert. of T. issued Vol. 15083 Fol. 180

RULE UP ALL BLANKS Dated 18-7-1983

RP36

Crown Instrument not liable to Stamp Duty or payment of Registration or other fees.

RPA 57377

H. K. ROBERTS
Crown Solicitor NEW SOUTH WALES
per

OFFICE USE ONLY

0 $0Hms
Paid cd821400g
12-4-83

# RESUMPTION APPLICATION

SECTION 31A (2), REAL PROPERTY ACT, 1900

For use where the land and/or easement is not under the provisions of the Real Property Act, 1900.

(a)

THE MINISTER FOR EDUCATION

herein referred to as the APPLICANT

in consequence of the resumption notified in Government Gazette dated 17th December ,1982, folio 5802 , a true copy of which is set out overleaf, hereby applies to the Registrar General -

(b) for the issue of a certificate of title in favour of the applicant for the land described in the following schedule

| Lot No. | Plan No. |
|---|---|
| Part Lot 1. | Deposited Plan 625823 |

AND IT IS REQUESTED that a consolidated Certificate of Title issue in respect of the whole of Lot 1. Deposited Plan 625823 pursuant to this request and for that purpose the land described in the following Schedule:-

(b) ~~for the recording of the easement so resumed on the folio(s) of the Register described in the following schedule~~

| Reference to title | | Whole or Part | Description of land if part only |
|---|---|---|---|
| Volume | Folio | | |
| 13055 | 178 | Whole | |

was also resumed by the said notification and comprised within Lot 1. Deposited Plan 625823.

Dated at Sydney this 20th day of April 1983.

Signed in my presence by an authorised officer of the applicant.

C Mourouki
Signature of witness

CHRISTINE MOUROUKI
Name of witness (BLOCK LETTERS)

REGISTRATION CLERK

Certified correct for the purposes of the Real Property Act, 1900.

H. K. ROBERTS
State Crown Solicitor
per

Signature

Cert. of T. issued Vol. 15083 Fol. 180
Dated 18-7-1983

RULE UP ALL BLANKS

RP36

| DEPARTMENTAL USE ONLY | TO BE COMPLETED BY LODGING PARTY |
|---|---|
| RESUMPTION APPLICATION 57377 | Lodged by: Sfade Crown Solicitors<br>Address: 8-12 Chifley Sq. Syd.<br>D.X. No.: Phone No.: 238 7406<br>Delivery Box Number 813E<br>Documents lodged herewith<br>1.<br>2.<br>3.<br>4. |
| | Received Documents _____ Receiving Clerk |

COPY OF GAZETTE NOTIFICATION

*[Published in Government Gazette No. 177 of 17th December, 1982, on page No. 5802.]*

TECHNICAL AND FURTHER EDUCATION ACT, 1974.—
PUBLIC WORKS ACT, 1912

ACQUISITION OF LAND

Technical College at Werrington

IN pursuance of the provisions of section 28 of the Technical and Further Education Act, 1974, it is hereby notified and declared by His Excellency the Governor, acting with the advice of the Executive Council, that so much of the land described in the Schedule hereto as is Crown land is hereby appropriated, and so much of the said land as is private property is hereby resumed under the Public Works Act, 1912, for the purpose of a Technical College at Werrington; and that the said land is vested in the Minister for Education as Constructing Authority on behalf of Her Majesty the Queen.

Dated at Sydney, this twenty-fourth day of November, one thousand nine hundred and eighty-two.

J. A. ROWLAND, Governor.

By His Excellency's Command,

R. J. MULOCK, Minister for Education.

THE SCHEDULE

All that piece or parcel of land situate in the City of Penrith, Parish of Claremont and County of Cumberland, being lot 1, Deposited Plan 625823, and having an area of 13.411 hectares or thereabouts. 74/C81/57794. (4834)

D. West, Government Printer, New South Wales—1982

83/1108 CW/JME
ED. 74/C81/57794

13055178

# [redacted]TICATE OF TITLE

NEW SOUTH WALES

[redacted] PROPERTY ACT, 1900

Vol. 13055 Fol. 178

Appln. No.52184

CANCELLED

EDITION ISSUED

19 5 1976

13055 Fol. 178

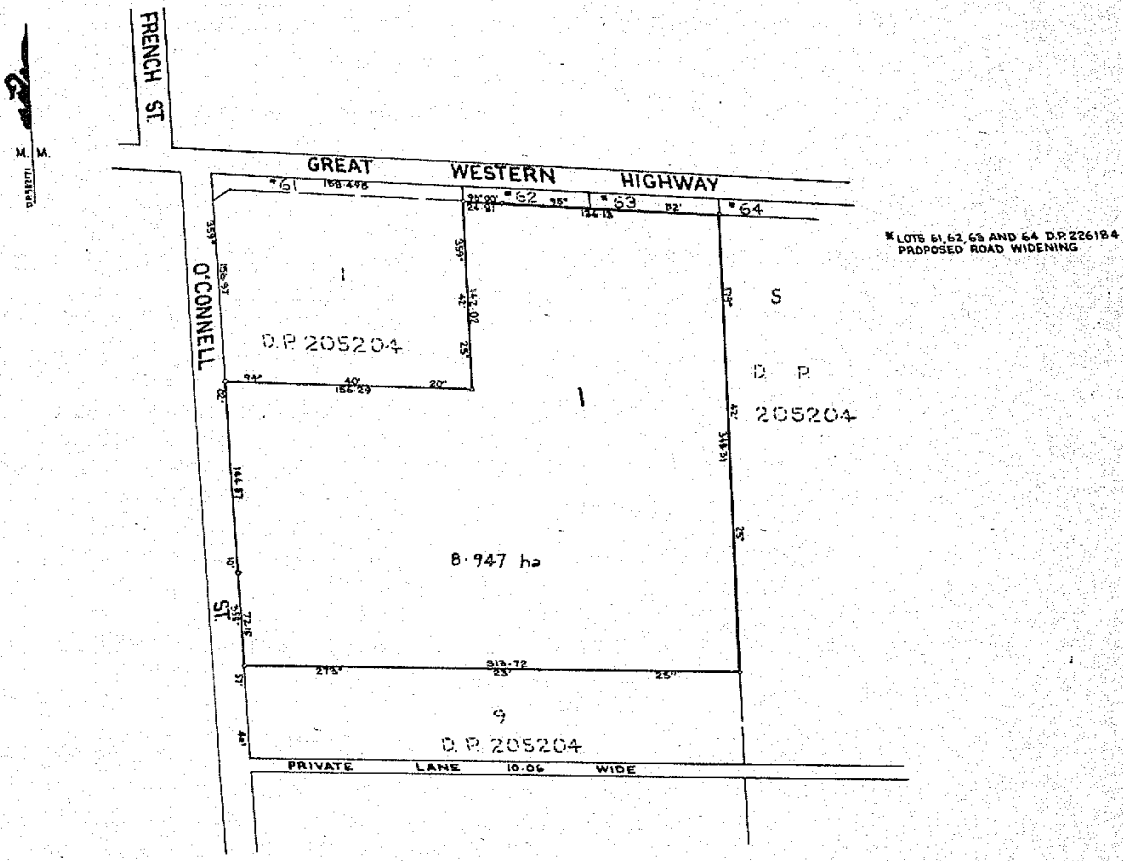
(Page 1) Vol. .....

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Registrar General.

## PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES




## ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 1 in Deposited Plan 582171 at Werrington in the City of Penrith Parish of Claremont and County of Cumberland being part of Portion 109 granted to Mary Putland on 1-1-1806 and part of Portion 47 granted to Mary O'Connell on 27-6-1810.

## FIRST SCHEDULE

~~THE MINISTER FOR EDUCATION.~~

## SECOND SCHEDULE

NIL

Vol. 13055 Fol. 178

## FIRST SCHEDULE (continued)

| REGISTERED PROPRIETOR | INSTRUMENT NATURE | INSTRUMENT NUMBER | INSTRUMENT DATE | ENTERED | Signature of Registrar General |
|---|---|---|---|---|---|
| Minister for Education by Resumption T476881. Registered 3.6.1983. | | | | | |

This deed is cancelled as to the whole
New certificates of Title have issued on 18-7-1983
for lots in Deposited Plan No 625823 as follows:-
Lots 1 Vol 15083 Fol 180 respectively.
consolidation
vide RPN 57377.

REGISTRAR GENERAL

No
No
No

DP625823
LOT 1 DP.625823 RESUMED FOR TECHNICAL COLLEGE PURPOSES VESTED MINISTER GAZ.17.12 FOL.580
T476881 IN pt 6m1 DP625823

## SECOND SCHEDULE (continued)

| INSTRUMENT NATURE | INSTRUMENT NUMBER | INSTRUMENT DATE | PARTICULARS | ENTERED | Signature of Registrar General | CANCELLATION | | |
|---|---|---|---|---|---|---|---|---|

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

15083180

# [redacted]ICATE OF TITLE

NEW SOUTH WALES — [redacted] PROPERTY ACT, 1900

First Title Old System

Prior Title P.A. 57377
Vol. 13055 Fol. 178

Vol. 15083 Fol. 180

CANCELLED 7 1983

I certify that the person named in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set out below) in the land described subject to the recordings appearing in the Second Schedule and to the provisions of the Real Property Act, 1900.

SEE AUTO FOLIO

Registrar General.

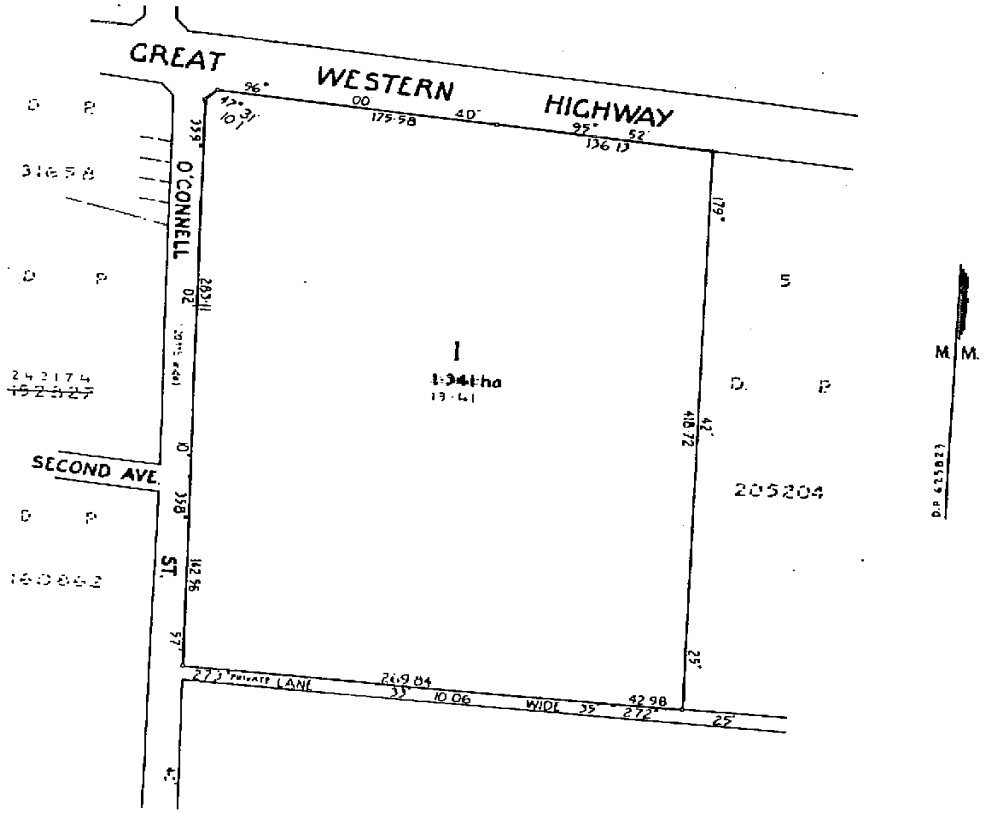
Vol. 15083 Fol. 180 (Page 1) Vol.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

## PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES




S

## LAND REFERRED TO

Lot 1 in Deposited Plan 625823 at Werrington in the City of Penrith Parish of Claremont County of Wellington.

## FIRST SCHEDULE

THE MINISTER FOR EDUCATION.

GRN

## SECOND SCHEDULE

NIL.

Vol. 15083 Fol. 180

L.O. 1066 D. West, Government Printer

FIRST SCHEDULE (continued)

| REGISTERED PROPRIETOR | Registrar General |
|---|---|
| CANCELLED<br>SEE AUTO FOLIO | |

SECOND SCHEDULE (continued)

| PARTICULARS | Registrar General | CANCELLATION |
|---|---|---|
| | | |

NOTATIONS AND UNREGISTERED DEALINGS

| | | |
|---|---|---|
| | | |

NOTE: ENTRIES RULED THR

14665249

NEW SOUTH WALES

# [redacted]ICATE OF TITLE

L PROPERTY ACT, 1900

IVA No 57230

Vol. 14665 Fol. 249

EDITION ISSUED

CANCELLED 1 3 1982

14665 Fol. 249

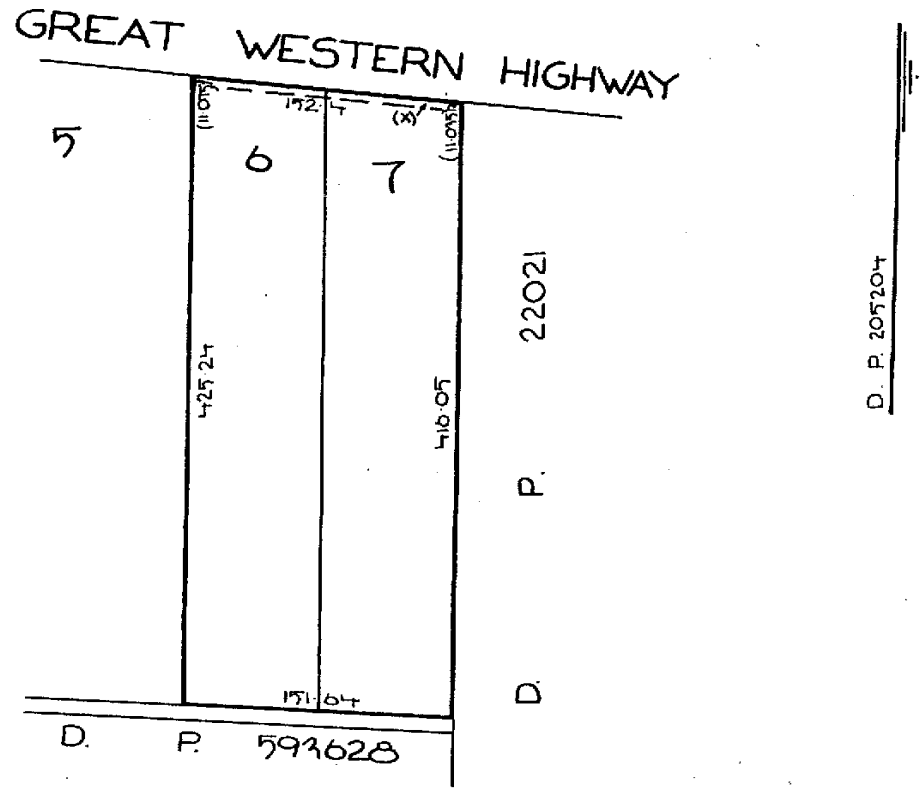
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

SEE AUTO FOLIO

Registrar General.

## PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES




AREA: 6.374 ha

(X) GOVT. GAZ. 1.10.1965 FOLIO 3219 - RE-ALIGNMENT

(X) ROAD SEE T299915.

IVA 57230

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lots 6 and 7 in Deposited Plan 205204 at Kingswood in the City of Penrith Parish of Claremont County of Cumberland being part of Portion 109 granted to Mary Putland on 1-1-1806 and part of Portion 47 granted to Mary O'Connell on 27-6-1810.

FIRST SCHEDULE

~~GIOVANNI MUSCARA and CARMELA MUSCARA as Joint Tenants.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
2. CAUTION: The land within described is held subject to any subsisting interest (as defined in section 28A Real Property Act, 1900).
3. ~~Notification in Government Gazette dated 1-10-1965 Folio 3219:Re-Alignment affecting the land shown so burdened in the plan hereon.~~
4. Book 2712 No. 599 Covenant.
5. ~~Book 2712 No. 600 Mortgage to The Commercial Banking Company of Sydney Limited.~~ W376002

pps IVA 57230
REG. GEN.
5.4.1982

RG 2/64

Vol 14665 Fol 249

99346D 8.81 D. West, Government Printer

## FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR | Registrar General

~~Giovanni Muscara and Carmela Muscara as joint tenants as regards the whole of the land excepting Lots 65 and 66 in D.P.226184 and The Commissioner for Main Roads as regards the said Lots 65 and 66 in D.P.226184 by Transfer T299915. Registered 5.1.1983.~~

The Minister for Education as regards the whole of the land excepting Lots 65 and 66 in D.P.~~22614~~ 226184 and The Commissioner for Main Roads as regards the said Lots 65 and 66 in D.P.226184 by Transfer W376003. Registered 3-7-1986.

## SECOND SCHEDULE (continued)

| PARTICULARS | Registrar General | CANCELLATION |
|---|---|---|
| ~~Book 2712 No.600 Mortgage. T299914 Discharged as regards Lots 65 and 66 in D.P. 226184. Registered 5.1.1983.~~ | | W376002 |
| ~~T299915 Transfer - The land so indicated in the plan hereon being Lots 65 and 66 in D.P.226184. Registered 5.1.1983.~~ | | |
| ~~T299915 Transfer - The land so indicated in the plan hereon being Lots 65 and 66 in D.P.226184 is now Public Road. Registered 5.1.1983.~~ | | |
| T299915 Transfer - The land so indicated in the plan hereon being Lots 65 and 66 in D.P.226184 is now Public Road. Registered 5.1.1983. | | |

CANCELLED

SEE AUTO FOLIO

## NOTATIONS AND UNREGISTERED DEALINGS

CT. 15.10.82 T299914 DM - 5 TR (LOTS 65+66 IN DP 226184) W376002 DM - 3 TR

NOTE: ENTRIES RULED THR

# Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
25/11/2020 6:58AM

FOLIO: 1/625823

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 15083 FOL 180

| Recorded | Number | Type of Instrument | C.T. Issue |
|---|---|---|---|
| 28/3/1988 | | TITLE AUTOMATION PROJECT | LOT RECORDED<br>FOLIO NOT CREATED |
| 22/9/1988 | | CONVERTED TO COMPUTER FOLIO | FOLIO CREATED<br>CT NOT ISSUED |
| 10/11/1993 | | AMENDMENT: LOCAL GOVT AREA | |
| 11/2/1997 | DP866081 | DEPOSITED PLAN | FOLIO CANCELLED<br>RESIDUE REMAINS |

*** END OF SEARCH ***





Received: 25/11/2020 06:57:56

# Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
25/11/2020 6:57AM

FOLIO: 1/866081

First Title(s): OLD SYSTEM
Prior Title(s): 5/205204 1/625823
VOL 14665 FOL 249

| Recorded | Number | Type of Instrument | C.T. Issue |
|---|---|---|---|
| 13/2/1997 | DP866081 | DEPOSITED PLAN | FOLIO CREATED EDITION 1 |
| 5/6/2012 | AH27210 | DEPARTMENTAL DEALING | |
| 7/11/2016 | AK729543 | APPLICATION TO RECORD A NEW REGISTERED PROPRIETOR | EDITION 2 |

*** END OF SEARCH ***





Received: 25/11/2020 06:57:31

# Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 1/866081

| SEARCH DATE | TIME | EDITION NO | DATE |
|---|---|---|---|
| 25/11/2020 | 6:57 AM | 2 | 7/11/2016 |

LAND

LOT 1 IN DEPOSITED PLAN 866081
AT KINGSWOOD
LOCAL GOVERNMENT AREA PENRITH
PARISH OF CLAREMONT COUNTY OF CUMBERLAND
TITLE DIAGRAM DP866081

FIRST SCHEDULE

MINISTER ADMINISTERING THE TECHNICAL AND FURTHER EDUCATION COMMISSION ACT 1990 (RP AK729543)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S) WITHIN THE PART(S) SHOWN SO INDICATED IN THE TITLE DIAGRAM
2 BK 2712 NO 599 COVENANT AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM.
3 BK 2732 NO 878 COVENANT AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM.

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***





Received: 25/11/2020 06:57:14

# Appendix F EPA Searches

# Search results

Your search for:Suburb: KINGSWOOD

Search Again
Refine Search

did not find any records in our database.

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the planning process.

**Search TIP**

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

... more search tips

More information about particular sites may be available from:

- The POEO public register
- The appropriate planning authority: for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act.

See What's in the record and What's not in the record.

If you want to know whether a specific site has been the subject of notices issued by the EPA under the CLM Act, we suggest that you search by Local Government Area only and carefully review the sites that are listed.
This public record provides information about sites regulated by the EPA under the Contaminated Land Management Act 1997, including sites currently and previously regulated under the Environmentally Hazardous Chemicals Act 1985. Your inquiry using the above search criteria has not matched any record of current or former regulation. You should consider searching again using different criteria. The fact that a site does not appear on the record does not necessarily mean that it is not affected by contamination. The site may have been notified to the EPA but not yet assessed, or contamination may be present but the site is not yet being regulated by the EPA. Further information about particular sites may be available from the appropriate planning authority, for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act. In addition the EPA may be regulating contamination at the site through a licence under the Protection of the Environment Operations Act 1997. You may wish to search the POEO public register.POEO public register

2 December 2020

# Search results

Your search for: **General Search** with the following criteria

**Suburb** - Kingswood

returned 7 results

Export to excel 1 of 1 Pages Search Again

| Number | Name | Location | Type | Status | Issued date |
|---|---|---|---|---|---|
| 1034673 | HCOA OPERATIONS (AUSTRALIA) PTY LIMITED | 9 Barber Avenue, KINGSWOOD, NSW 2747 | s.58 Licence Variation | Issued | 19 Feb 2004 |
| 11417 | HEALTHSCOPE OPERATIONS PTY LTD | 9 Barber Avenue, KINGSWOOD, NSW 2747 | POEO licence | No longer in force | 11 Apr 2001 |
| 11253 | SYDNEY WEST AREA HEALTH SERVICE | CNR DERBY STREET AND PARKER STREET, KINGSWOOD, NSW 2750 | POEO licence | No longer in force | 13 Nov 2000 |
| 1034831 | SYDNEY WEST AREA HEALTH SERVICE | CNR DERBY STREET AND PARKER STREET, KINGSWOOD, NSW 2750 | s.58 Licence Variation | Issued | 24 Feb 2004 |
| 6195 | WESTERN SYDNEY AUTOMOTIVES PTY LTD | 107-121 GREAT WESTERN HIGHWAY, KINGSWOOD, NSW 2747 | POEO licence | Surrendered | 17 Jan 2000 |
| 1044810 | WESTERN SYDNEY AUTOMOTIVES PTY LTD | 107-121 GREAT WESTERN HIGHWAY, KINGSWOOD, NSW 2747 | s.58 Licence Variation | Issued | 02 Apr 2005 |
| 1066368 | WESTERN SYDNEY AUTOMOTIVES PTY LTD | 107-121 GREAT WESTERN HIGHWAY, KINGSWOOD, NSW 2747 | s.80 Surrender of a Licence | Issued | 23 Oct 2006 |

02 December 2020

## Background

A strategy to systematically prioritise, assess and respond to notifications under Section 60 of the ***Contaminated Land Management Act 1997*** (CLM Act) has been developed by the EPA. This strategy acknowledges the EPA's obligations to make information available to the public under ***Government Information (Public Access) Act 2009*** .

When a site is notified to the EPA, it may be accompanied by detailed site reports where the owner has been proactive in addressing the contamination and its source. However, often there is minimal information on the nature or extent of the contamination.

After receiving a report, the first step is to confirm that the report does not relate to a pollution incident. The Protection of the Environment Operations Act 1997 (POEO Act) deals with pollution incidents, waste stockpiling or dumping. The EPA also has an incident management process to manage significant incidents (https://www.epa.nsw.gov.au/reporting-and-incidents/incident-management).

In many cases, the information indicates the contamination is securely immobilised within the site, such as under a building or carpark, and is not currently causing any significant risks for the community or environment. Such sites may still need to be cleaned up, but this can be done in conjunction with any subsequent building or redevelopment of the land. These sites do not require intervention under the CLM Act, and are dealt with through the planning and development consent process. In these cases, the EPA informs the local council or other planning authority, so that the information can be recorded and considered at the appropriate time (https://www.epa.nsw.gov.au/your-environment/contaminated-land/managing-contaminated-land/role-of-planning-authorities).

Where indications are that the contamination could cause actual harm to the environment or an unacceptable offsite impact (i.e. the land is 'significantly contaminated'), the EPA would apply the regulatory provisions of the CLM Act to have the responsible polluter and/or landowner investigate and remediate the site. If the reported contamination could present an immediate or long-term threat to human health NSW Health will be consulted. SafeWork NSW and Water NSW can also be consulted if there appear to be occupational health and safety risks or an impact on groundwater quality.

As such, the sites notified to the EPA and presented in the list of contaminated sites notified to the EPA are at various stages of the assessment and remediation process. Understanding the nature of the underlying contamination, its implications and implementing a remediation program where required, can take a considerable period of time. The list provides an indication, in relation to each nominated site, as to the management status of that particular site. Further detailed information may be available from the EPA or the person who notified the site.

The following questions and answers may assist those interested in this issue.

## Frequently asked questions

**Why does my land appear on the list of notified sites?**

Your land may appear on the list because:

- the site owner and/or the polluter has notified the EPA under section 60 of the CLM Act
- the EPA has been notified via other means and is satisfied that the site is or was contaminated.

If a site is on the list, it does not necessarily mean the contamination is significant enough to regulate under the CLM Act.

**Does the list contain all contaminated sites in NSW?**

No. The list only contains contaminated sites that EPA is aware of. If a site is not on the list, it does not necessarily mean the site is not contaminated.

The EPA relies on responsible parties and the public to notify contaminated sites.

**How are notified contaminated sites managed by the EPA?**

There are different ways the EPA can manage notified contaminated sites. Options include:

• regulation under the CLM Act, POEO Act, or both
• notifying the relevant planning authority for management under the planning and development process
• managing the site under the Protection of the Environment Operation (Underground Petroleum Storage Systems) Regulation 2014.

There are specific cases where contamination is managed under a tailored program operated by another agency (for example, the Resources & Geoscience's Legacy Mines Program).

**What should I do if I am a potential buyer of a site that appears on the list?**

You should seek advice from the seller to understand the contamination issue. You may need to seek independent contamination or legal advice.

The information provided in the list is indicative only and a starting point for your own assessment. Land contamination from past site uses is common, mainly in urban environments. If the site is properly remediated or managed, it may not affect the intended future use of the site.

**Who can I contact if I need more information about a site?**

You can contact the Environment Line at any time by calling 131 555 or by emailing info@environment.nsw.gov.au.

## List of NSW Contaminated Sites Notified to the EPA

**Disclaimer**

The EPA has taken all reasonable care to ensure that the information in the list of contaminated sites notified to the EPA (the list) is complete and correct. The EPA does not, however, warrant or represent that the list is free from errors or omissions or that it is exhaustive.

The EPA may, without notice, change any or all of the information in the list at any time.

You should obtain independent advice before you make any decision based on the information in the list.

The list is made available on the understanding that the EPA, its servants and agents, to the extent permitted by law, accept no responsibility for any damage, cost, loss or expense incurred by you as a result of:

1. any information in the list; or
2. any error, omission or misrepresentation in the list; or
3. any malfunction or failure to function of the list;
4. without limiting (2) or (3) above, any delay, failure or error in recording, displaying or updating information.

| Site Status | Explanation |
|---|---|
| Under assessment | The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or *Protection of the Environment Operations Act 1997*. |
| Under Preliminary Investigation Order | The EPA has issued a Preliminary Investigation Order under s10 of the *Contaminated Land Management Act 1997*, to obtain additional information needed to complete the assessment. |
| Regulation under CLM Act not required | The EPA has completed an assessment of the contamination and decided that regulation under the *Contaminated Land Management Act 1997* is not required. |

| | |
|---|---|
| Regulation being finalised | The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the *Contaminated Land Management Act 1997* . A regulatory approach is being finalised. |
| Contamination currently regulated under CLM Act | The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record. |
| Contamination currently regulated under POEO Act | Contamination is currently regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA as the appropriate regulatory authority reasonably suspects that a pollution incident is occurring/ has occurred and that it requires regulation under the POEO Act. The EPA may use environment protection notices, such as clean up notices, to require clean up action to be taken. Such regulatory notices are available on the POEO public register. |
| Contamination being managed via the planning process (EP&A Act) | The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the *Environmental Planning and Assessment Act 1979* (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment. |
| Contamination formerly regulated under the CLM Act | The EPA has determined that the contamination is no longer significant enough to warrant regulation under the *Contaminated Land Management Act 1997* (CLM Act). The contamination was addressed under the CLM Act. |
| Contamination formerly regulated under the POEO Act | The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the *Protection of the Environment Operations Act 1997* (POEO Act). |

| | |
|---|---|
| Contamination was addressed via the planning process (EP&A Act) | The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the *Environmental Planning and Assessment Act 1979* (EP&A Act). |
| Ongoing maintenance required to manage residual contamination (CLM Act) | The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record. |

| Suburb | SiteName | Address | ContaminationActivityType | ManagementClass | Latitude | Longitude |
|---|---|---|---|---|---|---|
| KANAHOOKA | Former Dapto Smelter Site, Kanahooka (redeveloped) | Off Kanahooka ROAD | Metal Industry | Regulation under CLM Act not required | -34.4941348 | 150.8224482 |
| KANDOS | Cement Australia Kandos Cement Works | 1 Jamison STREET | Other Industry | Regulation under CLM Act not required | -32.86399912 | 149.9779259 |
| KANWAL | Kanwal General Store and Fuel Supplies and Adjacent Land | 68 and part of 70 Craigie AVENUE | Service Station | Contamination currently regulated under CLM Act | -33.26310031 | 151.4817395 |
| KANWAL | Former Bus and Truck Rental Yard | 645-647 Pacific Highway HIGHWAY | Other Petroleum | Regulation under CLM Act not required | -33.26233802 | 151.4825469 |
| KARIONG | Coles Express Kariong | 6 Central Coast HIGHWAY | Service Station | Regulation under CLM Act not required | -33.43443192 | 151.2963401 |
| KARIONG | Caltex Service Station | Lot 2 Langford DRIVE | Service Station | Regulation under CLM Act not required | -33.43934827 | 151.2935447 |
| KARUAH | BP Roadhouse Karuah | 403 Tarean ROAD | Service Station | Regulation under CLM Act not required | -32.65371781 | 151.9629963 |
| KATOOMBA | Aldi Stores | 201 Katoomba STREET | Service Station | Regulation under CLM Act not required | -33.71756625 | 150.3101649 |
| KATOOMBA | Former Katoomba/Leura Gasworks | Megalong STREET | Gasworks | Contamination currently regulated under CLM Act | -33.71304308 | 150.3194624 |
| KELLYVILLE | Caltex Service Station | 3-5 Windsor ROAD | Service Station | Regulation under CLM Act not required | -33.71436125 | 150.9602175 |
| KELLYVILLE | BP Service Station Kellyville | 19-23 Windsor  ROAD | Service Station | Regulation under CLM Act not required | -33.71280997 | 150.9590756 |
| KELSO | Caltex Service Station Kelso | 19 Sydney ROAD | Service Station | Regulation under CLM Act not required | -33.41904247 | 149.6023985 |
| KELSO | BP Service Station (Reliance Petroleum) | 63 Sydney ROAD | Service Station | Regulation under CLM Act not required | -33.41925328 | 149.6076677 |
| KEMBLA GRANGE | ShawCor Australia | 66 West Dapto ROAD | Other Petroleum | Regulation under CLM Act not required | -34.46875328 | 150.8106326 |
| KEMBLAWARRA | Griffins Bay, Lake Illawarra | Shellharbour ROAD | Landfill | Regulation under CLM Act not required | -34.49653984 | 150.8943776 |
| KEMPS CREEK | Caltex-branded Service Station | 1163 Mamre ROAD | Service Station | Regulation under CLM Act not required | -33.86972102 | 150.7966074 |

| Suburb | SiteName | Address | ContaminationActivityType | ManagementClass | Latitude | Longitude |
|---|---|---|---|---|---|---|
| KEMPSEY | Kempsey Showground | 19 Sea STREET | Unclassified | Contamination being managed via the planning process (EP&A Act) | -31.07334836 | 152.8308795 |
| KEMPSEY | Former Shell Depot | 43-51 Gladstone STREET | Other Petroleum | Regulation under CLM Act not required | -31.07500944 | 152.8346699 |
| KEMPSEY | Former Mobil Depot | 14 Hopetoun STREET | Other Petroleum | Regulation under CLM Act not required | -31.07603107 | 152.8350132 |
| KEMPSEY | Shell Coles Express Service Station Kempsey | 165 Smith STREET | Service Station | Regulation under CLM Act not required | -31.07036743 | 152.8461571 |
| KEMPSEY | Mobil Depot | 154 Belgrave  STREET | Service Station | Regulation under CLM Act not required | -31.07965043 | 152.8326303 |
| KEMPSEY | Liberty (Former Mobil) Service Station | 108-112 Smith STREET | Service Station | Regulation under CLM Act not required | -31.07492508 | 152.8431945 |
| KENSINGTON | 7-Eleven Kensington | 135 Anzac  PARADE | Service Station | Regulation under CLM Act not required | -33.91035885 | 151.2228537 |
| KENSINGTON | Former Ampol Service Station | 76-82 Anzac PARADE | Service Station | Regulation under CLM Act not required | -33.9059246 | 151.2242891 |
| KENSINGTON | Footpath adjacent to 10-20 Anzac Parade | 10-20 Anzac PARADE | Service Station | Regulation under CLM Act not required | -33.9032124 | 151.2237836 |
| KENSINGTON | Caltex Service Station | 211-213 Anzac PARADE | Service Station | Regulation under CLM Act not required | -33.91460752 | 151.2251266 |
| KENTHURST | Vacant Land | 259 McCylmonts  ROAD | Unclassified | Regulation under CLM Act not required | -33.61283529 | 150.9425303 |
| KHANCOBAN | Khancoban Tip | Alpine WAY | Landfill | Regulation under CLM Act not required | -36.21994191 | 148.1542718 |
| KIAMA | Former Gasworks | 105 to 109 and 113 Shoalhaven STREET | Gasworks | Regulation under CLM Act not required | -34.67416881 | 150.8504143 |
| KIAMA HEIGHTS | Former Mobil Service Station Kiama | 7-9 South Kiama DRIVE | Service Station | Regulation under CLM Act not required | -34.69553931 | 150.8437977 |
| KILLARA | 7-Eleven Service Station (Former Mobil) | 496 Pacific HIGHWAY | Service Station | Contamination currently regulated under CLM Act | -33.77146554 | 151.1606903 |
| KILLARA | Former Caltex Service Station | 692B-694 Pacific  HIGHWAY | Service Station | Contamination formerly regulated under the CLM Act | -33.76306802 | 151.1550109 |

| Suburb | SiteName | Address | ContaminationActivityType | ManagementClass | Latitude | Longitude |
|---|---|---|---|---|---|---|
| KILLARA | Killara Garage | 544 Pacific HIGHWAY | Service Station | Regulation under CLM Act not required | -33.76974164 | 151.1599696 |
| KILLARA | Former BP Service Station Lindfield | 478 Pacific HIGHWAY | Service Station | Contamination currently regulated under CLM Act | -33.7719298 | 151.1613874 |
| KILLARA | Land Adjacent to Former Service Station Site | 684-684a, 690, 692 and 696 Pacific HIGHWAY | Service Station | Contamination formerly regulated under the CLM Act | -33.7631019 | 151.1548963 |
| KINCUMBER | Frost Reserve | Avoca DRIVE | Landfill | Contamination currently regulated under CLM Act | -33.47065695 | 151.3909044 |
| KINGS PARK | Multi-Fill | 14 Garling ROAD | Chemical Industry | Under assessment | -33.74478046 | 150.9111964 |
| KINGS PARK | Former Dow Corning Factory | 21 Tattersall ROAD | Chemical Industry | Regulation under CLM Act not required | -33.75012653 | 150.9138477 |
| KINGSFORD | Caltex Service Station | 603-611 Anzac PARADE | Service Station | Regulation under CLM Act not required | -33.93435787 | 151.2371198 |
| KINGSFORD | Coles Express Service Station Kingsford | 58 Gardeners ROAD | Service Station | Regulation under CLM Act not required | -33.9250054 | 151.2257601 |
| KINGSGROVE | Shell Coles Express Service Station | 137 Kingsgrove ROAD | Service Station | Regulation under CLM Act not required | -33.93276948 | 151.099026 |
| KINGSGROVE | Caltex Kingsgrove | 351-357 Stoney Creek ROAD | Service Station | Regulation under CLM Act not required | -33.95132175 | 151.0926872 |
| KINGSGROVE | State Transit Authority Depot | 17-23 Richland  STREET | Other Petroleum | Regulation under CLM Act not required | -33.93646086 | 151.0973617 |
| KIRRAWEE | Ingal Civil Products | 127-141 Bath ROAD | Metal Industry | Regulation under CLM Act not required | -34.03029516 | 151.0754469 |
| KIRRAWEE | 7-Eleven (former Mobil) Service Station | 542-546 Princes HIGHWAY | Service Station | Regulation under CLM Act not required | -34.03238179 | 151.0758071 |
| KIRRAWEE | Caltex-branded Kirrawee Service Station | (1-3 Waratah Street) 487 Princes HIGHWAY | Service Station | Regulation under CLM Act not required | -34.02915971 | 151.0808279 |
| KOGARAH | Scarborough Park South | 184R Production AVENUE | Landfill | Regulation being finalised | -33.97922253 | 151.140276 |
| KOGARAH | Caltex Service Station | 29 President AVENUE | Service Station | Regulation under CLM Act not required | -33.96516866 | 151.141145 |

| Suburb | SiteName | Address | ContaminationActivityType | ManagementClass | Latitude | Longitude |
|---|---|---|---|---|---|---|
| KOGARAH | 7-Eleven Service Station | 736 Princes HIGHWAY | Service Station | Regulation under CLM Act not required | -33.96406472 | 151.1376011 |
| KOGARAH | Woolworths Petrol Service Station | 69 Princes HIGHWAY | Service Station | Regulation under CLM Act not required | -33.96330397 | 151.1371182 |
| KOOLKHAN | Former Koolkhan Power Station | Summerland WAY | Other Industry | Regulation under CLM Act not required | -29.61688704 | 152.9300645 |
| KOORAGANG | NPC, berths 2 and 3 | Heron ROAD | Metal Industry | Regulation under CLM Act not required | -32.89260063 | 151.7742527 |
| KOORAGANG | Kooragang Island Waste Facility | Off Cormorant ROAD | Metal Industry | Contamination currently regulated under POEO Act | -32.86901125 | 151.7377773 |
| KOORAGANG | Orica Kooragang Island | 15 Greenleaf ROAD | Chemical Industry | Contamination currently regulated under CLM Act | -32.89654619 | 151.7771372 |
| KOORAGANG | Former Boral Timber Export Facility | 16 Heron ROAD | Other Industry | Regulation under CLM Act not required | -32.89710295 | 151.7739966 |
| KOORAGANG | Cleanaway Technical Services | 19 Egret STREET | Other Industry | Regulation under CLM Act not required | -32.8812145 | 151.766282 |
| KOORAGANG | Industrial Facility | 39 Heron ROAD | Chemical Industry | Under assessment | -32.89106439 | 151.7784064 |
| KOORAGANG | Vacant Land | Raven Street and Cormorant ROAD | Unclassified | Regulation under CLM Act not required | -32.88410199 | 151.7701334 |
| KOORAGANG | Linx Logistics | 240 Cormorant ROAD | Other Industry | Regulation under CLM Act not required | -32.87480951 | 151.7757352 |
| KOORINGAL | Former Shell Wagga Depot | 11-15 Lake Albert ROAD | Other Petroleum | Regulation under CLM Act not required | -35.12273113 | 147.3786005 |
| KOORINGAL | Caltex Service Station | 265-267 Lake Albert ROAD | Service Station | Regulation under CLM Act not required | -35.14078443 | 147.3755442 |
| KOORINGAL | Caltex-branded (former Mobil) Service Station | 24 Lake Albert ROAD | Service Station | Regulation under CLM Act not required | -35.12239591 | 147.3769936 |
| KOSCIUSZKO | Smiggin Holes Snow Clearing Shed | Link ROAD | Landfill | Regulation under CLM Act not required | -36.39098211 | 148.4304981 |
| KOSCIUSZKO | Khancoban Spoil Dump | Alpine WAY | Landfill | Regulation under CLM Act not required | -36.21982803 | 148.1527401 |

| Suburb | SiteName | Address | ContaminationActivityType | ManagementClass | Latitude | Longitude |
|---|---|---|---|---|---|---|
| KOSCIUSZKO | Sawpit Creek landfill | 13km from Jindabyne, off Kosciuszko ROAD | Landfill | Regulation under CLM Act not required | -36.34858097 | 148.5673374 |
| KURMOND | BP Service Station | 501 Bells Line of road ROAD | Service Station | Contamination formerly regulated under the CLM Act | -33.55099195 | 150.6912536 |
| KURNELL | Former Phillips Imperial Chemicals site | 260 Captain Cook DRIVE | Chemical Industry | Regulation under CLM Act not required | -34.02493837 | 151.1952149 |
| KURNELL | Caltex Kurnell Terminal (refer also to ID23868) | 2 Solander STREET | Other Petroleum | Contamination currently regulated under POEO Act | -34.0175214 | 151.2159572 |
| KURNELL | Abbott Australasia | Captain Cook DRIVE | Chemical Industry | Contamination formerly regulated under the CLM Act | -34.02339937 | 151.19921 |
| KURNELL | Former Caltex Kurnell Service Station | Corner Captain Cook Drive and Solander STREET | Service Station | Regulation under CLM Act not required | -34.01269846 | 151.2094347 |
| KURRI KURRI | United Petroleum Service Station Kurri Kurri | 279-281 Lang STREET | Service Station | Contamination formerly regulated under the CLM Act | -32.82047175 | 151.477646 |
| KURRI KURRI | Kurri Kurri Smelter | Hart ROAD | Metal Industry | Regulation under CLM Act not required | -32.7873063 | 151.4828827 |
| KYOGLE | Caltex Service Station | 22-24 Summerland WAY | Service Station | Regulation under CLM Act not required | -28.61806766 | 153.003862 |
| LAKE HAVEN | Caltex Service Station | Goobarabah Ave Cnr Gorokan DRIVE | Service Station | Regulation under CLM Act not required | -33.24337276 | 151.5065335 |
| LAKEMBA | Former Lakemba Police Station | 59 Quigg STREET | Unclassified | Regulation under CLM Act not required | -33.92199239 | 151.079412 |
| LAKEMBA | Caltex Service Station - Corner Punchbowl Rd and Wangee Rd | 81 Wangee ROAD | Service Station | Regulation under CLM Act not required | -33.91153044 | 151.073306 |
| LAKEMBA | Caltex Service Station | 961-967 Canterbury ROAD | Service Station | Regulation under CLM Act not required | -33.92671102 | 151.0814905 |
| LAMBTON | Caltex Service Station | 422 Newcastle ROAD | Service Station | Regulation under CLM Act not required | -32.9095592 | 151.7109684 |
| LAMBTON | 4-26 Verulam Road, Lambton NSW 2299 | 4-26 Verulam ROAD | Other Industry | Under assessment | -32.911599 | 151.717604 |
| LANE COVE | 7-Eleven Service Station | 203 Burns Bay ROAD | Service Station | Regulation under CLM Act not required | -33.81458334 | 151.1543844 |

| Suburb | SiteName | Address | ContaminationActivityType | ManagementClass | Latitude | Longitude |
|---|---|---|---|---|---|---|
| LANE COVE | BP-branded Jasbe Service Station | 62-70 Epping ROAD | Service Station | Regulation under CLM Act not required | -33.81108427 | 151.1641531 |
| LANE COVE | Pacific Power | Sirius ROAD | Other Industry | Ongoing maintenance required to manage residual contamination (CLM Act) | -33.80701776 | 151.1449658 |
| LANE COVE | Coles Express Service Station Burns Bay | 254 Burns Bay ROAD | Service Station | Regulation under CLM Act not required | -33.81719214 | 151.1518774 |
| LANE COVE | 331-335 Burns Bay Road, Lane Cove NSW 2066 | 331 and 333 - 335 Burns Bay ROAD | Other Industry | Under assessment | -33.8211575 | 151.1493074 |
| LANE COVE NORTH | Former Caltex Service Station | 428-432 Mowbray ROAD | Service Station | Regulation under CLM Act not required | -33.80804563 | 151.1721538 |
| LANE COVE NORTH | BP Artarmon Service Station, Lane Cove North | 432 Pacific HIGHWAY | Service Station | Contamination currently regulated under CLM Act | -33.8112038 | 151.175547 |
| LANE COVE WEST | Caltex Lane Cove West | 235-245 Burns Bay ROAD | Service Station | Regulation under CLM Act not required | -33.81719214 | 151.1518774 |
| LANE COVE WEST | Ventemans Reach Bushland | Off Mars ROAD | Unclassified | Regulation under CLM Act not required | -33.80499552 | 151.1450719 |
| LANSVALE | Mobil Service Station | 44 Hume HIGHWAY | Service Station | Regulation under CLM Act not required | -33.89172416 | 150.9656537 |
| LAURIETON | Camden Haven Tyre and Brake Centre (Former Caltex Service Station) | 461 Ocean DRIVE | Service Station | Regulation under CLM Act not required | -31.64367775 | 152.7977735 |
| LAVENDER BAY | SRA Land | French STREET | Unclassified | Regulation under CLM Act not required | -33.84560621 | 151.2030148 |
| LAVINGTON | Former Caltex Service Station | 373-375 Wagga ROAD | Service Station | Regulation under CLM Act not required | -36.04797551 | 146.9385325 |
| LAVINGTON | Caltex Service Station | 436 Wagga (corner Dick Road) ROAD | Service Station | Regulation under CLM Act not required | -36.04500034 | 146.9444932 |
| LAVINGTON | Former ERS liquid waste treatment and storage facility | 819 Knights ROAD | Other Industry | Regulation under CLM Act not required | -36.06763885 | 146.942143 |
| LEETON | Former Mobil Depot | 108 Calrose STREET | Other Petroleum | Regulation under CLM Act not required | -34.55813326 | 146.3921296 |
| LEETON | Caltex Service Station | 1 Belah STREET | Service Station | Regulation under CLM Act not required | -34.55421752 | 146.3998431 |

## Appendix G EPA PFAS Site Register



In this section

# The NSW Government PFAS Investigation Program

NSW has a nation leading, state-wide PFAS investigation program underway to identify the use and impacts of legacy PFAS.

The EPA is leading an investigation program to assess the legacy of PFAS use across NSW. With the assistance of the NSW PFAS Technical Advisory Group, which includes NSW Health, Department of Primary Industries and the Office of Environment and Heritage, we provide impacted residents with tailored, precautionary dietary advice to help them reduce any exposure to PFAS.

Current investigations are focused on sites where it is likely that large quantities of PFAS have been used. The EPA is currently investigating PFAS at these sites:

List view

Tags: PFAS (/Search?q=PFAS)

## Sampling and analysis

The EPA is collecting samples of soils and/or waters for analysis for PFAS. The EPA is also looking for exposure pathways that may increase people's contact with the chemicals, such as bore and surface water usage.

If significant levels are detected and human or ecological exposure is likely, a more detailed assessment will be undertaken.

The EPA will work with the occupiers and owners of these sites, or the responsible parties, to clean-up the site, where necessary.

## Timeframes for the investigation

The initial investigations can take approximately six months, with further testing undertaken where required.

Test findings are made available throughout the investigations.

More information is available on the NSW EPA **PFAS investigation process (/your-environment/contaminated-land/pfas-investigation-program/pfas-investigation-process)** page.

## Release of the National Environmental Management Plan for PFAS version 2

**The PFAS National Environmental Management Plan version 2 (https://www.environment.gov.au/protection/chemicals-management/pfas)** has now been released by the Commonwealth Department of Agriculture Water and Environment. This is the current version of the PFAS NEMP. It was agreed by Heads of EPAs in October 2019. It has been endorsed by Environment Ministers and has been endorsed for implementation in NSW.

In those jurisdictions that have endorsed it, this version supersedes the first version of the NEMP published in 2018.

The PFAS NEMP establishes a practical basis for nationally consistent environmental guidance and standards for managing PFAS contamination. The plan has been developed by all jurisdictions and recognises the need for implementation of best practice regulation through individual jurisdictional mechanisms. It represents a how-to guide for the investigation and management of PFAS contamination and waste management.

The PFAS NEMP 2.0 provides new and revised guidance on four of the areas that were identified as urgent priorities in the first version of the NEMP

- Environmental guideline values
- Soil reuse
- Wastewater management
- On-site containment

This new guidance, as well as important clarifications regarding the intent of some of the PFAS NEMP 1.0 material, was developed by the National Chemicals Working Group across 2018 and considered by Heads of EPAs and Environment Ministers in late 2018.

## Consultation on version 2 of NEMP

The Heads of EPAs Australia and New Zealand (HEPA) and the Australian Government Department of Agriculture, Water and the Environment (DAWE) worked together to develop the PFAS NEMP 2.0. HEPA's National Chemicals Working Group led the development and consultation process.

The draft PFAS NEMP 2.0 was published on 28 February 2019 with comments due by Friday 21 June 2019. Environmental regulators in all states and territories hosted public consultation sessions in all capital cities across March and April 2019, with the Commonwealth presenting the work on behalf of the National Chemicals Working Group. Around 550 people attended the sessions.

All feedback received was considered by the National Chemicals Working Group and further changes were made in response to that feedback before the document was finalised in late 2019. An ancillary document summarising the feedback and the responses made is expected to be published soon by the Commonwealth Department of Agriculture Water and Environment.

## Working with our stakeholders

The NSW Government is committed to working closely with all relevant government agencies, to closely monitor the progress of investigations, and to keep local communities informed. Government agencies include local councils, NSW Department of Primary Industries, NSW Health, NSW Food Authority, and where necessary the Commonwealth Department of Defence, and Commonwealth Department of Health.

In NSW the polluter pays for and manages any clean-up required. Although the NSW Government cannot regulate Defence sites, it has outlined expectations that Defence will carry out investigations in a timely manner that is consistent with the EPA's requirements and processes.

## More information

- PFAS investigation program fact sheet (PDF 213KB) (/-/media/epa/corporate-site/resources/community/factsheet-state-wide-pfas-investigation.pdf?la=en&hash=004EE1C28CEC9F16730FBFF322305DA0DDF1A3ED)
- PFAS investigation program FAQs (/your-environment/contaminated-land/pfas-investigation-program/pfas-investigation-faqs) page
- NSW Department of Health (https://www.health.nsw.gov.au/environment/factsheets/Pages/pfos.aspx)
- For specific health inquiries call the NSW Department of Health on **1300 066 055**
- If you have any questions about the EPA's PFAS investigation program, please call the Environment Line on **131 555** or email**info@environment.nsw.gov.au** (mailto:info@environment.nsw.gov.au)

*Page last updated 23 November 2020*

## For business and industry

## For local government

## Contact us

131 555 (tel:131555)

Online (https://yoursay.epa.nsw.gov.au/epa-website-feedback)

info@epa.nsw.gov.au (mailto:info@epa.nsw.gov.au)

EPA Office Locations (/about-us/contact-us/locations)

Map view | List view

Clear filters | ☐ Only show sites within current map view

Showing 48 of 48 sites

| Organisation | Address | Status |
|---|---|---|
| **filter by organisation** | **filter by address* | ☑ PFAS investigation site |
| Albion Park Fire and Rescue NSW more information | Airport Road, Albion Park, 2527 | PFAS investigation site |
| Alexandria Fire and Rescue NSW more information | 189 Wyndham Street Alexandria | PFAS investigation site |
| Argenton Mines Rescue Services more information | 533 Lake Road, Argenton NSW 2284 | PFAS investigation site |
| Armidale Fire and Rescue NSW more information | 10 Mann Street, Armidale, 2350 | PFAS investigation site |
| Bankstown Airport more information | 3 Avro St, Bankstown NSW 2200 | PFAS investigation site |
| Bathurst airport more information | P J Moodie Memorial Dr, Raglan NSW 2795 | PFAS investigation site |
| Botany Bay area more information | | PFAS investigation site |
| Botany Industrial Park more information | Dent Street, Botany, 2019 | PFAS investigation site |
| Camden Airport more information | Aerodrome Rd, Cobbitty NSW 2570 | PFAS investigation site |
| Currambene Creek more information | | PFAS investigation site |
| Deniliquin Fire and Rescue NSW more information | | PFAS investigation site |
| Dubbo groundwater investigation more information | | PFAS investigation site |
| Fuchs more information | 2 Holland St, Wickham NSW 2293 | PFAS investigation site |
| Gold Coast airport | Eastern Avenue, Coolangatta, QLD 4225 | PFAS investigation site |

| | | |
|---|---|---|
| Fuchs<br>more information | 2 Holland St, Wickham NSW 2293 | PFAS investigation site |
| Gold Coast airport<br>more information | Eastern Avenue, Coolangatta, QLD 4225 | PFAS investigation site |
| Greenacre Fire and Rescue<br>more information | 1 and 1A Amarina Avenue, Greenacre | PFAS investigation site |
| Hawkesbury River<br>more information | | PFAS investigation site |
| Heatherbrae: Total Fire Solutions<br>more information | 15 Giggins Rd, Heatherbrae NSW 2324 | PFAS investigation site |
| HMAS Albatross<br>more information | Nowra Hill, 2540 | PFAS investigation site |
| Holsworthy Barracks<br>more information | Macarthur Drive, Holsworthy, 2173 | PFAS investigation site |
| Jervis Bay range facility<br>more information | Jervis Bay Territory, 2540 | PFAS investigation site |
| Kapooka, Blamey Barracks<br>more information | Kapooka Dr, Kapooka NSW 2661 | PFAS investigation site |
| Kemps Creek NSW Rural Fire Service<br>more information | 245 Devonshire Rd, Kemps Creek NSW 2178 | PFAS investigation site |
| Kurnell: Caltex<br>more information | 2 Solander St, Kurnell, 2231 | PFAS investigation site |
| Lake Macquarie<br>more information | | PFAS investigation site |
| Lake Toolooma<br>more information | Heathcote National Park | PFAS investigation site |
| Lithgow: Mines Rescue<br>more information | 3 Proto Ave, Lithgow NSW 2790 | PFAS investigation site |
| Londonderry TestSafe & Fire and Rescue NSW<br>more information | 667 The Northern Road, Londonderry, 2753 | PFAS investigation site |
| Lord Howe Island<br>more information | | PFAS investigation site |
| Mulwala - Thales | Bayly St, Mulwala NSW 2647 | PFAS investigation site |

| | | |
|---|---|---|
| Lord Howe Island<br>more information | | PFAS investigation site |
| Mulwala - Thales<br>more information | Bayly St, Mulwala NSW 2647 | PFAS investigation site |
| Munmorah and Colongra Power Stations<br>more information | Station Road, Colongra NSW 2262 | PFAS investigation site |
| Orange airport<br>more information | 136 Aerodrome Road, Orange NSW 2800 | PFAS investigation site |
| Quirindi Airport<br>more information | Quirindi NSW 2343 | PFAS investigation site |
| Richmond RAAF Base<br>more information | Middleton Avenue, Richmond, 2753 | PFAS investigation site |
| Rutherford, Truegain<br>more information | 62 Kyle St, Rutherford NSW 2320 | PFAS investigation site |
| Salt Ash weapons range<br>more information | Salt Ash NSW | PFAS investigation site |
| Shoalhaven River<br>more information | | PFAS investigation site |
| Singleton Heights: Mines Rescue Services<br>more information | 6 Lachland Avenue, Singleton Heights NSW 2330 | PFAS investigation site |
| Singleton military area<br>more information | | PFAS investigation site |
| Singleton NSW Rural Fire Service<br>more information | | PFAS investigation site |
| South Nowra NSW Rural Fire Service<br>more information | 92 Albatross Road, South Nowra | PFAS investigation site |
| Springwood, St Columba's Catholic College<br>more information | 168 Hawkesbury Rd, Springwood, 2777 | PFAS investigation site |
| Swanson Industries<br>more information | 2 Georgetown Road, Broadmeadow, 2292 | PFAS investigation site |
| Tamworth Regional Airport<br>more information | Shand Cir, Tamworth, 2340 | PFAS investigation site |
| Tarro, Our Lady of Lourdes Primary School | Anderson Drive Tarro, NSW 2322 | PFAS investigation site |

| | | |
|---|---|---|
| Tamworth Regional Airport<br>more information | Shand Cir, Tamworth, 2340 | PFAS investigation site |
| Tarro, Our Lady of Lourdes Primary School<br>more information | Anderson Drive Tarro, NSW 2322 | PFAS investigation site |
| Wagga Wagga RAAF Base<br>more information | Sturt Highway, Wagga Wagga, 2650 | PFAS investigation site |
| Wellington Fire and Rescue NSW<br>more information | 67 Falls Road, Wellington, 2820 | PFAS investigation site |
| Westleigh NSW Rural Fire Service<br>more information | 12 Warrigal Drive, Westleigh | PFAS investigation site |
| Williamtown RAAF Base<br>more information | 49 Medowie Road, Williamtown, 2314 | PFAS investigation site |

## Appendix H NSW Fair Trading Searches

# Loose-fill asbestos insulation register

Listen (https://app-oc.readspeaker.com/cgi-bin/rsent?customerid=7371&lang=en_au&readid=page-content&url=https://www.fairtrading.nsw.gov.au/loose-fill-asbestos-insulation-register)

## Look up the premises address

Please enter exact address information (including street type) of the address you wish to search (Note, the search fields are not case sensitive).

If a match is found, the premises has been identified as containing loose-fill asbestos insulation.

Results will only appear if an exact match of an address is found.

(The fields marked with * are required.)

**No Match Found** - A search match was not found in the Loose-fill Asbestos Insulation Register

Address searched: 2-44 O'Connell Street Kingswood

**This information is correct at the time of the search**

| | |
|---|---|
| **Unit** | |
| **Street number*** | |
| **Street name*** | |
| **Street type*** | Alley |
| **Suburb*** | |
| **Postcode** | |

**Submit**

# Appendix I Heritage Database Searches

# Search Results

## No results found.

*Enter at least one search criterion.*

Search Hints

Search Reset form

Place name

Street name

Town or suburb: Kingswood

State: New South Wales

Country

## Advanced search options

List: All Lists

*Different lists will provide different status and class options*

Local Government Area

Place ID number

Legal status: --All--

Class: --All--

Keyword Search

☑ Description ☑ Statement of Significance ☑ Place history

Latitude/Longitude

N

Latitude 1

Longitude 1 S Longitude 2

W E Latitude 2 E E

S

○ Wholly within region

◉ Wholly or partially within region

*Longitude coordinates should be entered as ddd.mm.ss*
*Latitude coordinates should be entered as dd.mm.ss*

Map Ref No

*1:100,000 eg 2357*
*1:250,000 eg SF-50-01*

### Search Hints

- Not all fields need to be filled in. The fewer you fill in the more results you will get.
- If you cannot find a place, check spelling and try alternative names. Reduce the number of words that you include and use fewer fields.
- The Local Government field used on its own will provide a comprehensive list of places in an area.

**Report Produced: Wed Dec 2 18:00:48 2020**

NSW GOVERNMENT | Heritage NSW

# Search for NSW Heritage

# Search for NSW heritage

Return to search page where you can refine/broaden your search.

## Statutory listed items

Information and items listed in the State Heritage Inventory come from a number of sources. This means that there may be several entries for the same heritage item in the database. For clarity, the search results have been divided into three sections.

- **Section 1** - contains Aboriginal Places declared by the **Minister for the Environment** under the National Parks and Wildlife Act. This information is provided by Heritage NSW.
- **Section 2** - contains heritage items listed by the **Heritage Council of NSW** under the Heritage Act. This includes listing on the State Heritage Register, an Interim Heritage Order or protected under section 136 of the Heritage Act. This information is provided by Heritage NSW.
- **Section 3** - contains items listed by **local councils** on Local Environmental Plans under the Environmental Planning and Assessment Act and **State government agencies** under s.170 of the Heritage Act. This information is provided by local councils and State government agencies.

---

## Section 1. Aboriginal Places listed under the National Parks and Wildlife Act.

Your search did not return any matching results.

## Section 2. Items listed under the Heritage Act.

Your search did not return any matching results.

## Section 3. Items listed by Local Government and State Agencies.

Your search returned 11 records.

| Item name ▲ | Address | Suburb | LGA | Information source |
|---|---|---|---|---|
| Federation House & Garden | 6 First Street | Kingswood | Penrith | LGOV |
| House | 43 Park Avenue | Kingswood | Penrith | LGOV |
| Kingswood Public School | 46-54 Second Avenue | Kingswood | Penrith | LGOV |
| Kingswood Public School - Building B00B | 46-54 Second Avenue | Kingswood | Penrith | SGOV |
| Milestone | Fronting Lot 1 DP 866081 Great Western Highway | Kingswood | Penrith | LGOV |
| Milestone | Fronting Lot 10 DP 719064 Great Western Highway | Kingswood | Penrith | LGOV |
| Penrith General Cemetery | Copeland Street | Kingswood | Penrith | LGOV |
| St Phillip's Anglican Church | 32 Bringelly Road | Kingswood | Penrith | LGOV |
| State Records Movable Heritage - Furniture | 143 O'Connell Street | Kingswood | Penrith | SGOV |
| State Records Movable Heritage - Memorials | 143 O'Connell Street | Kingswood | Penrith | SGOV |
| Teacher's Residence (former) | 56 Second Avenue | Kingswood | Penrith | LGOV |

There was a total of 11 records matching your search criteria.

---

**Key:**
LGA = Local Government Area
GAZ= NSW Government Gazette (statutory listings prior to 1997), HGA = Heritage Grant Application, HS = Heritage Study, LGOV = Local Government, SGOV = State Government Agency.
**Note:** While Heritage NSW seeks to keep the Inventory up to date, it is reliant on State agencies and local councils to provide their data. Always check with the relevant State agency or local council for the most up-to-date information.

## Appendix J Section 10.7 Planning Certificate

PENRITH CITY COUNCIL

Civic Centre
601 High Street, Penrith

PO Box 60 Penrith NSW 2751

Telephone: 02 4732 7777
Facsimile: 02 4732 7958

Email: pencit@penrithcity.nsw.gov.au

# PLANNING CERTIFICATE UNDER SECTION 10.7

**Environmental Planning and Assessment Act, 1979**

Property No: 724906
Your Reference: 59831
Contact No:

Issue Date: 18 November 2020
Certificate No: 20/05358

Issued to: Mr M Noujaim
116a Edgar Street
CONDELL PARK NSW 2200

PRECINCT 2010

## DESCRIPTION OF LAND

**County: CUMBERLAND** **Parish: CLAREMONT**

**Location:** 2-44 OConnell Street KINGSWOOD NSW 2747
**Land Description:** Lot 1 DP 866081

## - PART 1 PRESCRIBED MATTERS –

In accordance with the provisions of Section 10.7(2) of the Act the following information is furnished in respect of the abovementioned land:

### *1 NAMES OF RELEVANT PLANNING INSTRUMENTS AND DCPs*

***1(1) The name of each environmental planning instrument that applies to the carrying out of development on the land:***

Penrith Local Environmental Plan 2010, published 22nd September 2010, as amended, applies to the land.

Sydney Regional Environmental Plan No.9 - Extractive Industry (No.2), gazetted 15 September 1995, as amended, applies to the local government area of Penrith.

Sydney Regional Environmental Plan No. 20 - Hawkesbury-Nepean River (No. 2 - 1997), gazetted 7 November 1997, as amended, applies to the local government area of Penrith (except land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies).

The following State environmental planning policies apply to the land (subject to the exclusions noted below):

State Environmental Planning Policy No.19 - Bushland in Urban Areas. (Note: This policy does not apply to certain land referred to in the National Parks and Wildlife Act 1974 and the Forestry Act 1916.)
State Environmental Planning Policy No.21 - Caravan Parks.
State Environmental Planning Policy No.33 - Hazardous and Offensive Development.
State Environmental Planning Policy No.50 - Canal Estate Development. (Note: This policy does not apply to the land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies.
State Environmental Planning Policy No.55 - Remediation of Land.
State Environmental Planning Policy No.64 - Advertising and Signage.

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# PLANNING CERTIFICATE UNDER SECTION 10.7

**Environmental Planning and Assessment Act, 1979**

State Environmental Planning Policy No.65 - Design Quality of Residential Apartment Development.
State Environmental Planning Policy No.70 - Affordable Housing (Revised Schemes).
State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (Note: This policy applies to land within New South Wales that is land zoned primarily for urban purposes or land that adjoins land zoned primarily for urban purposes, but only as detailed in clause 4, 4A and 4B of the policy.)
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004.
State Environmental Planning Policy (State Significant Precincts) 2005.
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.
State Environmental Planning Policy (Infrastructure) 2007.
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.
State Environmental Planning Policy (Affordable Rental Housing) 2009.
State Environmental Planning Policy (State and Regional Development) 2011.
State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017.
State Environmental Planning Policy (Education Establishments and Child Care Centre Facilities) 2017.
State Environmental Planning Policy (Primary Production and Rural Development) 2019.
State Environmental Planning Policy (Western Sydney Aerotropolis) 2020.

***1(2) The name of each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act:***

A Planning Proposal seeking an amendment to Penrith Local Environmental Plan 2010 applies to this land.

The Planning Proposal (Penrith Local Environmental Plan 2010 (Review Phase 1)) seeks to align the LEP with the planning priorities set in the Greater Sydney Commission's 'Greater Sydney Region Plan - A Metropolis of Three Cities' and 'Western City District Plan'. It also seeks to respond to immediate outcomes from recent draft planning strategies as well as address minor housekeeping amendments (See www.penrithcity.nsw.gov.au for details)

Draft State Environmental Planning Policy (Environment) applies to the land.

Draft State Environmental Planning Policy (Remediation of Land) applies to the land.

Draft State Environmental Planning Policy (Housing Diversity) 2020 applies to the land.

Draft State Environmental Planning Policy (Cumberland Plain Conservation) applies to the land.

Draft State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 applies to the land.

***1(3) The name of each development control plan that applies to the carrying out of development on the land:***

Penrith Development Control Plan 2014 applies to the land.

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# PLANNING CERTIFICATE UNDER SECTION 10.7

**Environmental Planning and Assessment Act, 1979**

## *2 ZONING AND LAND USE UNDER RELEVANT LEPs*

***For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):***

***2(a)-(d) the identity of the zone; the purposes that may be carried out without development consent; the purposes that may not be carried out except with development consent; and the purposes that are prohibited within the zone. Any zone(s) applying to the land is/are listed below and/or in annexures.***

***(Note: If no zoning appears in this section see section 1(1) for zoning and land use details (under the Sydney Regional Environmental Plan or State Environmental Planning Policy that zones this property).)***

**Zone SP2 Infrastructure - Educational Establishment**
**(Penrith Local Environmental Plan 2010)**

**1 Objectives of zone**

- To provide for infrastructure and related uses.
- To prevent development that is not compatible with or that may detract from the provision of infrastructure.

**2 Permitted without consent**

Nil

**3 Permitted with consent**

The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose; Aquaculture; Environmental protection works; Flood mitigation works; Roads

**4 Prohibited**

Any development not specified in item 2 or 3

**Flood planning**

All or part of the subject land is identified in Penrith Local Environmental Plan 2010 (PLEP 2010) Clause 7.2 Flood Planning. Development consent is required for any development on land to which Clause 7.2 of PLEP 2010 applies.

**Additional information relating to Penrith Local Environmental Plan 2010**

**Note 1**: Under the terms of Clause 2.4 of Penrith Local Environmental Plan 2010 development may be carried out on unzoned land only with development consent.

**Note 2**: Under the terms of Clause 2.6 of Penrith Local Environmental Plan 2010 land may be subdivided but only with development consent, except for the exclusions detailed in the clause.

**Note 3**: Under the terms of Clause 2.7 of Penrith Local Environmental Plan 2010 the demolition of a building or work may be carried out only with development consent.

**Note 4**: A temporary use may be permitted with development consent subject to the requirements of Clause 2.8 of Penrith Local Environmental Plan 2010.

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**Note 5**: Under the terms of Clause 4.1A of Penrith Local Environmental Plan 2010, despite any other provision of this plan, development consent must not be granted for dual occupancy on an internal lot in Zone R2 Low Density Residential.

**Note 6**: Under the terms of Clause 5.1 of Penrith Local Environmental Plan 2010 development on land acquired by an authority of the State under the owner-initiated acquisition provisions may, before it is used for the purpose for which it is reserved, be carried out, with development consent, for any purpose.

**Note 7**: Under the terms of Clause 5.3 of Penrith Local Environmental Plan 2010 development consent may be granted to development of certain land for any purpose that may be carried out in an adjoining zone.

**Note 8**: Clause 5.10 of Penrith Local Environmental Plan 2010 details when development consent is required/not required in relation to heritage conservation.

**Note 9:** Under the terms of Clause 5.11 of Penrith Local Environmental Plan 2010 bush fire hazard reduction work authorised by the *Rural Fires Act 1997* may be carried out on any land without development consent.

**Note 10**: Under the terms of Clause 7.1 of Penrith Local Environmental Plan 2010 (PLEP 2010) development consent is required for earthworks unless the work is exempt development under PLEP 2010 or another applicable environmental planning instrument, or the work is ancillary to other development for which development consent has been given.

**Note 11**: Sex services premises and restricted premises may only be permitted subject to the requirements of Clause 7.23 of Penrith Local Environmental Plan 2010.

***2(e) whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed:***

(Information is provided in this section only if any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed.)

***2(f) whether the land includes or comprises critical habitat:***

(Information is provided in this section only if the land includes or comprises critical habitat.)

***2(g) whether the land is in a conservation area (however described):***

(Information is provided in this section only if the land is in a conservation area (however described).)

***2(h) whether an item of environmental heritage (however described) is situated on the land:***

(Information is provided in this section only if an item of environmental heritage (however described) is situated on the land.)

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# PLANNING CERTIFICATE UNDER SECTION 10.7

**Environmental Planning and Assessment Act, 1979**

## *2A ZONING AND LAND USE UNDER STATE ENVIRONMENTAL PLANNING POLICY (SYDNEY REGION GROWTH CENTRES) 2006*

(Information is provided in this section only if the land is within any zone under State Environmental Planning Policy (Sydney Region Growth Centres) 2006.)

## *3 COMPLYING DEVELOPMENT*

### *HOUSING CODE*

(The Housing Code only applies if the land is within Zones R1, R2, R3, R4 or RU5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

- The land is affected by a reservation for a public purpose. If the land is within the relevant zones complying development under the Housing Code **may not** be carried out on any part of the land that is reserved for a public purpose by an environmental planning instrument. Complying development **may** be carried out on any part of the land that is not reserved for a public purpose by an environmental planning instrument. For the purposes of this section "public purpose" means any land that is zoned either Zone E1, RE1, SP1 or SP2 under an environmental planning instrument or an equivalent zone in a non standard template planning instrument, or land that is subject to acquisition.

### *RURAL HOUSING CODE*

(The Rural Housing Code only applies if the land is within Zones RU1, RU2, RU3, RU4, RU6 or R5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

- The land is affected by a reservation for a public purpose. If the land is within the relevant zones complying development under the Rural Housing Code **may not** be carried out on any part of the land that is reserved for a public purpose by an environmental planning instrument. Complying development **may** be carried out on any part of the land that is not reserved for a public purpose by an environmental planning instrument. For the purposes of this section "public purpose" means any land that is zoned either Zone E1, RE1, SP1 or SP2 under an environmental planning instrument or an equivalent zone in a non standard template planning instrument, or land that is subject to acquisition.

### *LOW RISE HOUSING DIVERSITY CODE*

(The Low Rise Housing Diversity Code only applies if the land is within Zones R1, R2, R3 or RU5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

- The land is affected by a reservation for a public purpose. If the land is within the relevant zones complying development under the Low Rise Housing Diversity Code **may not** be carried out on any part of the land that is reserved for a public purpose by an environmental planning instrument. Complying development **may** be carried out on any part of the land that is not reserved for a public purpose by an environmental planning instrument. For the purposes

of this section "public purpose" means any land that is zoned either Zone E1, RE1, SP1 or SP2 under an environmental planning instrument or an equivalent zone in a non standard template planning instrument, or land that is subject to acquisition.

***GREENFIELD HOUSING CODE***

(The Greenfield Housing Code only applies if the land is within Zones R1, R2, R3, R4 or RU5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument, and if the land is identified as a Greenfield Housing Code Area by the Greenfield Housing Code Area Map.)

- The land is affected by a reservation for a public purpose. If the land is within the relevant zones, and if the land is identified as a Greenfield Housing Code Area by the Greenfield Housing Code Area Map complying development under the Greenfield Housing Code **may not** be carried out on any part of the land that is reserved for a public purpose by an environmental planning instrument. Complying development **may** be carried out on any part of the land that is not reserved for a public purpose by an environmental planning instrument. For the purposes of this section "public purpose" means any land that is zoned either Zone E1, RE1, SP1 or SP2 under an environmental planning instrument or an equivalent zone in a non standard template planning instrument, or land that is subject to acquisition.

***HOUSING ALTERATIONS CODE***

Complying development under the Housing Alterations Code **may** be carried out on the land.

***GENERAL DEVELOPMENT CODE***

Complying development under the General Development Code **may** be carried out on the land.

***COMMERCIAL AND INDUSTRIAL ALTERATIONS CODE***

Complying development under the Commercial and Industrial Alterations Code **may** be carried out on the land.

***SUBDIVISIONS CODE***

Complying development under the Subdivisions Code **may** be carried out on the land.

***DEMOLITION CODE***

Complying development under the Demolition Code **may** be carried out on the land.

***COMMERCIAL AND INDUSTRIAL (NEW BUILDINGS AND ADDITIONS) CODE***

(The Commercial and Industrial (New Buildings and Additions) Code only applies if the land is within Zones B1, B2, B3, B4, B5, B6, B7, B8, IN1, IN2, IN3, IN4 or SP3 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

- The land is affected by a reservation for a public purpose. If the land is within the relevant zones complying development under the Commercial and Industrial (New Buildings and Additions) Code **may not** be carried out on any part of the land that is reserved for a public purpose by an environmental planning instrument. Complying development **may** be carried out on any part of the land that is not reserved for a public purpose by an environmental planning instrument. For the purposes of this section "public purpose" means any land that is zoned either Zone E1, RE1, SP1 or SP2 under an environmental planning instrument or an equivalent zone in a non standard template planning instrument, or land that is subject to acquisition.

***FIRE SAFETY CODE***

Complying development under the Fire Safety Code **may** be carried out on the land.

(NOTE: (1) Council has relied on Planning and Infrastructure Circulars and Fact Sheets in the preparation of this information. Applicants should seek their own legal advice in relation to this matter with particular reference to State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

(2) Penrith Local Environmental Plan 2010 (if it applies to the land) contains additional complying development not specified in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.)

## *4 COASTAL PROTECTION*

The land is not affected by the operation of sections 38 or 39 of the Coastal Protection Act 1979, to the extent that council has been so notified by the Department of Public Works.

## *5 MINE SUBSIDENCE*

The land is not proclaimed to be a mine subsidence district within the meaning of section 15 of the Mine Subsidence Compensation Act 1961.

## *6 ROAD WIDENING AND ROAD REALIGNMENT*

The land is not affected by any road widening or road realignment under:
(a) Division 2 of Part 3 of the Roads Act 1993, or
(b) an environmental planning instrument, or
(c) a resolution of council.

## *7 COUNCIL AND OTHER PUBLIC AUTHORITY POLICIES ON HAZARD RISK RESTRICTIONS*

**(a) Council Policies**
The land is affected by the Asbestos Policy adopted by Council.
The land is not affected by any other policy adopted by the council that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

**(b) Other Public Authority Policies**
The Bush Fire Co-ordinating Committee has adopted a Bush Fire Risk Management Plan that covers the local government area of Penrith City Council, and includes public, private and Commonwealth lands.

The land is not affected by a policy adopted by any other public authority and notified to the council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the council, that restricts the development of the land because of the likelihood of land slip, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

### *7A FLOOD RELATED DEVELOPMENT CONTROLS INFORMATION*

(1) Development on the land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) (if such uses are permissible on the land) is subject to flood related development controls.

(2) Development on the land or part of the land for industrial or commercial purposes (if such uses are permissible on the land) is subject to flood related development controls.
Development on the land or part of the land for purposes other than industrial or commercial, or for purposes other than those referred to in (1) above, will be considered on a merits based approach and flood related development controls may apply.

Note: The land is subject to Penrith Development Control Plan 2014 Section C3.5 Flood Planning. On application and payment of the prescribed fee Council may be able to provide in writing a range of advice in regard to the extent of flooding affecting the property.

### *8 LAND RESERVED FOR ACQUISITION*

No environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 3.15 of the Act.

### *9 CONTRIBUTIONS PLANS*

The Cultural Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith.

The Penrith City Local Open Space Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith, excluding industrial areas and the release areas identified in Appendix B of the Plan (Penrith Lakes, Cranebrook, Sydney Regional Environmental Plan No. 30 - St Marys, Waterside, Thornton, the WELL Precinct, Glenmore Park and Erskine Park).

The Penrith City District Open Space Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith, with the exclusion of industrial lands and the Penrith Lakes development site.

The Werrington Enterprise Living and Learning (WELL) Precinct - Development Contributions Plan 2008 applies to the land.

Penrith Citywide Section 7.12 Development Contributions Plan for non-residential development applies to all land in the City of Penrith LGA, with the exception of land within the Lambridge Estate, WELL Precinct and Penrith City Centre that are currently subject to other development contributions plans for non-residential development.

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### *9A BIODIVERSITY CERTIFIED LAND*

(Information is provided in this section only if the land is biodiversity certified land under Part 8 of the *Biodiversity Conservation Act 2016*.)

### *10 BIODIVERSITY STEWARDSHIP SITES*

(Information is provided in this section only if Council has been notified by the Chief Executive of the Office of Environment and Heritage that the land is land to which a biobanking stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016* relates.)

### *10A NATIVE VEGETATION CLEARING SET ASIDES*

(Information is provided in this section only if Council has been notified of the existence of a set aside area by Local Land Services or it is registered in the public register under which section 60ZC of the *Local Land Services Act 2013* relates).

### *11 BUSH FIRE PRONE LAND*

Some of the land is identified as bush fire prone land according to Council records. Guidance as to restrictions that may be placed on the land as a result of the land being bush fire prone can be obtained by contacting Council. Such advice would be subject to further requirements of the NSW Rural Fire Services.

### *12 PROPERTY VEGETATION PLANS*

(Information is provided in this section only if Council has been notified that the land is land to which a property vegetation plan approved under the *Native Vegetation Act 2003* applies and continues in force.)

### *13 ORDERS UNDER TREES (DISPUTES BETWEEN NEIGHBOURS) ACT 2006*

(Information is provided in this section only if Council has been notified that an order has been made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land.)

### *14 DIRECTIONS UNDER PART 3A*

(Information is provided in this section only if there is a direction by the Minister in force under section 75P(2)(c1) of the Act (repealed on 1st October 2011) that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act does not have effect.)

### *15 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS AFFECTING SENIORS HOUSING*

(Information is provided in this section only if:

(a) there is a current site compatibility certificate (seniors housing), of which the council is aware, issued under State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 in respect of proposed development on the land; and/or
(b) any terms of a kind referred to in clause 18(2) of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.)

### *16 SITE COMPATIBILITY CERTIFICATES FOR INFRASTRUCTURE*

(Information is provided in this section only if there is a valid site compatibility certificate (infrastructure), of which council is aware, in respect of proposed development on the land.)

### *17 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR AFFORDABLE RENTAL HOUSING*

(Information is provided in this section only if:
(a) there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land; and/or
(b) any terms of a kind referred to in clause 17(1) or 37(1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 have been imposed as a condition of consent to a development application in respect of the land.)

### *18 PAPER SUBDIVISION INFORMATION*

(Information is provided in this section only if a development plan adopted by a relevant authority applies to the land or is proposed to be subject to a consent ballot, or a subdivision order applies to the land.)

### *19 SITE VERIFICATION CERTIFICATES*

(Information is provided in this section only if there is a current site verification certificate, of which council is aware, in respect of the land.)

***NOTE: The following matters are prescribed by section 59(2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate***

(a) (Information is provided in this section only if, as at the date of this certificate, the land (or part of the land) is significantly contaminated land within the meaning of the Contaminated Land Management Act 1997.)

(b) (Information is provided in this section only if, as at the date of this certificate, the land is subject to a management order within the meaning of the Contaminated Land Management Act 1997.)

(c) (Information is provided in this section only if, as at the date of this certificate, the land is the subject of an approved voluntary management proposal within the meaning of the Contaminated Land Management Act 1997.)

(d) (Information is provided in this section only if, at the date of this certificate, the land subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997.)

(e) (Information is provided in this section only if the land is the subject of a site audit statement within the meaning of the Contaminated Land Management Act 1997 - a copy of which has been provided to Council.)

Note: Section 10.7(5) information for this property may contain additional information regarding contamination issues.

### *20 LOOSE FILL ASBESTOS INSULATION*

(Information is provided in this section only if there is a residential premises listed on the register of residential premises that contain or have contained loose-fill asbestos insulation (as required by Division 1A of Part 8 of the Home Building Act 1989))

### *21 AFFECTED BUILDING NOTICES AND BUILDING PRODUCT RECTIFICATION ORDERS*

(Information is provided in this section only if Council is aware of any "affected building notice" and/or a "building product rectification order" in force for the land).

### *22 STATE ENVIRONMENTAL PLANNING POLICY – WESTERN SYDNEY AEROTROPOLIS 2020*

The land may be subject to additional planning considerations under State Environmental Planning Policy (Western Sydney Aerotropolis) 2020:

| | Planning Control | Affected? |
|---|---|---|
| (a) | Subject to an ANEF or ANEC contour of 20 or greater | No |
| (b) | Affected by the Lighting Intensity and Wind Shear Map | No |
| (c) | Affected by the Obstacle Limitation Surface Map | Yes |
| (d) | Affected by the "public safety area" on the Public Safety Area Map | No |
| (e) | Within the "3km zone" or the "13km zone" of the Wildlife Buffer Zone Map | Yes |

Note: The Environmental Planning and Assessment Amendment Act 2017 commenced operation on the 1 March 2018. As a consequence of this Act the information contained in this certificate needs to be read in conjunction with the provisions of the Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017, and Environmental Planning and Assessment Regulation 2000.

Information is provided only to the extent that Council has been notified by relevant government departments.

**10.7(5) Certificate**
**This Certificate is directed to the following relevant matters affecting the land**

When information pursuant to section 10.7(5) is requested the Council is under no obligation to furnish any of the information supplied herein pursuant to that section. Council draws your attention

to section 10.7(6) which states that a council shall not incur any liability in respect of any advice provided in good faith pursuant to sub-section (5). The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this certificate.

Note:

- Council's 10.7(5) information does not include development consent or easement information. Details of development consents may be obtained by making enquiries with Council's Development Services Department pursuant to section 12 of the Local Government Act 1993 or (for development applications lodged after January 2007) by viewing the Online Services area at www.penrithcity.nsw.gov.au . Details of any easements may be obtained from a Title Search at Land and Property Information New South Wales.
- This certificate does not contain information relating to Complying Development Certificates.
- This certificate may not provide full details of development rights over the land.

* Biodiversity Conservation Act 2016

When considering any development application Council must have regard to the Biodiversity Conservation Act 2016. Please note that this legislation may have application to any land throughout the city. Interested persons should make their own enquiries in regard to the impact that this legislation could have on this land.

* Preservation of Trees and Vegetation

See Chapter C2 of Penrith Development Control Plan 2014 for specific controls relating to the preservation of trees and vegetation.

* Development Control Plan General Information

Penrith Development Control Plan 2014 which applies to the land, sets out requirements for a range of issues that apply across the Penrith Local Government Area, including:

- Site Planning and Design Principles
- Vegetation Management
- Water Management
- Land Management
- Waste Management
- Landscape Design
- Culture and Heritage
- Public Domain
- Advertising and Signage
- Transport, Access and Parking
- Subdivision
- Noise and Vibration, and
- Infrastructure and Services.

The Development Control Plan also specifies requirements relating to various types of land uses including:

- Rural Land Uses
- Residential Development
- Commercial and Retail Development, and
- Industrial Development

as well as for a number of specific activities, including child care centres; health consulting rooms; educational establishments; parent friendly amenities; places of public worship; vehicle repair stations; cemeteries, crematoria and funeral homes; extractive industries; and telecommunication facilities.

The Development Control Plan also details requirements relating to key precincts within the Penrith Local Government Area, including:

- Caddens
- Claremont Meadows Stage 2
- Cranebrook
- Emu Heights
- Emu Plains
- Erskine Business Park
- Glenmore Park
- Kingswood
- Mulgoa Valley
- Orchard Hills
- Penrith
- Penrith Health and Education Precinct
- Riverlink Precinct
- St Clair,
- St Marys / St Marys North, and
- Sydney Science Park.

Penrith Development Control Plan 2014 may be accessed at https://www.penrithcity.nsw.gov.au/Building-and-Development/Planning-and-Zoning/Planning-Controls/Development-Control-Plans/

**Warwick Winn**
**General Manager**

PER

PENRITH CITY COUNCIL

Civic Centre
601 High Street, Penrith

PO Box 60 Penrith NSW 2751

Telephone: 02 4732 7777
Facsimile: 02 4732 7958

Email: pencit@penrithcity.nsw.gov.au

# PLANNING CERTIFICATE UNDER SECTION 10.7

**Environmental Planning and Assessment Act, 1979**

**Please note:**

Certain amendments to the Environmental Planning and Assessment Act 1979 No 203 (Act) commenced on 1 March 2018.

The Environmental Planning and Assessment (Amendment) Act 2017 No 60 makes structural changes to the Act and, as a consequence, the Act has been renumbered in a decimal format. For example, Section 149 Planning Certificates have become Section 10.7 Certificates. Some of the information in this certificate may refer to the previous version of the Act.

Council is committed to updating all relevant documents in a timely manner. This will include planning instruments, applications, approvals, orders, certificates, forms and other associated documents in both printed and electronic versions. Council is required to implement these changes and regrets any inconvenience caused to the local business, industry and the community.

# Appendix K Bore Hole Logs

# GROUNDWATER WELL BH01

| | | |
|---|---|---|
| **PROJECT NUMBER** 59831 | **DRILLING COMPANY** Total Drilling | **EASTING** N/A |
| **PROJECT NAME** WSCH Environmental and Geot | **DRILLING DATE** 18-Nov-20 | **NORTHING** N/A |
| **CLIENT** | **DRILL RIG** | **ELEVATION** N/A |
| **PERMIT NO.** N/A | **DRILLING METHOD** SFA:Solid Flight Auger | **COORD SYS** GDA94_MGA_zone_54 |
| **ADDRESS** 2-44 O'Connell Street, Kingswood NSW | **TOTAL DEPTH** 8.5 m bgl | **COORD SOURCE** |
| | **DIAMETER** 50 mm | **LOGGED BY** SG/RH |
| **COMPLETION** Roadbox | **CASING** Class 18 PVC - 50mm | **SCREEN INTERVAL** 5.5 - 8.5 m bgl |

**COMMENTS**

| Drilling Method | Water (m bgl) | Well Details | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|---|
| SFA | | | 0 | | Fill | Silty clay, brown, dry/damp, heterogeneous, soft, low plasticity. | SM | BH01 0.2-0.3 | 0.2 | No ACM, odour or staining observed. |
| | | | 0.5 | | Fill | Silty clay, dark brown, dry/damp, heterogeneous, soft, low plasticity, with inclusion of carbonaceous shale fragments. | SM | BH01 0.5-0.6 | 0.2 | No ACM, odour or staining observed. |
| | | | 1 | | CH-MH | Silty clay, light brown, dry/damp, homogeneous, medium plasticity, with inclusion of weathered shale. | SM | BH01 1.0-1.1 | 0.1 | No ACM, odour or staining observed. |
| | | | 1.5 | | | | | | | |
| | | | 2 | | CH | Clay, grey/yellow, dry/damp, mottled, high plasticity, with inclusion of shale fragments. | SM | | | No ACM, odour or staining observed. |
| | | | 2.5 | | | | | | | |
| | | | 3 | | | | | | | |
| | | | 3.5 | | | | | | | |
| | | | 4 | | | | | | | |
| | | | 4.5 | | Shale | Shale. | SM | | | No ACM, odour or staining observed. |
| | | | 5 | | | | | | | |
| | | | 5.5 | | | | | | | |
| | | | 6 | | | | | | | |
| | | | 6.5 | | | | | | | |
| | | | 7 | | | | | | | |
| | | | 7.5 | | | | | | | |
| | | | 8 | | | | | | | |
| | | | 8.5 | | | Termination Depth at: 8.5 m. | | | | |





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# SOIL BOREHOLE BH02

| | | |
|---|---|---|
| **PROJECT NUMBER** 59831 | **DRILLING COMPANY** Total Drilling | **EASTING** N/A |
| **PROJECT NAME** WSCH Environmental and Geot | **DRILLING DATE** 19-Nov-20 | **NORTHING** N/A |
| **CLIENT** | **DRILL RIG** | **COORD SYS** GDA94_MGA_zone_54 |
| **ADDRESS** 2-44 O'Connell Street, Kingswood NSW | **DRILLING METHOD** SFA:Solid Flight Auger | **COORD SOURCE** |
| | **DIAMETER** 50 mm | **LOGGED BY** SG/RH |

**COMMENTS**

| Drilling Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| SFA | | 0 | | Fill | Silty clay, dark brown, damp, heterogeneous, soft, low plasticity, with inclusion of gravel and rootlets. | SM | BH02 0.0-0.1 | 0.4 | No ACM, odour or staining observed. |
| | | | | | | | BH02 0-0.1 | 0.2 | |
| | | | | CH-MH | | SM | BH02 0.3-0.4 | 0.3 | No ACM, odour or staining observed. |
| | | 1 | | | Silty clay, brown, dry/damp, soft, medium plasticity, with inclusion of weathered shale from 1.0 m. | | BH02 0.5-0.6 | 0.1 | |
| | | | | | | | BH02 1.0-1.1 | | |
| | | 2 | | | | | | | |
| | | 3 | | | | | | | |
| | | 4 | | | | | | | |
| | | 5 | | | | | | | |
| | | 6 | | | | | | | |
| | | 7 | | Shale | Shale. | SM | | | No ACM, odour or staining observed. |
| | | 8 | | | | | | | |
| | | 9 | | | | | | | |
| | | 10 | | | | | | | |
| | | 11 | | | | | | | |
| | | 12 | | | | | | | |
| | | 13 | | | | | | | |
| | | 14 | | | | | | | |
| | | | | | Termination Depth at: 14.5 m. | | | | |





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# SOIL BOREHOLE BH03

| | | |
|---|---|---|
| **PROJECT NUMBER** 59831 | **DRILLING COMPANY** Total Drilling | **EASTING** N/A |
| **PROJECT NAME** WSCH Environmental and Geot | **DRILLING DATE** 18-Nov-20 | **NORTHING** N/A |
| **CLIENT** | **DRILL RIG** | **COORD SYS** GDA94_MGA_zone_54 |
| **ADDRESS** 2-44 O'Connell Street, Kingswood NSW | **DRILLING METHOD** SFA:Solid Flight Auger | **COORD SOURCE** |
| | **DIAMETER** 50 mm | **LOGGED BY** SG/RH |

**COMMENTS**

| Drilling Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| SFA | | 0.2<br>0.4<br>0.6<br>0.8<br>1 | | Fill | Silty clay, dark brown, dry, heterogeneous, soft, low plasticity, with inclusion of gravel and rootlets. | D | BH03 0.2-0.3<br>BH03 0.5-0.6 | 0.4<br>0.2 | No ACM, odour or staining observed. |
| | | 1.2<br>1.4 | | CL-ML | Silty clay, light brown, dry, homogeneous, soft, low plasticity, with inclusion of weathered shale. | D | BH03 1.0-1.1 | 0.3 | No ACM, odour or staining observed. |
| | | 1.6<br>1.8<br>2<br>2.2<br>2.4<br>2.6<br>2.8<br>3<br>3.2<br>3.4<br>3.6<br>3.8<br>4<br>4.2<br>4.4<br>4.6<br>4.8<br>5 | | CH-MH | Silty clay, light brown, dry, homogeneous, stiff, medium/high plasticity, with inclusion of weathered shale. | D | BH03 1.5-1.6 | 0.1 | No ACM, odour or staining observed. |
| | | 5.2<br>5.4 | | | Termination Depth at: 5.0 m. | | | | |



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# SOIL BOREHOLE BH04

| | | |
|---|---|---|
| **PROJECT NUMBER** 59831 | **DRILLING COMPANY** Total Drilling | **EASTING** N/A |
| **PROJECT NAME** WSCH Environmental and Geot | **DRILLING DATE** 18-Nov-20 | **NORTHING** N/A |
| **CLIENT** | **DRILL RIG** | **COORD SYS** GDA94_MGA_zone_54 |
| **ADDRESS** 2-44 O'Connell Street, Kingswood NSW | **DRILLING METHOD** SFA:Solid Flight Auger | **COORD SOURCE** |
| | **DIAMETER** 50 mm | **LOGGED BY** SG/RH |

**COMMENTS**

| Drilling Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| SFA | | 0.2 | | Fill | Silty clay, dark brown, dry, heterogeneous, soft, low plasticity, with inclusion of gravel and rootlets. | D | BH04 0.2-0.3 | 0.3 | No ACM, odour or staining observed. |
| | | 0.4 | | | | | | | |
| | | 0.6 | | Fill | Silty clay, dark brown, dry, heterogeneous, soft, low plasticity. | D | BH04 0.5-0.6 | 0.2 | No ACM, odour or staining observed. |
| | | 0.8 | | | | | | | |
| | | 1 | | Fill | Silty clay, light brown, dry, homogeneous, soft, low plasticity. | D | BH04 1.0-1.1 | 0.1 | No ACM, odour or staining observed. |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | CL-ML-SM | Silty sandy clay, light brown, dry, homogeneous, soft, low plasticity, with inclusion of gravel. | D | BH04 1.5-1.6 | 0.1 | No ACM, odour or staining observed. |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | BH04 2.4-2.5 | 0.1 | |
| | | 2.6 | | CH-MH | Silty clay, light brown, dry, homogeneous, soft, low plasticity, with inclusion of small gravel. | D | | | No ACM, odour or staining observed. |
| | | 2.8 | | Shale | Weathered shale, yellow/grey, dry, homogeneous, firm, medium plasticity. | D | BH04 2.7-2.8 | 0.1 | No ACM, odour or staining observed. |
| | | 3 | | | | | | | |
| | | 3.2 | | | | | | | |
| | | 3.4 | | | | | | | |
| | | 3.6 | | | | | | | |
| | | 3.8 | | | | | | | |
| | | 4 | | | | | | | |
| | | 4.2 | | | | | | | |
| | | 4.4 | | | | | | | |
| | | 4.6 | | | | | | | |
| | | 4.8 | | | | | | | |
| | | 5 | | | Termination Depth at: 5.0 m. | | | | |
| | | 5.2 | | | | | | | |
| | | 5.4 | | | | | | | |





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# SOIL BOREHOLE BH05

| | | |
|---|---|---|
| **PROJECT NUMBER** 59831 | **DRILLING COMPANY** Total Drilling | **EASTING** N/A |
| **PROJECT NAME** WSCH Environmental and Geot | **DRILLING DATE** 18-Nov-20 | **NORTHING** N/A |
| **CLIENT** | **DRILL RIG** | **COORD SYS** GDA94_MGA_zone_54 |
| **ADDRESS** 2-44 O'Connell Street, Kingswood NSW | **DRILLING METHOD** SFA:Solid Flight Auger | **COORD SOURCE** |
| | **DIAMETER** 50 mm | **LOGGED BY** SG/RH |

**COMMENTS**

| Drilling Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| SFA | | 0.2 | | Fill | Silty clay, brown, dry/damp, heterogeneous, soft, low/medium plasticity, with inclusion of gravel and rootlets. | SM | BH05 0.0-0.1 | 0.2 | No ACM, odour or staining observed. |
| | | | | | | | BH05 0.2-0.3 | 0.3 | |
| | | 0.4 | | CH-MH | Silty clay, light brown, dry/damp, firm, medium plasticity. | SM | | | No ACM, odour or staining observed. |
| | | 0.6 | | | | | BH05 0.5-0.6 | 0.1 | |
| | | 0.8 | | | | | | | |
| | | 1 | | CH-MH | Silty clay, red/grey, damp, mottled, high plasticity. | SM | BH05 1.0-1.1 | 0.1 | No ACM, odour or staining observed. |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | CL-ML | Silty clay, brown/grey, dry, mottled, low plasticity. | D | | | No ACM, odour or staining observed. |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |
| | | 2.8 | | | | | | | |
| | | 3 | | | | | | | |
| | | 3.2 | | | | | | | |
| | | 3.4 | | | | | | | |
| | | 3.6 | | | | | | | |
| | | 3.8 | | | | | | | |
| | | 4 | | | | | | | |
| | | 4.2 | | | | | | | |
| | | 4.4 | | | | | | | |
| | | 4.6 | | | | | | | |
| | | 4.8 | | | | | | | |
| | | 5 | | | | | | | |
| | | 5.2 | | | | | | | |
| | | 5.4 | | | | | | | |
| | | | | | Termination Depth at: 5.5 m. | | | | |





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# SOIL BOREHOLE BH06

| | | |
|---|---|---|
| **PROJECT NUMBER** 59831 | **DRILLING COMPANY** Total Drilling | **EASTING** N/A |
| **PROJECT NAME** WSCH Environmental and Geot | **DRILLING DATE** 19-Nov-20 | **NORTHING** N/A |
| **CLIENT** | **DRILL RIG** | **COORD SYS** GDA94_MGA_zone_54 |
| **ADDRESS** 2-44 O'Connell Street, Kingswood NSW | **DRILLING METHOD** SFA:Solid Flight Auger | **COORD SOURCE** |
| | **DIAMETER** 50 mm | **LOGGED BY** SG/RH |

**COMMENTS**

| Drilling Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| SFA | | 0.2 | | Fill | Silty clay, dark brown, dry/damp, heterogeneous, soft, low plasticity. | SM | BH06 0.0-0.1 | 0.4 | No ACM, odour or staining observed. |
| | | 0.4 | | | | | BH06 0.3-0.4 | 0.2 | |
| | | 0.6 | | CH-MH | Silty clay, brown, damp, soft, medium plasticity. | SM | BH06 0.5-0.6 | 0.2 | No ACM, odour or staining observed. |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | BH06 1.0-1.1 | 0.2 | |
| | | 1.2 | | CH-MH | Silty clay, grey/yellow, mottled, soft, medium plasticity. | SM | | | No ACM, odour or staining observed. |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | BH06 1.5-1.6 | 0.2 | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |
| | | 2.8 | | | | | | | |
| | | 3 | | | | | | | |
| | | 3.2 | | | | | | | |
| | | 3.4 | | | | | | | |
| | | 3.6 | | | | | | | |
| | | 3.8 | | | | | | | |
| | | 4 | | | | | | | |
| | | 4.2 | | | | | | | |
| | | 4.4 | | | | | | | |
| | | 4.6 | | | | | | | |
| | | 4.8 | | | | | | | |
| | | 5 | | | Termination Depth at: 5.0 m. | | | | |
| | | 5.2 | | | | | | | |
| | | 5.4 | | | | | | | |

# SOIL BOREHOLE BH07

| | | |
|---|---|---|
| **PROJECT NUMBER** 59831 | **DRILLING COMPANY** Total Drilling | **EASTING** N/A |
| **PROJECT NAME** WSCH Environmental and Geot | **DRILLING DATE** 19-Nov-20 | **NORTHING** N/A |
| **CLIENT** | **DRILL RIG** | **COORD SYS** GDA94_MGA_zone_54 |
| **ADDRESS** 2-44 O'Connell Street, Kingswood NSW | **DRILLING METHOD** SFA:Solid Flight Auger | **COORD SOURCE** |
| | **DIAMETER** 50 mm | **LOGGED BY** SG/RH |

**COMMENTS**

| Drilling Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| SFA | | 0.2 | | Fill | Silty clay, dark brown, heterogeneous, medium plasticity. | D | BH07 0.0-0.1 | 0.6 | No ACM, odour or staining observed. |
| | | 0.4 | | | | | BH07 0.3-0.4 | 0.5 | |
| | | 0.6 | | CH-MH | Silty clay, brown, medium plasticity, with inclusion of shale and gravel. | D | BH07 0.5-0.6 | 0.2 | No ACM, odour or staining observed. |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | BH07 1.0-1.1 | 0.4 | |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |
| | | 2.8 | | | | | | | |
| | | 3 | | | | | | | |
| | | 3.2 | | | | | | | |
| | | 3.4 | | | | | | | |
| | | 3.6 | | | | | | | |
| | | 3.8 | | | | | | | |
| | | 4 | | | | | | | |
| | | 4.2 | | | | | | | |
| | | 4.4 | | | | | | | |
| | | 4.6 | | | | | | | |
| | | 4.8 | | | | | | | |
| | | 5 | | | Termination Depth at: 5.0 m. | | | | |
| | | 5.2 | | | | | | | |
| | | 5.4 | | | | | | | |

# SOIL BOREHOLE BH08

| | | |
|---|---|---|
| **PROJECT NUMBER** 59831 | **DRILLING COMPANY** Total Drilling | **EASTING** N/A |
| **PROJECT NAME** WSCH Environmental and Geot | **DRILLING DATE** 18-Nov-20 | **NORTHING** N/A |
| **CLIENT** | **DRILL RIG** | **COORD SYS** GDA94_MGA_zone_54 |
| **ADDRESS** 2-44 O'Connell Street, Kingswood NSW | **DRILLING METHOD** SFA:Solid Flight Auger | **COORD SOURCE** |
| | **DIAMETER** 50 mm | **LOGGED BY** SG/RH |

**COMMENTS**

| Drilling Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| SFA | | 0.2 | | Fill | Silty clay, brown, dry, with inclusion of anthropogenic material and roots. | D | BH08 0.2-0.3 | 0.6 | No ACM, odour or staining observed. |
| | | 0.4 | | Fill | Silty clay, brown, dry, heterogeneous, soft, low plasticity, with inclusion of gravel and rootlets. | D | BH08 0.5-0.6 | 0.4 | No ACM, odour or staining observed. |
| | | 0.6 | | CL-ML | Silty clay, light brown, dry, homogeneous, soft, non/low plasticity, with inclusion of weathered shale. | D | | | No ACM, odour or staining observed. |
| | | 0.8 | | | | | | | |
| | | 1 | | | | | BH08 1.0-1.1 | 0.4 | |
| | | 1.2 | | | Termination Depth at: 1.1 m. | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | | | | | | |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | |
| | | 2.2 | | | | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |
| | | 2.8 | | | | | | | |
| | | 3 | | | | | | | |
| | | 3.2 | | | | | | | |
| | | 3.4 | | | | | | | |
| | | 3.6 | | | | | | | |
| | | 3.8 | | | | | | | |
| | | 4 | | | | | | | |
| | | 4.2 | | | | | | | |
| | | 4.4 | | | | | | | |
| | | 4.6 | | | | | | | |
| | | 4.8 | | | | | | | |
| | | 5 | | | | | | | |
| | | 5.2 | | | | | | | |
| | | 5.4 | | | | | | | |





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# SOIL BOREHOLE BH09

| | | |
|---|---|---|
| **PROJECT NUMBER** 59831 | **DRILLING COMPANY** Total Drilling | **EASTING** N/A |
| **PROJECT NAME** WSCH Environmental and Geot | **DRILLING DATE** 19-Nov-20 | **NORTHING** N/A |
| **CLIENT** | **DRILL RIG** | **COORD SYS** GDA94_MGA_zone_54 |
| **ADDRESS** 2-44 O'Connell Street, Kingswood NSW | **DRILLING METHOD** SFA:Solid Flight Auger | **COORD SOURCE** |
| | **DIAMETER** 50 mm | **LOGGED BY** SG/RH |

**COMMENTS**

| Drilling Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| SFA | | 0.2 | | Fill | Silty clay, dark brown, dry, soft, non plastic, with inclusion of roots and gravel. | D | BH09 0-0.1 | 0.6 | No ACM, odour or staining observed. |
| | | 0.4 | | CL-ML | Silty clay, brown, non plastic. | D | BH09 0.3-0.4 | 0.4 | No ACM, odour or staining observed. |
| | | 0.6 | | | | | BH09 0.5-0.6 | 0.4 | |
| | | 0.8 | | | | | | | |
| | | 1 | | CL-ML | Silty clay, light brown, dry, soft, non plastic. | D | BH09 1.0-1.1 | 0.4 | No ACM, odour or staining observed. |
| | | 1.2 | | | | | | | |
| | | 1.4 | | | | | | | |
| | | 1.6 | | CL-ML | Silty clay, grey, dry, soft, non plastic. | D | BH09 1.5-1.6 | 0.5 | No ACM, odour or staining observed. |
| | | 1.8 | | | | | | | |
| | | 2 | | | | | | | Refusal. |
| | | 2.2 | | | Termination Depth at: 2.0 m. | | | | |
| | | 2.4 | | | | | | | |
| | | 2.6 | | | | | | | |
| | | 2.8 | | | | | | | |
| | | 3 | | | | | | | |
| | | 3.2 | | | | | | | |
| | | 3.4 | | | | | | | |
| | | 3.6 | | | | | | | |
| | | 3.8 | | | | | | | |
| | | 4 | | | | | | | |
| | | 4.2 | | | | | | | |
| | | 4.4 | | | | | | | |
| | | 4.6 | | | | | | | |
| | | 4.8 | | | | | | | |
| | | 5 | | | | | | | |
| | | 5.2 | | | | | | | |
| | | 5.4 | | | | | | | |



produced by ESlog.ESdat.net on 08 Dec 2020

# SOIL BOREHOLE BH10

| | | |
|---|---|---|
| **PROJECT NUMBER** 59831 | **DRILLING COMPANY** Total Drilling | **EASTING** N/A |
| **PROJECT NAME** WSCH Environmental and Geot | **DRILLING DATE** 19-Nov-20 | **NORTHING** N/A |
| **CLIENT** | **DRILL RIG** | **COORD SYS** GDA94_MGA_zone_54 |
| **ADDRESS** 2-44 O'Connell Street, Kingswood NSW | **DRILLING METHOD** SFA:Solid Flight Auger | **COORD SOURCE** |
| | **DIAMETER** 50 mm | **LOGGED BY** SG/RH |

**COMMENTS**

| Drilling Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| SFA | | 0.2<br>0.4<br>0.6 | | Fill | Silty clay, dark brown, dry/damp, heterogeneous, soft, low plasticity. | SM | BH10 0.2-0.3<br>BH10 0.5-0.6 | 0.8<br>0.4 | No ACM, odour or staining observed. |
| | | 0.8<br>1<br>1.2<br>1.4 | | CL-ML | Silty clay, red/grey, dry, soft/firm, low/medium plasticity. | D | BH10 1.0-1.1 | 0.5 | No ACM, odour or staining observed. |
| | | 1.6<br>1.8<br>2<br>2.2<br>2.4<br>2.6<br>2.8<br>3<br>3.2<br>3.4<br>3.6<br>3.8<br>4<br>4.2<br>4.4<br>4.6<br>4.8<br>5 | | CL-ML | Silty clay, grey/brown, dry, mottled, firm, medium plasticity. | D | BH10 1.5-1.6 | 0.5 | No ACM, odour or staining observed. |
| | | 5.2<br>5.4 | | | Termination Depth at: 5.0 m. | | | | |

# SOIL BOREHOLE HA01

| | | |
|---|---|---|
| **PROJECT NUMBER** 59831 | **DRILLING COMPANY** | **EASTING** N/A |
| **PROJECT NAME** WSCH Environmental and Geot | **DRILLING DATE** 17-Nov-20 | **NORTHING** N/A |
| **CLIENT** | **DRILL RIG** | **COORD SYS** GDA94_MGA_zone_54 |
| **ADDRESS** 2-44 O'Connell Street, Kingswood NSW | **DRILLING METHOD** Hand Auger:Hand Auger | **COORD SOURCE** |
| | **DIAMETER** 50 mm | **LOGGED BY** MN |

**COMMENTS**

| Drilling Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| HA | | 0.05<br>0.1<br>0.15<br>0.2 | | Fill | Silty clay, dark brown, dry, heterogeneous, firm, low plasticity, with inclusion of rootlets. | D | HA01 0.0-0.1 | 1.5 | No ACM, odour or staining observed. |
| | | 0.25<br>0.3 | | Fill | Silty clay, light brown, dry, heterogeneous, firm, low plasticity, with inclusion of gravel. | D | HA01 0.2-0.3 | 1.4 | No ACM, odour or staining observed. |
| | | 0.35<br>0.4<br>0.45<br>0.5<br>0.55<br>0.6<br>0.65<br>0.7<br>0.75<br>0.8<br>0.85<br>0.9<br>0.95<br>1 | | Fill | Sandy silty clay, brown/red, dry, stiff, high plasticity, with inclusion of ash. | D | HA01 0.5-0.6<br>HA01 0.9-1.0 | 0.8<br>0.5 | No ACM, odour or staining observed. |
| | | 1.05 | | | Termination Depth at: 1.0 m. | | | | |

# SOIL BOREHOLE HA02

| | | |
|---|---|---|
| **PROJECT NUMBER** 59831 | **DRILLING COMPANY** | **EASTING** N/A |
| **PROJECT NAME** WSCH Environmental and Geot | **DRILLING DATE** 17-Nov-20 | **NORTHING** N/A |
| **CLIENT** | **DRILL RIG** | **COORD SYS** GDA94_MGA_zone_54 |
| **ADDRESS** 2-44 O'Connell Street, Kingswood NSW | **DRILLING METHOD** Hand Auger:Hand Auger | **COORD SOURCE** |
| | **DIAMETER** 50 mm | **LOGGED BY** MN |

**COMMENTS**

| Drilling Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| HA | | 0.05<br>0.1<br>0.15<br>0.2<br>0.25<br>0.3 | | Fill | Sandy silt, brown, dry, heterogeneous, loose, low plasticity, with inclusion of rootlets and traces of gravel. | D | HA02 0.0-0.1<br><br><br>HA02 0.2-0.3 | 1.1<br><br><br>22.9 | No ACM, odour or staining observed.<br><br><br>Refusal on concrete. |
| | | 0.35<br>0.4<br>0.45<br>0.5<br>0.55<br>0.6<br>0.65<br>0.7<br>0.75<br>0.8<br>0.85<br>0.9<br>0.95<br>1<br>1.05 | | | Termination Depth at: 0.3 m. | | | | |

# SOIL BOREHOLE HA03

| | | |
|---|---|---|
| **PROJECT NUMBER** 59831 | **DRILLING COMPANY** | **EASTING** N/A |
| **PROJECT NAME** WSCH Environmental and Geot | **DRILLING DATE** 17-Nov-20 | **NORTHING** N/A |
| **CLIENT** | **DRILL RIG** | **COORD SYS** GDA94_MGA_zone_54 |
| **ADDRESS** 2-44 O'Connell Street, Kingswood NSW | **DRILLING METHOD** Hand Auger:Hand Auger | **COORD SOURCE** |
| | **DIAMETER** 50 mm | **LOGGED BY** MN |

**COMMENTS**

| Drilling Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| HA | | 0.05<br>0.1<br>0.15<br>0.2 | | Fill | Clayey sandy silt, brown, dry, heterogeneous, loose, with inclusion of rootlets and plastic bag. | D | HA03 0-0.1 | 1.8 | No ACM, odour or staining observed. |
| | | 0.25<br>0.3<br>0.35<br>0.4<br>0.45<br>0.5<br>0.55<br>0.6<br>0.65<br>0.7<br>0.75<br>0.8 | | Fill | Silty clay, brown, dry, heterogeneous, soft, low plasticity, with inclusion of ash and plastic bag pieces. | D | HA03 0.2-0.3<br>HA03 0.5-0.6<br>HA03 0.7-0.8 | 1.2<br>1.3<br>1 | No ACM, odour or staining observed. |
| | | 0.85 | | Fill | Silty clay, grey/brown, dry, heterogeneous, soft, low plasticity. | D | | | No ACM, odour or staining observed. |
| | | 0.9<br>0.95<br>1<br>1.05 | | | Termination Depth at: 0.9 m. | | | | Refusal. |

# SOIL BOREHOLE HA04

| | | |
|---|---|---|
| **PROJECT NUMBER** 59831 | **DRILLING COMPANY** | **EASTING** N/A |
| **PROJECT NAME** WSCH Environmental and Geot | **DRILLING DATE** 17-Nov-20 | **NORTHING** N/A |
| **CLIENT** | **DRILL RIG** | **COORD SYS** GDA94_MGA_zone_54 |
| **ADDRESS** 2-44 O'Connell Street, Kingswood NSW | **DRILLING METHOD** Hand Auger:Hand Auger | **COORD SOURCE** |
| | **DIAMETER** 50 mm | **LOGGED BY** MN |

**COMMENTS**

| Drilling Method | Water (m bgl) | Depth (m bgl) | Graphic Log | Lithological Class | Lithological Description | Moisture | Samples | PID | Additional Observations |
|---|---|---|---|---|---|---|---|---|---|
| HA | | 0.05<br>0.1<br>0.15<br>0.2<br>0.25<br>0.3 | | Fill | Silty clay, brown, dry, heterogeneous, soft, low plasticity, with inclusion of rootlets and gravel. | D | HA04 0.0-0.1<br>HA04 0.2-0.3 | 1.1<br>0.9 | No ACM, odour or staining observed. |
| | | 0.35<br>0.4<br>0.45<br>0.5<br>0.55<br>0.6<br>0.65<br>0.7 | | Fill | Silty clay, beige, dry, heterogeneous, stiff, high plasticity, with inclusion of rootlets and gravel. | D | HA04 0.5-0.6 | 1.3 | No ACM, odour or staining observed. |
| | | 0.75<br>0.8<br>0.85<br>0.9<br>0.95<br>1 | | Fill | Sandy silty clay, brown, dry, heterogeneous, stiff, high plasticity, with inclusion of gravel. | D | HA04 0.9-1.0 | 0.7 | No ACM, odour or staining observed. |
| | | 1.05 | | | Termination Depth at: 1.0 m. | | | | |

## Appendix L Calibration and Decontamination Sheets

## Oil / Water Interface Meter

airmet
Air-Met Scientific Pty Ltd
1300 137 067

**Instrument** **Interface Meter (30M)**
**Serial No.** **348888**

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

## *Certificate of Calibration*

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

***Calibrated by:*** **Chris Edwards**

***Calibration date:*** **24/11/2020**

***Next calibration due:*** **23/01/2021**

# Field Equipment Calibration and Decontamination

| | |
|---|---|
| **PROJECT NAME:** Kingswood | **PROJECT NO:** 59831 |
| **FIELDWORK DATES:** 17/11/20 | **SAMPLERS:** MN |
| **TYPE OF INVESTIGATION:** HA | **PROJECT MANAGER:** SM |

**CALIBRATION SUMMARY**

| |
|---|
| **EQUIPMENT:** PID |
| **CALIBRATION STANDARD:** 100 ppm isobutylene |

| DATE | TIME | READING (ppm) | COMMENTS |
|---|---|---|---|
| 17/11/20 | 8:45 | 0 | Zero Calibration |
| | 8:46 | 100.1 | 100 ppm isobutylene Calibration |
| | 8:47 | 100.7 | bump test |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**DECONTAMINATION SUMMARY**

| **EQUIPMENT:** Hand Auger | | | |
|---|---|---|---|
| 1 Was the equipment decontaminated appropriately prior to sampling at each location? | (Y) | N | NA |
| 2 Was excess soil removed by scraping, brushing or wiping with disposable towels? | (Y) | N | NA |
| 3 Was the equipment contaminated with grease, tar or similar material? | Y | (N) | NA |
| If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane? | Y | N | NA |
| 4 Was phosphate-free detergent used to wash the equipment? | (Y) | N | NA |
| 5 Was the equipment rinsed with clean water? | (Y) | N | NA |
| 6 Was the equipment then rinsed with deionised water? | (Y) | N | NA |
| 7 Were all sample containers cleaned and acid or solvent washed prior to sample collection? | Y | N | (NA) |
| **WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS** | | | |

# Field Equipment Calibration and Decontamination

| | |
|---|---|
| **PROJECT NAME:** TAFE Kingswood PSI | **PROJECT NO:** 59831 |
| **FIELDWORK DATES:** 18-19/11/20 | **SAMPLERS:** SG / RH |
| **TYPE OF INVESTIGATION:** PSI | **PROJECT MANAGER:** SG |

**CALIBRATION SUMMARY**

| |
|---|
| **EQUIPMENT:** PID |
| **CALIBRATION STANDARD:** |

| DATE | TIME | READING (ppm) | COMMENTS |
|---|---|---|---|
| | | | |
| 18/11/20 | 8:30 | 0 | zero cal |
| | 8:32 | 100.4 | 100 ppm isobutylene |
| | 8:34 | 100.2 | bump test. |
| | | | |
| | | | |
| 19/11/20 | 9:00 | 0 | zero cal |
| | 9:02 | 100.1 | 100 ppm isobutylene |
| | 9:04 | 100.2 | bump test. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**DECONTAMINATION SUMMARY**

| | |
|---|---|
| **EQUIPMENT:** NA | |

| | | | | |
|---|---|---|---|---|
| 1 | Was the equipment decontaminated appropriately prior to sampling at each location? | Y | N | (NA) |
| 2 | Was excess soil removed by scraping, brushing or wiping with disposable towels? | Y | N | (NA) |
| 3 | Was the equipment contaminated with grease, tar or similar material? | Y | (N) | NA |
| | If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane? | Y | N | (NA) |
| 4 | Was phosphate-free detergent used to wash the equipment? | Y | N | (NA) |
| 5 | Was the equipment rinsed with clean water? | Y | N | (NA) |
| 6 | Was the equipment then rinsed with deionised water? | Y | N | (NA) |
| 7 | Were all sample containers cleaned and acid or solvent washed prior to sample collection? | Y | N | (NA) |

**WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS**

New pair of nitrile gloves used to collect each sample.

Multi Parameter Water Meter

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Instrument **YSI Quatro Pro Plus**
Serial No. **14D101796**

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

## *Certificate of Calibration*

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

| Sensor | Serial no | Standard Solutions | Certified | Solution Bottle Number | Instrument Reading |
|---|---|---|---|---|---|
| 1. pH 10.00 | | pH 10.00 | | 355386 | pH 9.62 |
| 2. pH 7.00 | | pH 7.00 | | 355072 | pH 6.93 |
| 3. pH 4.00 | | pH 4.00 | | 351412 | pH 4.25 |
| 4. mV | | 229.6mV | | 357172/357173 | 229.5mV |
| 5. EC | | 2.76mS | | 350510 | 2.75mS |
| 6. D.O | | 0.00ppm | | 10959 | 0.00ppm |
| 7. Temp | | 22.0°C | | MultiTherm | 22.0°C |

*Calibrated by:* **Kylie Rawlings**

*Calibration date:* **24/11/2020**

*Next calibration due:* **23/05/2021**

# Appendix M QA/QC Summary

**INSERT QAQC TABLE NAME**
Project Number: 59831
Project Name: WSCH Environmental and Geotech Services

Contents
Field Duplicates

soil Field Duplicates (soil)
Filter: ALL

| Filter | Chem_Grou | ChemName | Units | EQL | SDG | 758440 | 758440 | RPD | 758440 | 256393 | RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Field ID | BH04 0.2-0.3 | QA181120 | | BH04 0.2-0.3 | QC18/11/20 | |
| | | | | | Sampled Date/Tim | 18/11/2020 | 18/11/2020 | | 18/11/2020 | 18/11/2020 | |
| Metals & M | Metals & M | Arsenic | mg/kg | 2 | | 9 | 10 | 11 | 9 | 10 | 10 |
| Metals & M | | Cadmium | mg/kg | 0.4 | | <0.4 | <0.4 | 0 | <0.4 | <0.4 | 0 |
| Metals & M | | Chromium (III+VI) | mg/kg | 5 | | 21 | 24 | 13 | 21 | 18 | 15 |
| Metals & M | | Copper | mg/kg | 5 | | 22 | 28 | 24 | 22 | 23 | 4 |
| Metals & M | | Lead | mg/kg | 5 | | 14 | 16 | 13 | 14 | 15 | 7 |
| Metals & M | | Mercury | mg/kg | 0.1 | | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| Metals & M | | Nickel | mg/kg | 5 | | 21 | 20 | 5 | 21 | 15 | 33 |
| Metals & M | | Zinc | mg/kg | 5 | | 36 | 46 | 24 | 36 | 31 | 14 |
| TPHs (NEPC 1999) | | | | | | | | | | | |
| TRHs (NEPC | TRHs (NEPC | C6-C10 | mg/kg | 20 | | <20 | <20 | 0 | <20 | <20 | 0 |
| TRHs (NEPC | | C10-C16 | mg/kg | 50 | | <50 | <50 | 0 | <50 | <50 | 0 |
| TRHs (NEPC | | C16-C34 | mg/kg | 100 | | <100 | <100 | 0 | <100 | <100 | 0 |
| TRHs (NEPC | | C34-C40 | mg/kg | 100 | | <100 | 130 | 26 | <100 | <100 | 0 |
| TRHs (NEPC | | C10-C40 (Sum of total) | mg/kg | 100 | | <100 | 130 | 26 | <100 | <100 | 0 |
| TRHs (NEPC | | F1 (C6-C10 minus BTEX) | mg/kg | 20 | | <20 | <20 | 0 | <20 | <20 | 0 |
| TRHs (NEPC | | F2 (C10-C16 less Naphthalene) | mg/kg | 50 | | <50 | <50 | 0 | <50 | <50 | 0 |
| TRHs (NEPC 2013) | | | | | | | | | | | |
| BTEXN | BTEXN | Benzene | mg/kg | 0.1 | | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| BTEXN | | Toluene | mg/kg | 0.1 | | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| BTEXN | | Ethylbenzene | mg/kg | 0.1 | | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| BTEXN | | Xylene (o) | mg/kg | 0.1 | | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| BTEXN | | Xylene (m & p) | mg/kg | 0.2 | | <0.2 | <0.2 | 0 | <0.2 | <0.2 | 0 |
| BTEXN | | Xylene Total | mg/kg | 0.3 | | <0.3 | <0.3 | 0 | <0.3 | <0.3 | 0 |
| BTEXN | | Naphthalene - MAH | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| BTEXN | | | | | | | | | | | |
| PAH | PAH | Acenaphthene | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Acenaphthylene | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Anthracene | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Benz(a)anthracene | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Benzo(a) pyrene | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Benzo(a)pyrene TEQ (LOR) | mg/kg | 0.5 | | 1.2 | 1.2 | 0 | 1.2 | 1.2 | 0 |
| PAH | | Benzo(a)pyrene TEQ calc (Half) | mg/kg | 0.5 | | 0.6 | 0.6 | 0 | 0.6 | 0.6 | 0 |
| PAH | | Benzo(a)pyrene TEQ calc (Zero | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Benzo(b+j)fluoranthene | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Benzo(g,h,i)perylene | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Benzo(k)fluoranthene | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Chrysene | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Dibenz(a,h)anthracene | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Fluoranthene | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Fluorene | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Indeno(1,2,3-c,d)pyrene | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Naphthalene - PAH | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Phenanthrene | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | Pyrene | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | PAHs (Sum of total) | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| PAH | | | | | | | | | | | |
| Organochlo | Organochlo | 4,4-DDE | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | a-BHC | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | b-BHC | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | d-BHC | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | g-BHC (Lindane) | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | Aldrin | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | Dieldrin | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | Aldrin + Dieldrin | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | Chlordane | mg/kg | 0.1 | | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| Organochlo | | DDT | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | DDD | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | DDT+DDE+DDD | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | Endosulfan I | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | Endosulfan II | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | Endosulfan sulphate | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | Endrin | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | Endrin aldehyde | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | Endrin ketone | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | Heptachlor | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | Heptachlor Epoxide | mg/kg | 0.05 | | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 |
| Organochlo | | Methoxychlor | mg/kg | 0.2 | | <0.2 | <0.2 | 0 | <0.2 | <0.2 | 0 |
| Organochlo | | Toxaphene | mg/kg | 0.1 | | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| Organochlorine Pesticides | | | | | | | | | | | |
| Polychlorina | Polychlorina | Arochlor 1016 | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |
| Polychlorina | | Arochlor 1221 | mg/kg | 0.1 | | <0.1 | <0.1 | 0 | <0.1 | <0.1 | 0 |
| Polychlorina | | Arochlor 1232 | mg/kg | 0.5 | | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 |

**INSERT QAQC TABLE NAME**

Project Number: 59831

Project Name: WSCH Environmental and Geotech Services

soil Field Duplicates (soil)

Filter: ALL

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SDG** | | | | | 758440 | 758440 | | 758440 | 256393 | | |
| **Field ID** | | | | | BH04 0.2-0.3 | QA181120 | **RPD** | BH04 0.2-0.3 | QC18/11/20 | **RPD** | |
| **Sampled Date/Tim** | | | | | 18/11/2020 | 18/11/2020 | | 18/11/2020 | 18/11/2020 | | |
| Polychlorina | | Arochlor 1242 | mg/kg | 0.5 | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | |
| Polychlorina | | Arochlor 1248 | mg/kg | 0.5 | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | |
| Polychlorina | | Arochlor 1254 | mg/kg | 0.5 | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | |
| Polychlorina | | Arochlor 1260 | mg/kg | 0.5 | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | |
| Polychlorina | | PCBs (Sum of total) | mg/kg | 0.5 | <0.5 | <0.5 | 0 | <0.5 | <0.5 | 0 | |
| Polychlorinated Biphenyls | | | | | | | | | | | |
| Chlorinated | Chlorinated | Hexachlorobenzene | mg/kg | 0.05 | <0.05 | <0.05 | 0 | <0.05 | <0.05 | 0 | |
| Chlorinated Benzenes | | | | | | | | | | | |
| EPA VIC - IW | EPA VIC - IW | Organochlorine Pesticides EPA | mg/kg | 0.1 | <0.2 | <0.2 | 0 | <0.2 | <0.2 | 0 | |
| EPA VIC - IW | | Other Organochlorine Pesticide | mg/kg | 0.1 | <0.2 | <0.2 | 0 | <0.2 | <0.2 | 0 | |
| Other | Other | Moisture Content (dried @ 103 | % | 1 | **33** | **15** | **75** | **33** | **15** | **75** | |

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

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 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 tl

# Appendix N Laboratory Certificates and COC Documentation

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

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

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

**Attention:** **Sahani Gunatunge**

**Report** **757514-S**
Project name KINGSWOOD
Project ID 59831
Received Date Nov 17, 2020

| **Client Sample ID** | | | **HA01 0.5-0.6** | **HA02 0.2-0.3** | **HA03 0-0.1** | **HA04 0.5-0.6** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S20-No30190** | **S20-No30193** | **S20-No30194** | **S20-No30200** |
| **Date Sampled** | | | **Nov 17, 2020** | **Nov 17, 2020** | **Nov 17, 2020** | **Nov 17, 2020** |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | | |
| TRH C6-C9 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C10-C14 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C15-C28 | 50 | mg/kg | < 50 | 150 | < 50 | < 50 |
| TRH C29-C36 | 50 | mg/kg | < 50 | 170 | < 50 | < 50 |
| TRH C10-C36 (Total) | 50 | mg/kg | < 50 | 320 | < 50 | < 50 |
| **BTEX** | | | | | | |
| Benzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Toluene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Ethylbenzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| m&p-Xylenes | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| o-Xylene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Xylenes - Total* | 0.3 | mg/kg | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| 4-Bromofluorobenzene (surr.) | 1 | % | 92 | 119 | 88 | 105 |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | |
| Naphthalene[N02] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| TRH C6-C10 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH >C10-C16 | 50 | mg/kg | < 50 | 54 | < 50 | < 50 |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | < 50 | 54 | < 50 | < 50 |
| TRH >C16-C34 | 100 | mg/kg | < 100 | 250 | < 100 | < 100 |
| TRH >C34-C40 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C10-C40 (total)* | 100 | mg/kg | < 100 | 304 | < 100 | < 100 |
| **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 | | | HA01 0.5-0.6 | HA02 0.2-0.3 | HA03 0-0.1 | HA04 0.5-0.6 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S20-No30190 | S20-No30193 | S20-No30194 | S20-No30200 |
| Date Sampled | | | Nov 17, 2020 | Nov 17, 2020 | Nov 17, 2020 | Nov 17, 2020 |
| 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 | % | 80 | 85 | 77 | 90 |
| p-Terphenyl-d14 (surr.) | 1 | % | 87 | 91 | 97 | 84 |
| **Organochlorine Pesticides** | | | | | | |
| Chlordanes - Total | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 4.4'-DDD | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4.4'-DDE | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4.4'-DDT | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| a-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Aldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| b-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| d-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dieldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan I | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan II | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan sulphate | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endrin aldehyde | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endrin ketone | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| g-BHC (Lindane) | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Heptachlor | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Heptachlor epoxide | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Hexachlorobenzene | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Methoxychlor | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Toxaphene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Dibutylchlorendate (surr.) | 1 | % | 96 | 109 | 99 | 86 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 87 | 88 | 97 | 90 |
| **Polychlorinated Biphenyls** | | | | | | |
| Aroclor-1016 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1221 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Aroclor-1232 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1242 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1248 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1254 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1260 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total PCB* | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Dibutylchlorendate (surr.) | 1 | % | 96 | 109 | 99 | 86 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 87 | 88 | 97 | 90 |

| Client Sample ID | | | HA01 0.5-0.6 | HA02 0.2-0.3 | HA03 0-0.1 | HA04 0.5-0.6 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S20-No30190** | **S20-No30193** | **S20-No30194** | **S20-No30200** |
| **Date Sampled** | | | **Nov 17, 2020** | **Nov 17, 2020** | **Nov 17, 2020** | **Nov 17, 2020** |
| Test/Reference | LOR | Unit | | | | |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 8.1 | 5.7 | 5.7 | 5.6 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 32 | 26 | 24 | 22 |
| Copper | 5 | mg/kg | 31 | 30 | 25 | 36 |
| Lead | 5 | mg/kg | 17 | 24 | 20 | 16 |
| Mercury | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Nickel | 5 | mg/kg | 41 | 24 | 25 | 21 |
| Zinc | 5 | mg/kg | 63 | 85 | 63 | 56 |
| | | | | | | |
| % Moisture | 1 | % | 17 | 11 | 12 | 15 |

## Sample History

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

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

| Description | Testing Site | Extracted | Holding Time |
|---|---|---|---|
| JBS&G Suite 2 | | | |
| Total Recoverable Hydrocarbons - 1999 NEPM Fractions | Sydney | Nov 21, 2020 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| BTEX | Sydney | Nov 21, 2020 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Sydney | Nov 21, 2020 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Sydney | Nov 21, 2020 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Polycyclic Aromatic Hydrocarbons | Sydney | Nov 21, 2020 | 14 Days |
| - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water | | | |
| Organochlorine Pesticides | Sydney | Nov 21, 2020 | 14 Days |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Polychlorinated Biphenyls | Sydney | Nov 21, 2020 | 28 Days |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Metals M8 | Sydney | Nov 21, 2020 | 180 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |
| % Moisture | Sydney | Nov 18, 2020 | 14 Days |
| - Method: LTM-GEN-7080 Moisture | | | |

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Australia**

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Perth**
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

**New Zealand**

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** KINGSWOOD
**Project ID:** 59831

**Order No.:**
**Report #:** 757514
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 17, 2020 5:20 PM
**Due:** Nov 24, 2020
**Priority:** 5 Day
**Contact Name:** Sahani Gunatunge

**Eurofins Analytical Services Manager : Ursula Long**

| Sample Detail | | | | | | Asbestos - WA guidelines | HOLD | BTEX | Moisture Set | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | |
| 1 | HA01 0-0.1 | Nov 17, 2020 | | Soil | S20-No30188 | | X | | | | |
| 2 | HA01 0.2-0.3 | Nov 17, 2020 | | Soil | S20-No30189 | | X | | | | |
| 3 | HA01 0.5-0.6 | Nov 17, 2020 | | Soil | S20-No30190 | X | | | X | X | |
| 4 | HA01 0.9-1.0 | Nov 17, 2020 | | Soil | S20-No30191 | | X | | | | |
| 5 | HA02 0-0.1 | Nov 17, 2020 | | Soil | S20-No30192 | | X | | | | |
| 6 | HA02 0.2-0.3 | Nov 17, 2020 | | Soil | S20-No30193 | X | | | X | X | |
| 7 | HA03 0-0.1 | Nov 17, 2020 | | Soil | S20-No30194 | X | | | X | X | |
| 8 | HA03 0.2-0.3 | Nov 17, 2020 | | Soil | S20-No30195 | | X | | | | |
| 9 | HA03 0.5-0.6 | Nov 17, 2020 | | Soil | S20-No30196 | | X | | | | |

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Australia**

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Perth**
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

**New Zealand**

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** KINGSWOOD
**Project ID:** 59831

**Order No.:**
**Report #:** 757514
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 17, 2020 5:20 PM
**Due:** Nov 24, 2020
**Priority:** 5 Day
**Contact Name:** Sahani Gunatunge

**Eurofins Analytical Services Manager : Ursula Long**

| Sample Detail | | | | | | Asbestos - WA guidelines | HOLD | BTEX | Moisture Set | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | |
| 10 | HA03 0.7-0.8 | Nov 17, 2020 | | Soil | S20-No30197 | | X | | | | |
| 11 | HA04 0-0.1 | Nov 17, 2020 | | Soil | S20-No30198 | | X | | | | |
| 12 | HA04 0.2-0.3 | Nov 17, 2020 | | Soil | S20-No30199 | | X | | | | |
| 13 | HA04 0.5-0.6 | Nov 17, 2020 | | Soil | S20-No30200 | X | | | X | X | |
| 14 | HA04 0.9-1.0 | Nov 17, 2020 | | Soil | S20-No30201 | | X | | | | |
| 15 | QC01 | Nov 17, 2020 | | Soil | S20-No30202 | | X | | | | |
| 16 | QA01 | Nov 17, 2020 | | Soil | S20-No30203 | | X | | | | |
| 17 | RINSATE | Nov 17, 2020 | | Water | S20-No30204 | | | | | X | |
| 18 | TS | Nov 17, 2020 | | Water | S20-No30205 | | | | | | X |
| 19 | TB | Nov 17, 2020 | | Water | S20-No30206 | | | X | | | |
| **Test Counts** | | | | | | 4 | 12 | 1 | 4 | 5 | 1 |

## Internal Quality Control Review and Glossary

### General

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

### Holding Times

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

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

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

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

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

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

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

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

### Terms

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

### QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

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

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

### QC Data General Comments

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

**Quality Control Results**

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | | | |
| TRH C6-C9 | mg/kg | < 20 | | | 20 | Pass | |
| TRH C10-C14 | mg/kg | < 20 | | | 20 | Pass | |
| TRH C15-C28 | mg/kg | < 50 | | | 50 | Pass | |
| TRH C29-C36 | mg/kg | < 50 | | | 50 | Pass | |
| **Method Blank** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Toluene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Ethylbenzene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| m&p-Xylenes | mg/kg | < 0.2 | | | 0.2 | Pass | |
| o-Xylene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Xylenes - Total* | mg/kg | < 0.3 | | | 0.3 | Pass | |
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | | |
| Naphthalene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| TRH C6-C10 | mg/kg | < 20 | | | 20 | Pass | |
| TRH >C10-C16 | mg/kg | < 50 | | | 50 | Pass | |
| TRH >C16-C34 | mg/kg | < 100 | | | 100 | Pass | |
| TRH >C34-C40 | mg/kg | < 100 | | | 100 | Pass | |
| **Method Blank** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Acenaphthylene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Anthracene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benz(a)anthracene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(a)pyrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(b&j)fluoranthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(g.h.i)perylene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(k)fluoranthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Chrysene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Dibenz(a.h)anthracene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Fluoranthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Fluorene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Indeno(1.2.3-cd)pyrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Naphthalene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Phenanthrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Pyrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| **Method Blank** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | mg/kg | < 0.1 | | | 0.1 | Pass | |
| 4.4'-DDD | mg/kg | < 0.05 | | | 0.05 | Pass | |
| 4.4'-DDE | mg/kg | < 0.05 | | | 0.05 | Pass | |
| 4.4'-DDT | mg/kg | < 0.05 | | | 0.05 | Pass | |
| a-BHC | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Aldrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| b-BHC | mg/kg | < 0.05 | | | 0.05 | Pass | |
| d-BHC | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Dieldrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan I | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan II | mg/kg | < 0.05 | | | 0.05 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| Endosulfan sulphate | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin aldehyde | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin ketone | mg/kg | < 0.05 | | | 0.05 | Pass | |
| g-BHC (Lindane) | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Heptachlor | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Heptachlor epoxide | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Hexachlorobenzene | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Methoxychlor | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Toxaphene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| **Method Blank** | | | | | | | |
| **Polychlorinated Biphenyls** | | | | | | | |
| Aroclor-1016 | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Aroclor-1221 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1232 | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Aroclor-1242 | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Aroclor-1248 | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Aroclor-1254 | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Aroclor-1260 | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Total PCB* | mg/kg | < 0.5 | | | 0.5 | Pass | |
| **Method Blank** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic | mg/kg | < 2 | | | 2 | Pass | |
| Cadmium | mg/kg | < 0.4 | | | 0.4 | Pass | |
| Chromium | mg/kg | < 5 | | | 5 | Pass | |
| Copper | mg/kg | < 5 | | | 5 | Pass | |
| Lead | mg/kg | < 5 | | | 5 | Pass | |
| Mercury | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Nickel | mg/kg | < 5 | | | 5 | Pass | |
| Zinc | mg/kg | < 5 | | | 5 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | | | |
| TRH C6-C9 | % | 94 | | | 70-130 | Pass | |
| TRH C10-C14 | % | 125 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | % | 101 | | | 70-130 | Pass | |
| Toluene | % | 96 | | | 70-130 | Pass | |
| Ethylbenzene | % | 104 | | | 70-130 | Pass | |
| m&p-Xylenes | % | 106 | | | 70-130 | Pass | |
| o-Xylene | % | 107 | | | 70-130 | Pass | |
| Xylenes - Total* | % | 107 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | | |
| Naphthalene | % | 117 | | | 70-130 | Pass | |
| TRH C6-C10 | % | 95 | | | 70-130 | Pass | |
| TRH >C10-C16 | % | 124 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | % | 76 | | | 70-130 | Pass | |
| Acenaphthylene | % | 77 | | | 70-130 | Pass | |
| Anthracene | % | 82 | | | 70-130 | Pass | |
| Benz(a)anthracene | % | 75 | | | 70-130 | Pass | |
| Benzo(a)pyrene | % | 74 | | | 70-130 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| Benzo(b&j)fluoranthene | % | 72 | | | 70-130 | Pass | |
| Benzo(g.h.i)perylene | % | 79 | | | 70-130 | Pass | |
| Benzo(k)fluoranthene | % | 81 | | | 70-130 | Pass | |
| Chrysene | % | 74 | | | 70-130 | Pass | |
| Dibenz(a.h)anthracene | % | 80 | | | 70-130 | Pass | |
| Fluoranthene | % | 73 | | | 70-130 | Pass | |
| Fluorene | % | 82 | | | 70-130 | Pass | |
| Indeno(1.2.3-cd)pyrene | % | 80 | | | 70-130 | Pass | |
| Naphthalene | % | 82 | | | 70-130 | Pass | |
| Phenanthrene | % | 80 | | | 70-130 | Pass | |
| Pyrene | % | 76 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | % | 71 | | | 70-130 | Pass | |
| 4.4'-DDD | % | 81 | | | 70-130 | Pass | |
| 4.4'-DDE | % | 74 | | | 70-130 | Pass | |
| 4.4'-DDT | % | 87 | | | 70-130 | Pass | |
| a-BHC | % | 76 | | | 70-130 | Pass | |
| Aldrin | % | 71 | | | 70-130 | Pass | |
| b-BHC | % | 75 | | | 70-130 | Pass | |
| d-BHC | % | 72 | | | 70-130 | Pass | |
| Dieldrin | % | 81 | | | 70-130 | Pass | |
| Endosulfan I | % | 77 | | | 70-130 | Pass | |
| Endosulfan II | % | 83 | | | 70-130 | Pass | |
| Endosulfan sulphate | % | 79 | | | 70-130 | Pass | |
| Endrin | % | 75 | | | 70-130 | Pass | |
| Endrin aldehyde | % | 91 | | | 70-130 | Pass | |
| Endrin ketone | % | 84 | | | 70-130 | Pass | |
| g-BHC (Lindane) | % | 77 | | | 70-130 | Pass | |
| Heptachlor | % | 76 | | | 70-130 | Pass | |
| Heptachlor epoxide | % | 72 | | | 70-130 | Pass | |
| Hexachlorobenzene | % | 71 | | | 70-130 | Pass | |
| Methoxychlor | % | 85 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Polychlorinated Biphenyls** | | | | | | | |
| Aroclor-1016 | % | 104 | | | 70-130 | Pass | |
| Aroclor-1260 | % | 130 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic | % | 114 | | | 80-120 | Pass | |
| Cadmium | % | 111 | | | 80-120 | Pass | |
| Chromium | % | 113 | | | 80-120 | Pass | |
| Copper | % | 107 | | | 80-120 | Pass | |
| Lead | % | 111 | | | 80-120 | Pass | |
| Mercury | % | 108 | | | 80-120 | Pass | |
| Nickel | % | 111 | | | 80-120 | Pass | |
| Zinc | % | 106 | | | 80-120 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | Result 1 | | | | | |
| TRH C6-C9 | S20-No29686 | NCP | % | 71 | | | 70-130 | Pass | |
| TRH C10-C14 | S20-No39362 | NCP | % | 126 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **BTEX** | | | | Result 1 | | | | | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | S20-No29686 | NCP | % | 80 | | | 70-130 | Pass | |
| Toluene | S20-No29686 | NCP | % | 72 | | | 70-130 | Pass | |
| Ethylbenzene | S20-No29686 | NCP | % | 81 | | | 70-130 | Pass | |
| m&p-Xylenes | S20-No29686 | NCP | % | 84 | | | 70-130 | Pass | |
| o-Xylene | S20-No29686 | NCP | % | 85 | | | 70-130 | Pass | |
| Xylenes - Total* | S20-No29686 | NCP | % | 84 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | Result 1 | | | | | |
| Naphthalene | S20-No29686 | NCP | % | 87 | | | 70-130 | Pass | |
| TRH C6-C10 | S20-No29686 | NCP | % | 72 | | | 70-130 | Pass | |
| TRH >C10-C16 | S20-No39362 | NCP | % | 125 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic | S20-No29728 | NCP | % | 111 | | | 75-125 | Pass | |
| Cadmium | S20-No29728 | NCP | % | 110 | | | 75-125 | Pass | |
| Chromium | S20-No35316 | NCP | % | 95 | | | 75-125 | Pass | |
| Lead | S20-No29728 | NCP | % | 108 | | | 75-125 | Pass | |
| Mercury | S20-No29728 | NCP | % | 123 | | | 75-125 | Pass | |
| Nickel | S20-No29728 | NCP | % | 111 | | | 75-125 | Pass | |
| Zinc | S20-No29728 | NCP | % | 101 | | | 75-125 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | Result 1 | Result 2 | RPD | | | |
| TRH C6-C9 | S20-No29685 | NCP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| TRH C10-C14 | S20-No37384 | NCP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| TRH C15-C28 | S20-No37384 | NCP | mg/kg | < 50 | < 50 | <1 | 30% | Pass | |
| TRH C29-C36 | S20-No37384 | NCP | mg/kg | < 50 | 50 | 5.0 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **BTEX** | | | | Result 1 | Result 2 | RPD | | | |
| Benzene | S20-No29685 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Toluene | S20-No29685 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Ethylbenzene | S20-No29685 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| m&p-Xylenes | S20-No29685 | NCP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| o-Xylene | S20-No29685 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Xylenes - Total* | S20-No29685 | NCP | mg/kg | < 0.3 | < 0.3 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | Result 1 | Result 2 | RPD | | | |
| Naphthalene | S20-No29685 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| TRH C6-C10 | S20-No29685 | NCP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| TRH >C10-C16 | S20-No37384 | NCP | mg/kg | < 50 | < 50 | <1 | 30% | Pass | |
| TRH >C16-C34 | S20-No37384 | NCP | mg/kg | < 100 | < 100 | <1 | 30% | Pass | |
| TRH >C34-C40 | S20-No37384 | NCP | mg/kg | < 100 | < 100 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| Acenaphthene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Acenaphthylene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Anthracene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benz(a)anthracene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(a)pyrene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(b&j)fluoranthene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(g.h.i)perylene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(k)fluoranthene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Chrysene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Dibenz(a.h)anthracene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| Fluoranthene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Fluorene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Indeno(1.2.3-cd)pyrene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Naphthalene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Phenanthrene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Pyrene | S20-No34522 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Chlordanes - Total | S20-No34522 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| 4.4'-DDD | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDE | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDT | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| a-BHC | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Aldrin | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| b-BHC | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| d-BHC | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Dieldrin | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan I | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan II | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan sulphate | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin aldehyde | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin ketone | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| g-BHC (Lindane) | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor epoxide | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Hexachlorobenzene | S20-No34522 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Methoxychlor | S20-No34522 | NCP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S20-No30190 | CP | mg/kg | 8.1 | 7.4 | 10 | 30% | Pass | |
| Cadmium | S20-No30190 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S20-No30190 | CP | mg/kg | 32 | 28 | 15 | 30% | Pass | |
| Copper | S20-No30190 | CP | mg/kg | 31 | 27 | 13 | 30% | Pass | |
| Lead | S20-No30190 | CP | mg/kg | 17 | 15 | 14 | 30% | Pass | |
| Mercury | S20-No30190 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | S20-No30190 | CP | mg/kg | 41 | 36 | 13 | 30% | Pass | |
| Zinc | S20-No30190 | CP | mg/kg | 63 | 54 | 15 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | S20-No30166 | NCP | % | 13 | 15 | 16 | 30% | Pass | |

## Comments

### Sample Integrity

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

### Qualifier Codes/Comments

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

## Authorised By

| | |
|---|---|
| Asim Khan | Analytical Services Manager |
| Andrew Sullivan | Senior Analyst-Organic (NSW) |
| Gabriele Cordero | Senior Analyst-Metal (NSW) |
| Nibha Vaidya | Senior Analyst-Asbestos (NSW) |

**Glenn Jackson**

**General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

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

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

**Attention:** **Sahani Gunatunge**

**Report** **757514-W**
Project name KINGSWOOD
Project ID 59831
Received Date Nov 17, 2020

| **Client Sample ID** | | | **RINSATE** | **TS** | **TB** |
|---|---|---|---|---|---|
| **Sample Matrix** | | | **Water** | **Water** | **Water** |
| **Eurofins Sample No.** | | | **S20-No30204** | **S20-No30205** | **S20-No30206** |
| **Date Sampled** | | | **Nov 17, 2020** | **Nov 17, 2020** | **Nov 17, 2020** |
| Test/Reference | LOR | Unit | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | |
| TRH C6-C9 | 0.02 | mg/L | < 0.02 | - | - |
| TRH C10-C14 | 0.05 | mg/L | < 0.05 | - | - |
| TRH C15-C28 | 0.1 | mg/L | < 0.1 | - | - |
| TRH C29-C36 | 0.1 | mg/L | < 0.1 | - | - |
| TRH C10-C36 (Total) | 0.1 | mg/L | < 0.1 | - | - |
| **BTEX** | | | | | |
| Benzene | 0.001 | mg/L | < 0.001 | - | < 0.001 |
| Toluene | 0.001 | mg/L | < 0.001 | - | < 0.001 |
| Ethylbenzene | 0.001 | mg/L | < 0.001 | - | < 0.001 |
| m&p-Xylenes | 0.002 | mg/L | < 0.002 | - | < 0.002 |
| o-Xylene | 0.001 | mg/L | < 0.001 | - | < 0.001 |
| Xylenes - Total* | 0.003 | mg/L | < 0.003 | - | < 0.003 |
| 4-Bromofluorobenzene (surr.) | 1 | % | 102 | - | 117 |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | |
| Naphthalene[N02] | 0.01 | mg/L | < 0.01 | - | - |
| TRH C6-C10 | 0.02 | mg/L | < 0.02 | - | - |
| TRH C6-C10 less BTEX (F1)[N04] | 0.02 | mg/L | < 0.02 | - | - |
| TRH >C10-C16 | 0.05 | mg/L | < 0.05 | - | - |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 0.05 | mg/L | < 0.05 | - | - |
| TRH >C16-C34 | 0.1 | mg/L | < 0.1 | - | - |
| TRH >C34-C40 | 0.1 | mg/L | < 0.1 | - | - |
| TRH >C10-C40 (total)* | 0.1 | mg/L | < 0.1 | - | - |
| **Polycyclic Aromatic Hydrocarbons** | | | | | |
| Acenaphthene | 0.001 | mg/L | < 0.001 | - | - |
| Acenaphthylene | 0.001 | mg/L | < 0.001 | - | - |
| Anthracene | 0.001 | mg/L | < 0.001 | - | - |
| Benz(a)anthracene | 0.001 | mg/L | < 0.001 | - | - |
| Benzo(a)pyrene | 0.001 | mg/L | < 0.001 | - | - |
| Benzo(b&j)fluoranthene[N07] | 0.001 | mg/L | < 0.001 | - | - |
| Benzo(g.h.i)perylene | 0.001 | mg/L | < 0.001 | - | - |
| Benzo(k)fluoranthene | 0.001 | mg/L | < 0.001 | - | - |
| Chrysene | 0.001 | mg/L | < 0.001 | - | - |
| Dibenz(a.h)anthracene | 0.001 | mg/L | < 0.001 | - | - |
| Fluoranthene | 0.001 | mg/L | < 0.001 | - | - |
| Fluorene | 0.001 | mg/L | < 0.001 | - | - |

| Client Sample ID | | | RINSATE | TS | TB |
|---|---|---|---|---|---|
| Sample Matrix | | | Water | Water | Water |
| Eurofins Sample No. | | | S20-No30204 | S20-No30205 | S20-No30206 |
| Date Sampled | | | Nov 17, 2020 | Nov 17, 2020 | Nov 17, 2020 |
| Test/Reference | LOR | Unit | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | |
| Indeno(1.2.3-cd)pyrene | 0.001 | mg/L | < 0.001 | - | - |
| Naphthalene | 0.001 | mg/L | < 0.001 | - | - |
| Phenanthrene | 0.001 | mg/L | < 0.001 | - | - |
| Pyrene | 0.001 | mg/L | < 0.001 | - | - |
| Total PAH* | 0.001 | mg/L | < 0.001 | - | - |
| 2-Fluorobiphenyl (surr.) | 1 | % | 82 | - | - |
| p-Terphenyl-d14 (surr.) | 1 | % | 85 | - | - |
| **Organochlorine Pesticides** | | | | | |
| Chlordanes - Total | 0.002 | mg/L | < 0.002 | - | - |
| 4.4'-DDD | 0.0001 | mg/L | < 0.0001 | - | - |
| 4.4'-DDE | 0.0001 | mg/L | < 0.0001 | - | - |
| 4.4'-DDT | 0.0001 | mg/L | < 0.0001 | - | - |
| a-BHC | 0.0001 | mg/L | < 0.0001 | - | - |
| Aldrin | 0.0001 | mg/L | < 0.0001 | - | - |
| b-BHC | 0.0001 | mg/L | < 0.0001 | - | - |
| d-BHC | 0.0001 | mg/L | < 0.0001 | - | - |
| Dieldrin | 0.0001 | mg/L | < 0.0001 | - | - |
| Endosulfan I | 0.0001 | mg/L | < 0.0001 | - | - |
| Endosulfan II | 0.0001 | mg/L | < 0.0001 | - | - |
| Endosulfan sulphate | 0.0001 | mg/L | < 0.0001 | - | - |
| Endrin | 0.0001 | mg/L | < 0.0001 | - | - |
| Endrin aldehyde | 0.0001 | mg/L | < 0.0001 | - | - |
| Endrin ketone | 0.0001 | mg/L | < 0.0001 | - | - |
| g-BHC (Lindane) | 0.0001 | mg/L | < 0.0001 | - | - |
| Heptachlor | 0.0001 | mg/L | < 0.0001 | - | - |
| Heptachlor epoxide | 0.0001 | mg/L | < 0.0001 | - | - |
| Hexachlorobenzene | 0.0001 | mg/L | < 0.0001 | - | - |
| Methoxychlor | 0.0002 | mg/L | < 0.0002 | - | - |
| Toxaphene | 0.001 | mg/L | < 0.001 | - | - |
| Aldrin and Dieldrin (Total)* | 0.0002 | mg/L | < 0.0002 | - | - |
| DDT + DDE + DDD (Total)* | 0.0002 | mg/L | < 0.0002 | - | - |
| Vic EPA IWRG 621 OCP (Total)* | 0.002 | mg/L | < 0.002 | - | - |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.002 | mg/L | < 0.002 | - | - |
| Dibutylchlorendate (surr.) | 1 | % | 96 | - | - |
| Tetrachloro-m-xylene (surr.) | 1 | % | 79 | - | - |
| **Polychlorinated Biphenyls** | | | | | |
| Aroclor-1016 | 0.005 | mg/L | < 0.005 | - | - |
| Aroclor-1221 | 0.001 | mg/L | < 0.001 | - | - |
| Aroclor-1232 | 0.005 | mg/L | < 0.005 | - | - |
| Aroclor-1242 | 0.005 | mg/L | < 0.005 | - | - |
| Aroclor-1248 | 0.005 | mg/L | < 0.005 | - | - |
| Aroclor-1254 | 0.005 | mg/L | < 0.005 | - | - |
| Aroclor-1260 | 0.005 | mg/L | < 0.005 | - | - |
| Total PCB* | 0.001 | mg/L | < 0.001 | - | - |
| Dibutylchlorendate (surr.) | 1 | % | 96 | - | - |
| Tetrachloro-m-xylene (surr.) | 1 | % | 79 | - | - |

| Client Sample ID | | | RINSATE | TS | TB |
|---|---|---|---|---|---|
| Sample Matrix | | | Water | Water | Water |
| Eurofins Sample No. | | | S20-No30204 | S20-No30205 | S20-No30206 |
| Date Sampled | | | Nov 17, 2020 | Nov 17, 2020 | Nov 17, 2020 |
| Test/Reference | LOR | Unit | | | |
| **Heavy Metals** | | | | | |
| Arsenic | 0.001 | mg/L | < 0.001 | - | - |
| Cadmium | 0.0002 | mg/L | < 0.0002 | - | - |
| Chromium | 0.001 | mg/L | < 0.001 | - | - |
| Copper | 0.001 | mg/L | < 0.001 | - | - |
| Lead | 0.001 | mg/L | < 0.001 | - | - |
| Mercury | 0.0001 | mg/L | < 0.0001 | - | - |
| Nickel | 0.001 | mg/L | < 0.001 | - | - |
| Zinc | 0.005 | mg/L | < 0.005 | - | - |
| **BTEX** | | | | | |
| Benzene | 1 | % | - | 99 | - |
| Ethylbenzene | 1 | % | - | 85 | - |
| m&p-Xylenes | 1 | % | - | 96 | - |
| o-Xylene | 1 | % | - | 79 | - |
| Toluene | 1 | % | - | 90 | - |
| Xylenes - Total | 1 | % | - | 85 | - |
| 4-Bromofluorobenzene (surr.) | 1 | % | - | 120 | - |

## Sample History

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

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

| Description | Testing Site | Extracted | Holding Time |
|---|---|---|---|
| JBS&G Suite 2 | | | |
| Total Recoverable Hydrocarbons - 1999 NEPM Fractions | Sydney | Nov 18, 2020 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| BTEX | Sydney | Nov 18, 2020 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Sydney | Nov 18, 2020 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Sydney | Nov 18, 2020 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Polycyclic Aromatic Hydrocarbons | Sydney | Nov 18, 2020 | 7 Days |
| - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water | | | |
| Organochlorine Pesticides | Sydney | Nov 18, 2020 | 7 Days |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Polychlorinated Biphenyls | Sydney | Nov 18, 2020 | 7 Days |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Metals M8 | Sydney | Nov 18, 2020 | 180 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Australia**

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Perth**
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

**New Zealand**

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** KINGSWOOD
**Project ID:** 59831

**Order No.:**
**Report #:** 757514
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 17, 2020 5:20 PM
**Due:** Nov 24, 2020
**Priority:** 5 Day
**Contact Name:** Sahani Gunatunge

**Eurofins Analytical Services Manager : Ursula Long**

| Sample Detail | | | | | | Asbestos - WA guidelines | HOLD | BTEX | Moisture Set | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | |
| 1 | HA01 0-0.1 | Nov 17, 2020 | | Soil | S20-No30188 | | X | | | | |
| 2 | HA01 0.2-0.3 | Nov 17, 2020 | | Soil | S20-No30189 | | X | | | | |
| 3 | HA01 0.5-0.6 | Nov 17, 2020 | | Soil | S20-No30190 | X | | | X | X | |
| 4 | HA01 0.9-1.0 | Nov 17, 2020 | | Soil | S20-No30191 | | X | | | | |
| 5 | HA02 0-0.1 | Nov 17, 2020 | | Soil | S20-No30192 | | X | | | | |
| 6 | HA02 0.2-0.3 | Nov 17, 2020 | | Soil | S20-No30193 | X | | | X | X | |
| 7 | HA03 0-0.1 | Nov 17, 2020 | | Soil | S20-No30194 | X | | | X | X | |
| 8 | HA03 0.2-0.3 | Nov 17, 2020 | | Soil | S20-No30195 | | X | | | | |
| 9 | HA03 0.5-0.6 | Nov 17, 2020 | | Soil | S20-No30196 | | X | | | | |

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Australia**

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Perth**
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

**New Zealand**

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** KINGSWOOD
**Project ID:** 59831

**Order No.:**
**Report #:** 757514
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 17, 2020 5:20 PM
**Due:** Nov 24, 2020
**Priority:** 5 Day
**Contact Name:** Sahani Gunatunge

**Eurofins Analytical Services Manager : Ursula Long**

| Sample Detail | | | | | | Asbestos - WA guidelines | HOLD | BTEX | Moisture Set | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | |
| 10 | HA03 0.7-0.8 | Nov 17, 2020 | | Soil | S20-No30197 | | X | | | | |
| 11 | HA04 0-0.1 | Nov 17, 2020 | | Soil | S20-No30198 | | X | | | | |
| 12 | HA04 0.2-0.3 | Nov 17, 2020 | | Soil | S20-No30199 | | X | | | | |
| 13 | HA04 0.5-0.6 | Nov 17, 2020 | | Soil | S20-No30200 | X | | | X | X | |
| 14 | HA04 0.9-1.0 | Nov 17, 2020 | | Soil | S20-No30201 | | X | | | | |
| 15 | QC01 | Nov 17, 2020 | | Soil | S20-No30202 | | X | | | | |
| 16 | QA01 | Nov 17, 2020 | | Soil | S20-No30203 | | X | | | | |
| 17 | RINSATE | Nov 17, 2020 | | Water | S20-No30204 | | | | | X | |
| 18 | TS | Nov 17, 2020 | | Water | S20-No30205 | | | | | | X |
| 19 | TB | Nov 17, 2020 | | Water | S20-No30206 | | | X | | | |
| **Test Counts** | | | | | | 4 | 12 | 1 | 4 | 5 | 1 |

## Internal Quality Control Review and Glossary

### General

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

### Holding Times

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

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

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

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

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

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

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

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

### Terms

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

### QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

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

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

### QC Data General Comments

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

**Quality Control Results**

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | | | |
| TRH C6-C9 | mg/L | < 0.02 | | | 0.02 | Pass | |
| TRH C10-C14 | mg/L | < 0.05 | | | 0.05 | Pass | |
| TRH C15-C28 | mg/L | < 0.1 | | | 0.1 | Pass | |
| TRH C29-C36 | mg/L | < 0.1 | | | 0.1 | Pass | |
| **Method Blank** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Toluene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Ethylbenzene | mg/L | < 0.001 | | | 0.001 | Pass | |
| m&p-Xylenes | mg/L | < 0.002 | | | 0.002 | Pass | |
| o-Xylene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Xylenes - Total* | mg/L | < 0.003 | | | 0.003 | Pass | |
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | | |
| Naphthalene | mg/L | < 0.01 | | | 0.01 | Pass | |
| TRH C6-C10 | mg/L | < 0.02 | | | 0.02 | Pass | |
| TRH >C10-C16 | mg/L | < 0.05 | | | 0.05 | Pass | |
| TRH >C16-C34 | mg/L | < 0.1 | | | 0.1 | Pass | |
| TRH >C34-C40 | mg/L | < 0.1 | | | 0.1 | Pass | |
| **Method Blank** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Acenaphthylene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Anthracene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Benz(a)anthracene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Benzo(a)pyrene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Benzo(b&j)fluoranthene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Benzo(g.h.i)perylene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Benzo(k)fluoranthene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Chrysene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Dibenz(a.h)anthracene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Fluoranthene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Fluorene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Indeno(1.2.3-cd)pyrene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Naphthalene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Phenanthrene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Pyrene | mg/L | < 0.001 | | | 0.001 | Pass | |
| **Method Blank** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | mg/L | < 0.002 | | | 0.002 | Pass | |
| 4.4'-DDD | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| 4.4'-DDE | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| 4.4'-DDT | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| a-BHC | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Aldrin | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| b-BHC | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| d-BHC | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Dieldrin | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endosulfan I | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endosulfan II | mg/L | < 0.0001 | | | 0.0001 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| Endosulfan sulphate | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endrin | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endrin aldehyde | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endrin ketone | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| g-BHC (Lindane) | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Heptachlor | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Heptachlor epoxide | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Hexachlorobenzene | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Methoxychlor | mg/L | < 0.0002 | | | 0.0002 | Pass | |
| Toxaphene | mg/L | < 0.001 | | | 0.001 | Pass | |
| **Method Blank** | | | | | | | |
| **Polychlorinated Biphenyls** | | | | | | | |
| Aroclor-1016 | mg/L | < 0.005 | | | 0.005 | Pass | |
| Aroclor-1221 | mg/L | < 0.001 | | | 0.001 | Pass | |
| Aroclor-1232 | mg/L | < 0.005 | | | 0.005 | Pass | |
| Aroclor-1242 | mg/L | < 0.005 | | | 0.005 | Pass | |
| Aroclor-1248 | mg/L | < 0.005 | | | 0.005 | Pass | |
| Aroclor-1254 | mg/L | < 0.005 | | | 0.005 | Pass | |
| Aroclor-1260 | mg/L | < 0.005 | | | 0.005 | Pass | |
| Total PCB* | mg/L | < 0.001 | | | 0.001 | Pass | |
| **Method Blank** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic | mg/L | < 0.001 | | | 0.001 | Pass | |
| Cadmium | mg/L | < 0.0002 | | | 0.0002 | Pass | |
| Chromium | mg/L | < 0.001 | | | 0.001 | Pass | |
| Copper | mg/L | < 0.001 | | | 0.001 | Pass | |
| Lead | mg/L | < 0.001 | | | 0.001 | Pass | |
| Mercury | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Nickel | mg/L | < 0.001 | | | 0.001 | Pass | |
| Zinc | mg/L | < 0.005 | | | 0.005 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | | | |
| TRH C6-C9 | % | 95 | | | 70-130 | Pass | |
| TRH C10-C14 | % | 80 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | % | 98 | | | 70-130 | Pass | |
| Toluene | % | 98 | | | 70-130 | Pass | |
| Ethylbenzene | % | 99 | | | 70-130 | Pass | |
| m&p-Xylenes | % | 99 | | | 70-130 | Pass | |
| o-Xylene | % | 100 | | | 70-130 | Pass | |
| Xylenes - Total* | % | 99 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | | |
| Naphthalene | % | 99 | | | 70-130 | Pass | |
| TRH C6-C10 | % | 95 | | | 70-130 | Pass | |
| TRH >C10-C16 | % | 77 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | % | 101 | | | 70-130 | Pass | |
| Acenaphthylene | % | 100 | | | 70-130 | Pass | |
| Anthracene | % | 87 | | | 70-130 | Pass | |
| Benz(a)anthracene | % | 107 | | | 70-130 | Pass | |
| Benzo(a)pyrene | % | 110 | | | 70-130 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| Benzo(b&j)fluoranthene | % | 115 | | | 70-130 | Pass | |
| Benzo(g.h.i)perylene | % | 106 | | | 70-130 | Pass | |
| Benzo(k)fluoranthene | % | 104 | | | 70-130 | Pass | |
| Chrysene | % | 111 | | | 70-130 | Pass | |
| Dibenz(a.h)anthracene | % | 109 | | | 70-130 | Pass | |
| Fluoranthene | % | 100 | | | 70-130 | Pass | |
| Fluorene | % | 101 | | | 70-130 | Pass | |
| Indeno(1.2.3-cd)pyrene | % | 107 | | | 70-130 | Pass | |
| Naphthalene | % | 99 | | | 70-130 | Pass | |
| Phenanthrene | % | 105 | | | 70-130 | Pass | |
| Pyrene | % | 104 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | % | 110 | | | 70-130 | Pass | |
| 4.4'-DDD | % | 98 | | | 70-130 | Pass | |
| 4.4'-DDE | % | 98 | | | 70-130 | Pass | |
| 4.4'-DDT | % | 104 | | | 70-130 | Pass | |
| a-BHC | % | 104 | | | 70-130 | Pass | |
| Aldrin | % | 87 | | | 70-130 | Pass | |
| b-BHC | % | 108 | | | 70-130 | Pass | |
| d-BHC | % | 104 | | | 70-130 | Pass | |
| Dieldrin | % | 104 | | | 70-130 | Pass | |
| Endosulfan I | % | 109 | | | 70-130 | Pass | |
| Endosulfan II | % | 122 | | | 70-130 | Pass | |
| Endosulfan sulphate | % | 99 | | | 70-130 | Pass | |
| Endrin | % | 103 | | | 70-130 | Pass | |
| Endrin aldehyde | % | 103 | | | 70-130 | Pass | |
| Endrin ketone | % | 102 | | | 70-130 | Pass | |
| g-BHC (Lindane) | % | 107 | | | 70-130 | Pass | |
| Heptachlor | % | 112 | | | 70-130 | Pass | |
| Heptachlor epoxide | % | 104 | | | 70-130 | Pass | |
| Hexachlorobenzene | % | 93 | | | 70-130 | Pass | |
| Methoxychlor | % | 110 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Polychlorinated Biphenyls** | | | | | | | |
| Aroclor-1016 | % | 102 | | | 70-130 | Pass | |
| Aroclor-1260 | % | 120 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic | % | 103 | | | 80-120 | Pass | |
| Cadmium | % | 99 | | | 80-120 | Pass | |
| Chromium | % | 102 | | | 80-120 | Pass | |
| Copper | % | 93 | | | 80-120 | Pass | |
| Lead | % | 98 | | | 80-120 | Pass | |
| Mercury | % | 100 | | | 80-120 | Pass | |
| Nickel | % | 97 | | | 80-120 | Pass | |
| Zinc | % | 96 | | | 80-120 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | Result 1 | | | | | |
| TRH C6-C9 | S20-No30048 | NCP | % | 94 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **BTEX** | | | | Result 1 | | | | | |
| Benzene | S20-No30048 | NCP | % | 105 | | | 70-130 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | S20-No30048 | NCP | % | 97 | | | 70-130 | Pass | |
| Ethylbenzene | S20-No30048 | NCP | % | 97 | | | 70-130 | Pass | |
| m&p-Xylenes | S20-No30048 | NCP | % | 97 | | | 70-130 | Pass | |
| o-Xylene | S20-No30048 | NCP | % | 96 | | | 70-130 | Pass | |
| Xylenes - Total* | S20-No30048 | NCP | % | 97 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | Result 1 | | | | | |
| Naphthalene | S20-No30048 | NCP | % | 93 | | | 70-130 | Pass | |
| TRH C6-C10 | S20-No30048 | NCP | % | 94 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic | S20-No30774 | NCP | % | 102 | | | 75-125 | Pass | |
| Cadmium | S20-No30774 | NCP | % | 104 | | | 75-125 | Pass | |
| Chromium | S20-No28823 | NCP | % | 97 | | | 75-125 | Pass | |
| Copper | S20-No30774 | NCP | % | 101 | | | 75-125 | Pass | |
| Lead | S20-No30774 | NCP | % | 104 | | | 75-125 | Pass | |
| Mercury | S20-No30774 | NCP | % | 107 | | | 75-125 | Pass | |
| Nickel | S20-No30774 | NCP | % | 103 | | | 75-125 | Pass | |
| Zinc | S20-No30774 | NCP | % | 98 | | | 75-125 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | Result 1 | Result 2 | RPD | | | |
| TRH C6-C9 | S20-No30047 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| TRH C10-C14 | S20-No30047 | NCP | mg/L | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| TRH C15-C28 | S20-No30047 | NCP | mg/L | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| TRH C29-C36 | S20-No30047 | NCP | mg/L | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **BTEX** | | | | Result 1 | Result 2 | RPD | | | |
| Benzene | S20-No30047 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Toluene | S20-No30047 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Ethylbenzene | S20-No30047 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| m&p-Xylenes | S20-No30047 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| o-Xylene | S20-No30047 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Xylenes - Total* | S20-No30047 | NCP | mg/L | < 0.003 | < 0.003 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | Result 1 | Result 2 | RPD | | | |
| Naphthalene | S20-No30047 | NCP | mg/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| TRH C6-C10 | S20-No30047 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| TRH >C10-C16 | S20-No30047 | NCP | mg/L | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| TRH >C16-C34 | S20-No30047 | NCP | mg/L | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| TRH >C34-C40 | S20-No30047 | NCP | mg/L | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S20-No30788 | NCP | mg/L | 0.039 | 0.041 | 6.0 | 30% | Pass | |
| Cadmium | S20-No30788 | NCP | mg/L | 0.0012 | 0.0013 | 7.0 | 30% | Pass | |
| Chromium | S20-No30788 | NCP | mg/L | 0.013 | 0.013 | 4.0 | 30% | Pass | |
| Copper | S20-No30788 | NCP | mg/L | 0.065 | 0.069 | 6.0 | 30% | Pass | |
| Lead | S20-No30788 | NCP | mg/L | 0.011 | 0.011 | 5.0 | 30% | Pass | |
| Mercury | S20-No30788 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Nickel | S20-No30788 | NCP | mg/L | 0.24 | 0.25 | 6.0 | 30% | Pass | |
| Zinc | S20-No30788 | NCP | mg/L | 1.3 | 1.4 | 7.0 | 30% | Pass | |

## Comments

## Sample Integrity

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

## Qualifier Codes/Comments

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

## Authorised By

| | |
|---|---|
| Asim Khan | Analytical Services Manager |
| Andrew Sullivan | Senior Analyst-Organic (NSW) |
| Gabriele Cordero | Senior Analyst-Metal (NSW) |

**Glenn Jackson**

**General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

| | |
|---|---|
| **Attention:** | Sahani Gunatunge |
| **Report** | 757514-AID |
| **Project Name** | KINGSWOOD |
| **Project ID** | 59831 |
| **Received Date** | Nov 17, 2020 |
| **Date Reported** | Nov 24, 2020 |

## Methodology:

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

**Project Name** KINGSWOOD
**Project ID** 59831
**Date Sampled** Nov 17, 2020
**Report** 757514-AID

| Client Sample ID | Eurofins Sample No. | Date Sampled | Sample Description | Result |
|---|---|---|---|---|
| HA01 0.5-0.6 | 20-No30190 | Nov 17, 2020 | Approximate Sample 430g<br>Sample consisted of: Brown fine-grained clayey soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| HA02 0.2-0.3 | 20-No30193 | Nov 17, 2020 | Approximate Sample 524g<br>Sample consisted of: Brown fine-grained soil, rocks and organic debris | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| HA03 0-0.1 | 20-No30194 | Nov 17, 2020 | Approximate Sample 488g<br>Sample consisted of: Brown fine-grained soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| HA04 0.5-0.6 | 20-No30200 | Nov 17, 2020 | Approximate Sample 592g<br>Sample consisted of: Brown fine-grained clayey soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |

## Sample History

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

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

| Description | Testing Site | Extracted | Holding Time |
|---|---|---|---|
| Asbestos - LTM-ASB-8020 | Sydney | Nov 18, 2020 | Indefinite |

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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Australia**

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Perth**
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

**New Zealand**

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** KINGSWOOD
**Project ID:** 59831

**Order No.:**
**Report #:** 757514
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 17, 2020 5:20 PM
**Due:** Nov 24, 2020
**Priority:** 5 Day
**Contact Name:** Sahani Gunatunge

**Eurofins Analytical Services Manager : Ursula Long**

| Sample Detail | | | | | | Asbestos - WA guidelines | HOLD | BTEX | Moisture Set | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | |
| 1 | HA01 0-0.1 | Nov 17, 2020 | | Soil | S20-No30188 | | X | | | | |
| 2 | HA01 0.2-0.3 | Nov 17, 2020 | | Soil | S20-No30189 | | X | | | | |
| 3 | HA01 0.5-0.6 | Nov 17, 2020 | | Soil | S20-No30190 | X | | | X | X | |
| 4 | HA01 0.9-1.0 | Nov 17, 2020 | | Soil | S20-No30191 | | X | | | | |
| 5 | HA02 0-0.1 | Nov 17, 2020 | | Soil | S20-No30192 | | X | | | | |
| 6 | HA02 0.2-0.3 | Nov 17, 2020 | | Soil | S20-No30193 | X | | | X | X | |
| 7 | HA03 0-0.1 | Nov 17, 2020 | | Soil | S20-No30194 | X | | | X | X | |
| 8 | HA03 0.2-0.3 | Nov 17, 2020 | | Soil | S20-No30195 | | X | | | | |
| 9 | HA03 0.5-0.6 | Nov 17, 2020 | | Soil | S20-No30196 | | X | | | | |

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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Australia**

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
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**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** KINGSWOOD
**Project ID:** 59831

**Order No.:**
**Report #:** 757514
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 17, 2020 5:20 PM
**Due:** Nov 24, 2020
**Priority:** 5 Day
**Contact Name:** Sahani Gunatunge

**Eurofins Analytical Services Manager : Ursula Long**

| Sample Detail | | | | | | Asbestos - WA guidelines | HOLD | BTEX | Moisture Set | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | X | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | |
| 10 | HA03 0.7-0.8 | Nov 17, 2020 | | Soil | S20-No30197 | | X | | | | |
| 11 | HA04 0-0.1 | Nov 17, 2020 | | Soil | S20-No30198 | | X | | | | |
| 12 | HA04 0.2-0.3 | Nov 17, 2020 | | Soil | S20-No30199 | | X | | | | |
| 13 | HA04 0.5-0.6 | Nov 17, 2020 | | Soil | S20-No30200 | X | | | X | X | |
| 14 | HA04 0.9-1.0 | Nov 17, 2020 | | Soil | S20-No30201 | | X | | | | |
| 15 | QC01 | Nov 17, 2020 | | Soil | S20-No30202 | | X | | | | |
| 16 | QA01 | Nov 17, 2020 | | Soil | S20-No30203 | | X | | | | |
| 17 | RINSATE | Nov 17, 2020 | | Water | S20-No30204 | | | | | X | |
| 18 | TS | Nov 17, 2020 | | Water | S20-No30205 | | | | | | X |
| 19 | TB | Nov 17, 2020 | | Water | S20-No30206 | | | X | | | |
| **Test Counts** | | | | | | 4 | 12 | 1 | 4 | 5 | 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 blue colour, indicates data provided by customer, that may have an impact on the results.
5. This report replaces any interim results previously issued.

### Holding Times

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

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

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

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

### Units

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

### Terms

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

## Comments

S20-No30190 & S20-No30194: Samples received were less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

## Sample Integrity

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

## Qualifier Codes/Comments

| Code | Description |
|---|---|
| N/A | Not applicable |

## Asbestos Counter/Identifier:

| | |
|---|---|
| Laxman Dias | Senior Analyst-Asbestos (NSW) |

## Authorised by:

| | |
|---|---|
| Chamath JHM Annakkage | Senior Analyst-Asbestos (NSW) |

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

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

017696

Eurofins 1of1

# CHAIN OF CUSTODY

JBS&G

| | |
|---|---|
| PROJECT NO.: 59831 | LABORATORY BATCH NO.: |
| PROJECT NAME: Kingswood | SAMPLERS: MW |
| DATE NEEDED BY: STD | QC LEVEL: NEPM (2013) |

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) .....Sbuntunge.....@jbsg.com.au; (3) .....m.nouiain.....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | VPH | BTEX | OTHER | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HA01 0-0.1 | Soil | 17/11/20 | | B, J tice | | | | X | | | |
| 0.2-0.3 | | | | ↓ | | | | X | | | |
| 0.5-0.6 | | | | | | X | | | | X | |
| 0.9-1.0 | | | | J tice | | | | X | | | |
| HA02 0-0.1 | | | | B, J tice | | | | X | | | |
| 0.2-0.3 | | | | ↓ | | X | | | | X | |
| HA03 0-0.1 | | | | B, J tice | | X | | | | X | |
| 0.2-0.3 | | | | ↓ | | | | X | | | |
| 0.5-0.6 | | | | | | | | X | | | |
| 0.7-0.8 | | | | J tice | | | | X | | | |
| HA04 0-0.1 | | | | B, J tice | | | | X | | | |
| 0.2-0.3 | | | | ↓ | | | | X | | | |
| 0.5-0.6 | | | | | | X | | | | X | |
| 0.9-1.0 | | | | J tice | | X | | X | | X | |
| QC01 | | | | B, J tice | | | | X | | | |
| QA01 | | | | ↓ | | | | X | | | |
| Rinsate | | | | Ambers, Heavy Metals, ~~Vials~~ J tice | | X | | | | | |
| TS/TB | | | | Vials tice | | | X | | | | |

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: MWong DATE: 17/11/20 | CONSIGNMENT NOTE NO. | NAME: MR DATE: 16/11/2020 5:20pm | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: JBS&G | TRANSPORT CO. | OF: | COOLER TEMP ..... deg C |
| NAME: DATE: | CONSIGNMENT NOTE NO. | NAME: DATE: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | OF: | COOLER TEMP ..... deg C 6.0°C |

**Container & Preservative Codes:** P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

#757514

eurofins | Environment Testing

ABN: 50 005 085 521 www.eurofins.com.au EnviroSales@eurofins.com

**Australia**

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
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1/21 Smallwood Place
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4/52 Industrial Drive
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PO Box 60 Wickham 2293
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**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

# Sample Receipt Advice

| | |
|---|---|
| **Company name:** | JBS & G Australia (NSW) P/L |
| **Contact name:** | Sahani Gunatunge |
| **Project name:** | KINGSWOOD |
| **Project ID:** | 59831 |
| **Turnaround time:** | 5 Day |
| **Date/Time received** | Nov 17, 2020 5:20 PM |
| **Eurofins reference** | 757514 |

## Sample Information

| | |
|---|---|
| ✓ | A detailed list of analytes logged into our LIMS, is included in the attached summary table. |
| ✓ | Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 6 degrees Celsius. |
| ✓ | All samples have been received as described on the above COC. |
| ✓ | COC has been completed correctly. |
| ✓ | Attempt to chill was evident. |
| ✓ | Appropriately preserved sample containers have been used. |
| ✓ | All samples were received in good condition. |
| ✓ | Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times. |
| ✓ | Appropriate sample containers have been used. |
| ✓ | Sample containers for volatile analysis received with zero headspace. |
| X | Split sample sent to requested external lab. |
| X | Some samples have been subcontracted. |
| N/A | Custody Seals intact (if used). |

## Notes

## Contact

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

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

Results will be delivered electronically via email to Sahani Gunatunge - sgunatunge@jbsg.com.au.

Global Leader - Results you can trust

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

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

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

**Attention:** **Sahani Gunatunge**

**Report** **758440-S**
Project name TAFE KINGSWOOD
Project ID 59831
Received Date Nov 20, 2020

| **Client Sample ID** | | | **BH01 0.2-0.3** | **BH01 0.5-0.6** | **BH02 0-0.1** | **BH02 1.0-1.1** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins Sample No.** | | | **S20-No37857** | **S20-No37858** | **S20-No37860** | **S20-No37863** |
| **Date Sampled** | | | **Nov 18, 2020** | **Nov 18, 2020** | **Nov 19, 2020** | **Nov 19, 2020** |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | | |
| TRH C6-C9 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C10-C14 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C15-C28 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C29-C36 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C10-C36 (Total) | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| **BTEX** | | | | | | |
| Benzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Toluene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Ethylbenzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| m&p-Xylenes | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| o-Xylene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Xylenes - Total* | 0.3 | mg/kg | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| 4-Bromofluorobenzene (surr.) | 1 | % | 79 | 84 | 90 | 85 |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | |
| Naphthalene[N02] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| TRH C6-C10 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH >C10-C16 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C16-C34 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C34-C40 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C10-C40 (total)* | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Benzo(a)pyrene TEQ (lower bound) * | 0.5 | mg/kg | < 0.5 | < 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 | | | BH01 0.2-0.3 | BH01 0.5-0.6 | BH02 0-0.1 | BH02 1.0-1.1 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S20-No37857 | S20-No37858 | S20-No37860 | S20-No37863 |
| Date Sampled | | | Nov 18, 2020 | Nov 18, 2020 | Nov 19, 2020 | Nov 19, 2020 |
| 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 | % | 90 | 88 | 98 | 81 |
| p-Terphenyl-d14 (surr.) | 1 | % | 84 | 86 | 87 | 81 |
| **Organochlorine Pesticides** | | | | | | |
| Chlordanes - Total | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 4.4'-DDD | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4.4'-DDE | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4.4'-DDT | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| a-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Aldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| b-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| d-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dieldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan I | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan II | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan sulphate | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endrin aldehyde | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endrin ketone | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| g-BHC (Lindane) | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Heptachlor | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Heptachlor epoxide | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Hexachlorobenzene | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Methoxychlor | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Toxaphene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Dibutylchlorendate (surr.) | 1 | % | 127 | 112 | 107 | 106 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 81 | 83 | 85 | 81 |
| **Polychlorinated Biphenyls** | | | | | | |
| Aroclor-1016 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1221 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Aroclor-1232 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1242 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1248 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1254 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1260 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total PCB* | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Dibutylchlorendate (surr.) | 1 | % | 127 | 112 | 107 | 106 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 81 | 83 | 85 | 81 |

| Client Sample ID | | | BH01 0.2-0.3 | BH01 0.5-0.6 | BH02 0-0.1 | BH02 1.0-1.1 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S20-No37857 | S20-No37858 | S20-No37860 | S20-No37863 |
| Date Sampled | | | Nov 18, 2020 | Nov 18, 2020 | Nov 19, 2020 | Nov 19, 2020 |
| Test/Reference | LOR | Unit | | | | |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 19 | 11 | 7.7 | 24 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 23 | 19 | 21 | 23 |
| Copper | 5 | mg/kg | 30 | 27 | 31 | 32 |
| Lead | 5 | mg/kg | 28 | 17 | 13 | 11 |
| Mercury | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Nickel | 5 | mg/kg | 18 | 16 | 22 | 35 |
| Zinc | 5 | mg/kg | 80 | 57 | 42 | 76 |
| | | | | | | |
| % Moisture | 1 | % | 15 | 13 | 13 | 9.5 |

| Client Sample ID | | | BH03 0.2-0.3 | BH04 0.2-0.3 | BH04 1.5-1.6 | BH09 0-0.1 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S20-No37864 | S20-No37868 | S20-No37871 | S20-No37890 |
| Date Sampled | | | Nov 18, 2020 | Nov 18, 2020 | Nov 18, 2020 | Nov 19, 2020 |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | | |
| TRH C6-C9 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C10-C14 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C15-C28 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C29-C36 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C10-C36 (Total) | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| **BTEX** | | | | | | |
| Benzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Toluene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Ethylbenzene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| m&p-Xylenes | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| o-Xylene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Xylenes - Total* | 0.3 | mg/kg | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| 4-Bromofluorobenzene (surr.) | 1 | % | 81 | 72 | 85 | 87 |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | |
| Naphthalene[N02] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| TRH C6-C10 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH >C10-C16 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C16-C34 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C34-C40 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C10-C40 (total)* | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| Benzo(a)pyrene TEQ (lower bound) * | 0.5 | mg/kg | < 0.5 | < 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 |

| Client Sample ID | | | BH03 0.2-0.3 | BH04 0.2-0.3 | BH04 1.5-1.6 | BH09 0-0.1 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S20-No37864 | S20-No37868 | S20-No37871 | S20-No37890 |
| Date Sampled | | | Nov 18, 2020 | Nov 18, 2020 | Nov 18, 2020 | Nov 19, 2020 |
| Test/Reference | LOR | Unit | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | |
| 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 | % | 89 | 84 | 93 | 82 |
| p-Terphenyl-d14 (surr.) | 1 | % | 88 | 83 | 92 | 79 |
| **Organochlorine Pesticides** | | | | | | |
| Chlordanes - Total | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 4.4'-DDD | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4.4'-DDE | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4.4'-DDT | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| a-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Aldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| b-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| d-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dieldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan I | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan II | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan sulphate | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endrin aldehyde | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endrin ketone | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| g-BHC (Lindane) | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Heptachlor | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Heptachlor epoxide | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Hexachlorobenzene | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Methoxychlor | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Toxaphene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Dibutylchlorendate (surr.) | 1 | % | 128 | 130 | 114 | 80 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 88 | 83 | 98 | 85 |
| **Polychlorinated Biphenyls** | | | | | | |
| Aroclor-1016 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1221 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Aroclor-1232 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1242 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1248 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1254 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |

| Client Sample ID | | | BH03 0.2-0.3 | BH04 0.2-0.3 | BH04 1.5-1.6 | BH09 0-0.1 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S20-No37864 | S20-No37868 | S20-No37871 | S20-No37890 |
| Date Sampled | | | Nov 18, 2020 | Nov 18, 2020 | Nov 18, 2020 | Nov 19, 2020 |
| Test/Reference | LOR | Unit | | | | |
| **Polychlorinated Biphenyls** | | | | | | |
| Aroclor-1260 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total PCB* | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Dibutylchlorendate (surr.) | 1 | % | 128 | 130 | 114 | 80 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 88 | 83 | 98 | 85 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 8.1 | 9.0 | 24 | 9.6 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 19 | 21 | 15 | 25 |
| Copper | 5 | mg/kg | 31 | 22 | 41 | 32 |
| Lead | 5 | mg/kg | 24 | 14 | 16 | 11 |
| Mercury | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Nickel | 5 | mg/kg | 16 | 21 | 41 | 27 |
| Zinc | 5 | mg/kg | 75 | 36 | 72 | 62 |
| | | | | | | |
| % Moisture | 1 | % | 20 | 33 | 13 | 8.1 |
| % Clay | 1 | % | - | 10 | - | 12 |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | 10 | uS/cm | - | 23 | - | 70 |
| pH (1:5 Aqueous extract at 25°C as rec.) | 0.1 | pH Units | - | 6.4 | - | 7.1 |
| Total Organic Carbon | 0.1 | % | - | 1.1 | - | 0.6 |
| **Cation Exchange Capacity** | | | | | | |
| Cation Exchange Capacity | 0.05 | meq/100g | - | 11 | - | 33 |

| Client Sample ID | | | BH09 0.5-0.6 | BH10 0.2-0.3 | BH10 1.0-1.1 | QA181120 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S20-No37892 | S20-No37895 | S20-No37897 | S20-No37899 |
| Date Sampled | | | Nov 19, 2020 | Nov 19, 2020 | Nov 19, 2020 | Nov 18, 2020 |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | | |
| TRH C6-C9 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C10-C14 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C15-C28 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH C29-C36 | 50 | mg/kg | < 50 | < 50 | < 50 | 81 |
| TRH C10-C36 (Total) | 50 | mg/kg | < 50 | < 50 | < 50 | 81 |
| **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 | % | 79 | 80 | 82 | 73 |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | |
| Naphthalene[N02] | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| TRH C6-C10 | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH C6-C10 less BTEX (F1)[N04] | 20 | mg/kg | < 20 | < 20 | < 20 | < 20 |
| TRH >C10-C16 | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 50 | mg/kg | < 50 | < 50 | < 50 | < 50 |

| Client Sample ID | | | BH09 0.5-0.6 | BH10 0.2-0.3 | BH10 1.0-1.1 | QA181120 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S20-No37892 | S20-No37895 | S20-No37897 | S20-No37899 |
| Date Sampled | | | Nov 19, 2020 | Nov 19, 2020 | Nov 19, 2020 | Nov 18, 2020 |
| Test/Reference | LOR | Unit | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | |
| TRH >C16-C34 | 100 | mg/kg | < 100 | < 100 | < 100 | < 100 |
| TRH >C34-C40 | 100 | mg/kg | < 100 | < 100 | < 100 | 130 |
| TRH >C10-C40 (total)* | 100 | mg/kg | < 100 | < 100 | < 100 | 130 |
| **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 | % | 91 | 85 | 90 | 88 |
| p-Terphenyl-d14 (surr.) | 1 | % | 86 | 82 | 82 | 87 |
| **Organochlorine Pesticides** | | | | | | |
| Chlordanes - Total | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| 4.4'-DDD | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4.4'-DDE | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4.4'-DDT | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| a-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Aldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| b-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| d-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dieldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan I | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan II | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan sulphate | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endrin aldehyde | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endrin ketone | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| g-BHC (Lindane) | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Heptachlor | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Heptachlor epoxide | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Hexachlorobenzene | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Methoxychlor | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Toxaphene | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

| Client Sample ID | | | BH09 0.5-0.6 | BH10 0.2-0.3 | BH10 1.0-1.1 | QA181120 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins Sample No. | | | S20-No37892 | S20-No37895 | S20-No37897 | S20-No37899 |
| Date Sampled | | | Nov 19, 2020 | Nov 19, 2020 | Nov 19, 2020 | Nov 18, 2020 |
| Test/Reference | LOR | Unit | | | | |
| **Organochlorine Pesticides** | | | | | | |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Dibutylchlorendate (surr.) | 1 | % | 95 | 99 | 84 | 106 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 91 | 87 | 90 | 90 |
| **Polychlorinated Biphenyls** | | | | | | |
| Aroclor-1016 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1221 | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Aroclor-1232 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1242 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1248 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1254 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Aroclor-1260 | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total PCB* | 0.5 | mg/kg | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Dibutylchlorendate (surr.) | 1 | % | 95 | 99 | 84 | 106 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 91 | 87 | 90 | 90 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 5.1 | 4.7 | 5.4 | 10 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 32 | 24 | 19 | 24 |
| Copper | 5 | mg/kg | 32 | 38 | 43 | 28 |
| Lead | 5 | mg/kg | 13 | 12 | 11 | 16 |
| Mercury | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Nickel | 5 | mg/kg | 42 | 19 | 11 | 20 |
| Zinc | 5 | mg/kg | 85 | 68 | 42 | 46 |
| | | | | | | |
| % Moisture | 1 | % | 6.3 | 12 | 13 | 15 |

## Sample History

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

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

| Description | Testing Site | Extracted | Holding Time |
|---|---|---|---|
| JBS&G Suite 2 | | | |
| Total Recoverable Hydrocarbons - 1999 NEPM Fractions | Sydney | Nov 24, 2020 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| BTEX | Sydney | Nov 24, 2020 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Sydney | Nov 24, 2020 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Sydney | Nov 24, 2020 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Polycyclic Aromatic Hydrocarbons | Sydney | Nov 24, 2020 | 14 Days |
| - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water | | | |
| Organochlorine Pesticides | Sydney | Nov 24, 2020 | 14 Days |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Polychlorinated Biphenyls | Sydney | Nov 24, 2020 | 28 Days |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Metals M8 | Sydney | Nov 24, 2020 | 180 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |
| % Moisture | Sydney | Nov 22, 2020 | 14 Days |
| - Method: LTM-GEN-7080 Moisture | | | |
| % Clay | Brisbane | Nov 24, 2020 | 14 Days |
| - Method: LTM-GEN-7040 | | | |
| pH (1:5 Aqueous extract at 25°C as rec.) | Sydney | Nov 24, 2020 | 7 Days |
| - Method: LTM-GEN-7090 pH in soil by ISE | | | |
| Total Organic Carbon | Melbourne | Nov 25, 2020 | 28 Days |
| - Method: LTM-INO-4060 Total Organic Carbon in water and soil | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | Sydney | Nov 24, 2020 | 7 Days |
| - Method: LTM-INO-4030 Conductivity | | | |
| Cation Exchange Capacity | Melbourne | Nov 25, 2020 | 180 Days |
| - Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage | | | |

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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Australia**

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

**New Zealand**

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** TAFE KINGSWOOD
**Project ID:** 59831

**Order No.:**
**Report #:** 758440
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 20, 2020 6:36 PM
**Due:** Nov 27, 2020
**Priority:** 5 Day
**Contact Name:** Sahani Gunatunge

**Eurofins Analytical Services Manager : Ursula Long**

| Sample Detail | | | | | | % Clay | Asbestos - WA guidelines | CANCELLED | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Total Organic Carbon | BTEX | Moisture Set | Cation Exchange Capacity | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | X | | | X | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | X | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | | | | | | |
| 1 | BH01 0.2-0.3 | Nov 18, 2020 | | Soil | S20-No37857 | | X | | | | | | X | | X | |
| 2 | BH01 0.5-0.6 | Nov 18, 2020 | | Soil | S20-No37858 | | | | | | | | X | | X | |
| 3 | BH01 1.0-1.1 | Nov 18, 2020 | | Soil | S20-No37859 | | | | X | | | | | | | |
| 4 | BH02 0-0.1 | Nov 19, 2020 | | Soil | S20-No37860 | | X | | | | | | X | | X | |
| 5 | BH02 0.3-0.4 | Nov 19, 2020 | | Soil | S20-No37861 | | | | X | | | | | | | |
| 6 | BH02 0.5-0.6 | Nov 19, 2020 | | Soil | S20-No37862 | | | | X | | | | | | | |
| 7 | BH02 1.0-1.1 | Nov 19, 2020 | | Soil | S20-No37863 | | | | | | | | X | | X | |
| 8 | BH03 0.2-0.3 | Nov 18, 2020 | | Soil | S20-No37864 | | X | | | | | | X | | X | |
| 9 | BH03 0.5-0.6 | Nov 18, 2020 | | Soil | S20-No37865 | | | | X | | | | | | | |

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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Australia**

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6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

**New Zealand**

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
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**Priority:** 5 Day
**Contact Name:** Sahani Gunatunge

**Eurofins Analytical Services Manager : Ursula Long**

| Sample Detail | | | | | | % Clay | Asbestos - WA guidelines | CANCELLED | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Total Organic Carbon | BTEX | Moisture Set | Cation Exchange Capacity | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | X | | | X | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | X | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | | | | |
| 10 | BH03 1.0-1.1 | Nov 18, 2020 | | Soil | S20-No37866 | | | | X | | | | | | | |
| 11 | BH03 1.5-1.6 | Nov 18, 2020 | | Soil | S20-No37867 | | | | X | | | | | | | |
| 12 | BH04 0.2-0.3 | Nov 18, 2020 | | Soil | S20-No37868 | X | X | | | X | X | | X | X | X | |
| 13 | BH04 0.5-0.6 | Nov 18, 2020 | | Soil | S20-No37869 | | | X | | | | | | | | |
| 14 | BH04 1.0-1.1 | Nov 18, 2020 | | Soil | S20-No37870 | | | | X | | | | | | | |
| 15 | BH04 1.5-1.6 | Nov 18, 2020 | | Soil | S20-No37871 | | | | | | | | X | | X | |
| 16 | BH04 2.4-2.5 | Nov 18, 2020 | | Soil | S20-No37872 | | | | X | | | | | | | |
| 17 | BH04 2.7-2.8 | Nov 18, 2020 | | Soil | S20-No37873 | | | X | | | | | | | | |
| 18 | BH05 0-0.1 | Nov 18, 2020 | | Soil | S20-No37874 | | | | X | | | | | | | |
| 19 | BH05 0.2-0.3 | Nov 18, 2020 | | Soil | S20-No37875 | | | | X | | | | | | | |
| 20 | BH05 0.5-0.6 | Nov 18, 2020 | | Soil | S20-No37876 | | | | X | | | | | | | |

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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

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6 Monterey Road
Dandenong South VIC 3175
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16 Mars Road
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4/52 Industrial Drive
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PO Box 60 Wickham 2293
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| Sample Detail | | | | | | % Clay | Asbestos - WA guidelines | CANCELLED | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Total Organic Carbon | BTEX | Moisture Set | Cation Exchange Capacity | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | X | | | X | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | X | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | | | | |
| 21 | BH05 1.0-1.1 | Nov 18, 2020 | | Soil | S20-No37877 | | | | X | | | | | | | |
| 22 | BH06 0-0.1 | Nov 19, 2020 | | Soil | S20-No37878 | | | | X | | | | | | | |
| 23 | BH06 0.3-0.4 | Nov 19, 2020 | | Soil | S20-No37879 | | | | X | | | | | | | |
| 24 | BH06 0.5-0.6 | Nov 19, 2020 | | Soil | S20-No37880 | | | | X | | | | | | | |
| 25 | BH06 1.0-1.1 | Nov 19, 2020 | | Soil | S20-No37881 | | | | X | | | | | | | |
| 26 | BH06 1.5-1.6 | Nov 19, 2020 | | Soil | S20-No37882 | | | | X | | | | | | | |
| 27 | BH07 0-0.1 | Nov 19, 2020 | | Soil | S20-No37883 | | | | X | | | | | | | |
| 28 | BH07 0.3-0.4 | Nov 19, 2020 | | Soil | S20-No37884 | | | | X | | | | | | | |
| 29 | BH07 0.5-0.6 | Nov 19, 2020 | | Soil | S20-No37885 | | | | X | | | | | | | |
| 30 | BH07 1.0-1.1 | Nov 19, 2020 | | Soil | S20-No37886 | | | | X | | | | | | | |
| 31 | BH08 0.2-0.3 | Nov 18, 2020 | | Soil | S20-No37887 | | | | X | | | | | | | |

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| Sample Detail | | | | | | % Clay | Asbestos - WA guidelines | CANCELLED | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Total Organic Carbon | BTEX | Moisture Set | Cation Exchange Capacity | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | X | | | X | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | X | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | | | | |
| 32 | BH08 0.5-0.6 | Nov 18, 2020 | | Soil | S20-No37888 | | | | X | | | | | | | |
| 33 | BH08 1.0-1.1 | Nov 18, 2020 | | Soil | S20-No37889 | | | | X | | | | | | | |
| 34 | BH09 0-0.1 | Nov 19, 2020 | | Soil | S20-No37890 | X | X | | | X | X | | X | X | X | |
| 35 | BH09 0.3-0.4 | Nov 19, 2020 | | Soil | S20-No37891 | | | | X | | | | | | | |
| 36 | BH09 0.5-0.6 | Nov 19, 2020 | | Soil | S20-No37892 | | | | | | | | X | | X | |
| 37 | BH09 1.0-1.1 | Nov 19, 2020 | | Soil | S20-No37893 | | | | X | | | | | | | |
| 38 | BH09 1.5-1.6 | Nov 19, 2020 | | Soil | S20-No37894 | | | | X | | | | | | | |
| 39 | BH10 0.2-0.3 | Nov 19, 2020 | | Soil | S20-No37895 | | X | | | | | | X | | X | |
| 40 | BH10 0.5-0.6 | Nov 19, 2020 | | Soil | S20-No37896 | | | | X | | | | | | | |
| 41 | BH10 1.0-1.1 | Nov 19, 2020 | | Soil | S20-No37897 | | | | | | | | X | | X | |
| 42 | BH10 1.5-1.6 | Nov 19, 2020 | | Soil | S20-No37898 | | | | X | | | | | | | |

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Australia**

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Perth**
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

**New Zealand**

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** TAFE KINGSWOOD
**Project ID:** 59831

**Order No.:**
**Report #:** 758440
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 20, 2020 6:36 PM
**Due:** Nov 27, 2020
**Priority:** 5 Day
**Contact Name:** Sahani Gunatunge

**Eurofins Analytical Services Manager : Ursula Long**

| Sample Detail | | | | | | % Clay | Asbestos - WA guidelines | CANCELLED | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Total Organic Carbon | BTEX | Moisture Set | Cation Exchange Capacity | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | X | | | X | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | X | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | | | | |
| 43 | QA181120 | Nov 18, 2020 | | Soil | S20-No37899 | | X | | | | | | X | | X | |
| 44 | TS | Nov 19, 2020 | | Water | S20-No37900 | | | | | | | | | | | X |
| 45 | TB | Nov 19, 2020 | | Water | S20-No37901 | | | | | | | X | | | | |
| 46 | BH05 .5-.6 | Nov 18, 2020 | | Soil | S20-No37940 | | | | X | | | | | | | |
| 47 | BH09 1.9-2.0 | Nov 19, 2020 | | Soil | S20-No37941 | | | | X | | | | | | | |
| **Test Counts** | | | | | | 2 | 7 | 2 | 31 | 2 | 2 | 1 | 12 | 2 | 12 | 1 |

## Internal Quality Control Review and Glossary

### General

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

### Holding Times

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

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

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

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

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

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

### Units

**mg/kg:** milligrams per kilogram | **mg/L:** milligrams per litre | **ug/L:** micrograms per litre

**ppm:** Parts per million | **ppb:** Parts per billion | **%:** Percentage

**org/100mL:** Organisms per 100 millilitres | **NTU:** Nephelometric Turbidity Units | **MPN/100mL:** Most Probable Number of organisms per 100 millilitres

### Terms

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

### QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

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

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

### QC Data General Comments

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

**Quality Control Results**

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | | | |
| TRH C6-C9 | mg/kg | < 20 | | | 20 | Pass | |
| TRH C10-C14 | mg/kg | < 20 | | | 20 | Pass | |
| TRH C15-C28 | mg/kg | < 50 | | | 50 | Pass | |
| TRH C29-C36 | mg/kg | < 50 | | | 50 | Pass | |
| **Method Blank** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Toluene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Ethylbenzene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| m&p-Xylenes | mg/kg | < 0.2 | | | 0.2 | Pass | |
| o-Xylene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Xylenes - Total* | mg/kg | < 0.3 | | | 0.3 | Pass | |
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | | |
| Naphthalene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| TRH C6-C10 | mg/kg | < 20 | | | 20 | Pass | |
| TRH >C10-C16 | mg/kg | < 50 | | | 50 | Pass | |
| TRH >C16-C34 | mg/kg | < 100 | | | 100 | Pass | |
| TRH >C34-C40 | mg/kg | < 100 | | | 100 | Pass | |
| **Method Blank** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Acenaphthylene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Anthracene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benz(a)anthracene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(a)pyrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(b&j)fluoranthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(g.h.i)perylene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Benzo(k)fluoranthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Chrysene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Dibenz(a.h)anthracene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Fluoranthene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Fluorene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Indeno(1.2.3-cd)pyrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Naphthalene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Phenanthrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Pyrene | mg/kg | < 0.5 | | | 0.5 | Pass | |
| **Method Blank** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | mg/kg | < 0.1 | | | 0.1 | Pass | |
| 4.4'-DDD | mg/kg | < 0.05 | | | 0.05 | Pass | |
| 4.4'-DDE | mg/kg | < 0.05 | | | 0.05 | Pass | |
| 4.4'-DDT | mg/kg | < 0.05 | | | 0.05 | Pass | |
| a-BHC | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Aldrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| b-BHC | mg/kg | < 0.05 | | | 0.05 | Pass | |
| d-BHC | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Dieldrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan I | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan II | mg/kg | < 0.05 | | | 0.05 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| Endosulfan sulphate | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin aldehyde | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin ketone | mg/kg | < 0.05 | | | 0.05 | Pass | |
| g-BHC (Lindane) | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Heptachlor | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Heptachlor epoxide | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Hexachlorobenzene | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Methoxychlor | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Toxaphene | mg/kg | < 0.1 | | | 0.1 | Pass | |
| **Method Blank** | | | | | | | |
| **Polychlorinated Biphenyls** | | | | | | | |
| Aroclor-1016 | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Aroclor-1221 | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Aroclor-1232 | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Aroclor-1242 | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Aroclor-1248 | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Aroclor-1254 | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Aroclor-1260 | mg/kg | < 0.5 | | | 0.5 | Pass | |
| Total PCB* | mg/kg | < 0.5 | | | 0.5 | Pass | |
| **Method Blank** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic | mg/kg | < 2 | | | 2 | Pass | |
| Cadmium | mg/kg | < 0.4 | | | 0.4 | Pass | |
| Chromium | mg/kg | < 5 | | | 5 | Pass | |
| Copper | mg/kg | < 5 | | | 5 | Pass | |
| Lead | mg/kg | < 5 | | | 5 | Pass | |
| Mercury | mg/kg | < 0.1 | | | 0.1 | Pass | |
| Nickel | mg/kg | < 5 | | | 5 | Pass | |
| Zinc | mg/kg | < 5 | | | 5 | Pass | |
| **Method Blank** | | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | uS/cm | < 10 | | | 10 | Pass | |
| Total Organic Carbon | % | < 0.1 | | | 0.1 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | | | |
| TRH C6-C9 | % | 104 | | | 70-130 | Pass | |
| TRH C10-C14 | % | 93 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | % | 125 | | | 70-130 | Pass | |
| Toluene | % | 107 | | | 70-130 | Pass | |
| Ethylbenzene | % | 110 | | | 70-130 | Pass | |
| m&p-Xylenes | % | 110 | | | 70-130 | Pass | |
| o-Xylene | % | 107 | | | 70-130 | Pass | |
| Xylenes - Total* | % | 109 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | | |
| Naphthalene | % | 83 | | | 70-130 | Pass | |
| TRH C6-C10 | % | 100 | | | 70-130 | Pass | |
| TRH >C10-C16 | % | 93 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | % | 92 | | | 70-130 | Pass | |
| Acenaphthylene | % | 99 | | | 70-130 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| Anthracene | % | 106 | | | 70-130 | Pass | |
| Benz(a)anthracene | % | 96 | | | 70-130 | Pass | |
| Benzo(a)pyrene | % | 91 | | | 70-130 | Pass | |
| Benzo(b&j)fluoranthene | % | 95 | | | 70-130 | Pass | |
| Benzo(g.h.i)perylene | % | 106 | | | 70-130 | Pass | |
| Benzo(k)fluoranthene | % | 94 | | | 70-130 | Pass | |
| Chrysene | % | 77 | | | 70-130 | Pass | |
| Dibenz(a.h)anthracene | % | 97 | | | 70-130 | Pass | |
| Fluoranthene | % | 98 | | | 70-130 | Pass | |
| Fluorene | % | 99 | | | 70-130 | Pass | |
| Indeno(1.2.3-cd)pyrene | % | 96 | | | 70-130 | Pass | |
| Naphthalene | % | 93 | | | 70-130 | Pass | |
| Phenanthrene | % | 95 | | | 70-130 | Pass | |
| Pyrene | % | 95 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | % | 82 | | | 70-130 | Pass | |
| 4.4'-DDD | % | 89 | | | 70-130 | Pass | |
| 4.4'-DDE | % | 89 | | | 70-130 | Pass | |
| 4.4'-DDT | % | 91 | | | 70-130 | Pass | |
| a-BHC | % | 92 | | | 70-130 | Pass | |
| Aldrin | % | 87 | | | 70-130 | Pass | |
| b-BHC | % | 78 | | | 70-130 | Pass | |
| d-BHC | % | 78 | | | 70-130 | Pass | |
| Dieldrin | % | 80 | | | 70-130 | Pass | |
| Endosulfan I | % | 88 | | | 70-130 | Pass | |
| Endosulfan II | % | 90 | | | 70-130 | Pass | |
| Endosulfan sulphate | % | 76 | | | 70-130 | Pass | |
| Endrin | % | 80 | | | 70-130 | Pass | |
| Endrin aldehyde | % | 89 | | | 70-130 | Pass | |
| Endrin ketone | % | 73 | | | 70-130 | Pass | |
| g-BHC (Lindane) | % | 81 | | | 70-130 | Pass | |
| Heptachlor | % | 87 | | | 70-130 | Pass | |
| Heptachlor epoxide | % | 78 | | | 70-130 | Pass | |
| Hexachlorobenzene | % | 71 | | | 70-130 | Pass | |
| Methoxychlor | % | 80 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Polychlorinated Biphenyls** | | | | | | | |
| Aroclor-1016 | % | 87 | | | 70-130 | Pass | |
| Aroclor-1260 | % | 107 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic | % | 87 | | | 80-120 | Pass | |
| Cadmium | % | 93 | | | 80-120 | Pass | |
| Chromium | % | 96 | | | 80-120 | Pass | |
| Copper | % | 102 | | | 80-120 | Pass | |
| Lead | % | 96 | | | 80-120 | Pass | |
| Mercury | % | 106 | | | 80-120 | Pass | |
| Nickel | % | 98 | | | 80-120 | Pass | |
| Zinc | % | 83 | | | 80-120 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | % | 93 | | | 70-130 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | Result 1 | | | | | |
| TRH C6-C9 | S20-No37605 | NCP | % | 81 | | | 70-130 | Pass | |
| TRH C10-C14 | S20-No39362 | NCP | % | 126 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **BTEX** | | | | Result 1 | | | | | |
| Benzene | S20-No37605 | NCP | % | 87 | | | 70-130 | Pass | |
| Toluene | S20-No37605 | NCP | % | 72 | | | 70-130 | Pass | |
| Ethylbenzene | S20-No37605 | NCP | % | 74 | | | 70-130 | Pass | |
| m&p-Xylenes | S20-No37605 | NCP | % | 75 | | | 70-130 | Pass | |
| o-Xylene | S20-No37605 | NCP | % | 73 | | | 70-130 | Pass | |
| Xylenes - Total* | S20-No37605 | NCP | % | 74 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | Result 1 | | | | | |
| Naphthalene | S20-No36831 | NCP | % | 113 | | | 70-130 | Pass | |
| TRH C6-C10 | S20-No37605 | NCP | % | 80 | | | 70-130 | Pass | |
| TRH >C10-C16 | S20-No39362 | NCP | % | 125 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | Result 1 | | | | | |
| Acenaphthene | S20-No34849 | NCP | % | 97 | | | 70-130 | Pass | |
| Acenaphthylene | S20-No34849 | NCP | % | 105 | | | 70-130 | Pass | |
| Anthracene | S20-No34849 | NCP | % | 110 | | | 70-130 | Pass | |
| Benz(a)anthracene | S20-No34849 | NCP | % | 102 | | | 70-130 | Pass | |
| Benzo(a)pyrene | S20-No34849 | NCP | % | 100 | | | 70-130 | Pass | |
| Benzo(b&j)fluoranthene | S20-No34849 | NCP | % | 99 | | | 70-130 | Pass | |
| Benzo(g.h.i)perylene | S20-No34849 | NCP | % | 110 | | | 70-130 | Pass | |
| Benzo(k)fluoranthene | S20-No34849 | NCP | % | 106 | | | 70-130 | Pass | |
| Chrysene | S20-No34849 | NCP | % | 108 | | | 70-130 | Pass | |
| Dibenz(a.h)anthracene | S20-No34849 | NCP | % | 103 | | | 70-130 | Pass | |
| Fluoranthene | S20-No34849 | NCP | % | 94 | | | 70-130 | Pass | |
| Fluorene | S20-No34849 | NCP | % | 106 | | | 70-130 | Pass | |
| Indeno(1.2.3-cd)pyrene | S20-No34849 | NCP | % | 100 | | | 70-130 | Pass | |
| Naphthalene | S20-No34849 | NCP | % | 106 | | | 70-130 | Pass | |
| Phenanthrene | S20-No34849 | NCP | % | 99 | | | 70-130 | Pass | |
| Pyrene | S20-No34849 | NCP | % | 96 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | | | | | |
| Chlordanes - Total | S20-No34849 | NCP | % | 92 | | | 70-130 | Pass | |
| 4.4'-DDD | S20-No34849 | NCP | % | 119 | | | 70-130 | Pass | |
| 4.4'-DDE | S20-No34849 | NCP | % | 89 | | | 70-130 | Pass | |
| 4.4'-DDT | S20-No34849 | NCP | % | 117 | | | 70-130 | Pass | |
| a-BHC | S20-No34849 | NCP | % | 112 | | | 70-130 | Pass | |
| Aldrin | S20-No34849 | NCP | % | 82 | | | 70-130 | Pass | |
| b-BHC | S20-No34849 | NCP | % | 94 | | | 70-130 | Pass | |
| d-BHC | S20-No34849 | NCP | % | 97 | | | 70-130 | Pass | |
| Dieldrin | S20-No34849 | NCP | % | 105 | | | 70-130 | Pass | |
| Endosulfan I | S20-No34849 | NCP | % | 100 | | | 70-130 | Pass | |
| Endosulfan II | S20-No34849 | NCP | % | 125 | | | 70-130 | Pass | |
| Endosulfan sulphate | S20-No34849 | NCP | % | 100 | | | 70-130 | Pass | |
| Endrin | S20-No34849 | NCP | % | 110 | | | 70-130 | Pass | |
| Endrin aldehyde | S20-No34849 | NCP | % | 93 | | | 70-130 | Pass | |
| Endrin ketone | S20-No34849 | NCP | % | 92 | | | 70-130 | Pass | |
| g-BHC (Lindane) | S20-No34849 | NCP | % | 96 | | | 70-130 | Pass | |
| Heptachlor | S20-No34849 | NCP | % | 103 | | | 70-130 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| Heptachlor epoxide | S20-No34849 | NCP | % | 88 | | | 70-130 | Pass | |
| Hexachlorobenzene | S20-No34849 | NCP | % | 90 | | | 70-130 | Pass | |
| Methoxychlor | S20-No34849 | NCP | % | 104 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Polychlorinated Biphenyls** | | | | Result 1 | | | | | |
| Aroclor-1016 | W20-No32575 | NCP | % | 93 | | | 70-130 | Pass | |
| Aroclor-1260 | W20-No32575 | NCP | % | 115 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic | S20-No37868 | CP | % | 110 | | | 75-125 | Pass | |
| Cadmium | S20-No37868 | CP | % | 103 | | | 75-125 | Pass | |
| Chromium | S20-No37868 | CP | % | 112 | | | 75-125 | Pass | |
| Copper | S20-No37868 | CP | % | 88 | | | 75-125 | Pass | |
| Lead | S20-No37868 | CP | % | 99 | | | 75-125 | Pass | |
| Mercury | S20-No37868 | CP | % | 93 | | | 75-125 | Pass | |
| Nickel | S20-No37868 | CP | % | 113 | | | 75-125 | Pass | |
| Zinc | S20-No37868 | CP | % | 77 | | | 75-125 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | Result 1 | Result 2 | RPD | | | |
| TRH C6-C9 | S20-No37604 | NCP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| TRH C10-C14 | S20-No42658 | NCP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| TRH C15-C28 | S20-No42658 | NCP | mg/kg | < 50 | < 50 | <1 | 30% | Pass | |
| TRH C29-C36 | S20-No42658 | NCP | mg/kg | < 50 | < 50 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **BTEX** | | | | Result 1 | Result 2 | RPD | | | |
| Benzene | S20-No37604 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Toluene | S20-No37604 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Ethylbenzene | S20-No37604 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| m&p-Xylenes | S20-No37604 | NCP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| o-Xylene | S20-No37604 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Xylenes - Total* | S20-No37604 | NCP | mg/kg | < 0.3 | < 0.3 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | Result 1 | Result 2 | RPD | | | |
| Naphthalene | S20-No37604 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| TRH C6-C10 | S20-No37604 | NCP | mg/kg | < 20 | < 20 | <1 | 30% | Pass | |
| TRH >C10-C16 | S20-No42658 | NCP | mg/kg | < 50 | < 50 | <1 | 30% | Pass | |
| TRH >C16-C34 | S20-No42658 | NCP | mg/kg | < 100 | < 100 | <1 | 30% | Pass | |
| TRH >C34-C40 | S20-No42658 | NCP | mg/kg | < 100 | < 100 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| Acenaphthene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Acenaphthylene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Anthracene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benz(a)anthracene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(a)pyrene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(b&j)fluoranthene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(g.h.i)perylene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Benzo(k)fluoranthene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Chrysene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Dibenz(a.h)anthracene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Fluoranthene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Fluorene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Indeno(1.2.3-cd)pyrene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons** | | | | Result 1 | Result 2 | RPD | | | |
| Naphthalene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Phenanthrene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Pyrene | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Chlordanes - Total | W20-No32588 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| 4.4'-DDD | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDE | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDT | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| a-BHC | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Aldrin | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| b-BHC | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| d-BHC | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Dieldrin | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan I | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan II | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan sulphate | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin aldehyde | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin ketone | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| g-BHC (Lindane) | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor epoxide | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Hexachlorobenzene | W20-No32588 | NCP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Methoxychlor | W20-No32588 | NCP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Polychlorinated Biphenyls** | | | | Result 1 | Result 2 | RPD | | | |
| Aroclor-1016 | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Aroclor-1221 | W20-No32588 | NCP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Aroclor-1232 | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Aroclor-1242 | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Aroclor-1248 | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Aroclor-1254 | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Aroclor-1260 | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| Total PCB* | W20-No32588 | NCP | mg/kg | < 0.5 | < 0.5 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | S20-No37863 | CP | % | 9.5 | 10 | 7.0 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| Conductivity (1:5 aqueous extract at 25°C as rec.) | S20-No37747 | NCP | uS/cm | 12 | 12 | 5.0 | 30% | Pass | |
| pH (1:5 Aqueous extract at 25°C as rec.) | S20-No37747 | NCP | pH Units | 6.2 | 6.1 | Pass | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S20-No37871 | CP | mg/kg | 24 | 25 | 5.0 | 30% | Pass | |
| Cadmium | S20-No37871 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S20-No37871 | CP | mg/kg | 15 | 15 | 1.0 | 30% | Pass | |
| Copper | S20-No37871 | CP | mg/kg | 41 | 42 | 3.0 | 30% | Pass | |
| Lead | S20-No37871 | CP | mg/kg | 16 | 14 | 11 | 30% | Pass | |
| Mercury | S20-No37871 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | S20-No37871 | CP | mg/kg | 41 | 45 | 10 | 30% | Pass | |
| Zinc | S20-No37871 | CP | mg/kg | 72 | 87 | 19 | 30% | Pass | |

| Duplicate | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Result 1 | Result 2 | RPD | | | |
| Total Organic Carbon | S20-No37890 | CP | % | 0.6 | < 0.1 | 200 | 30% | Fail | Q15 |

## Comments

### Sample Integrity

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

### Qualifier Codes/Comments

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

### Authorised By

| | |
|---|---|
| Ursula Long | Analytical Services Manager |
| Andrew Sullivan | Senior Analyst-Organic (NSW) |
| Emily Rosenberg | Senior Analyst-Metal (VIC) |
| Gabriele Cordero | Senior Analyst-Inorganic (NSW) |
| Gabriele Cordero | Senior Analyst-Metal (NSW) |
| Jonathon Angell | Senior Analyst-Inorganic (QLD) |
| Nibha Vaidya | Senior Analyst-Asbestos (NSW) |
| Scott Beddoes | Senior Analyst-Inorganic (VIC) |

**Glenn Jackson**

**General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

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

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

**Attention:** **Sahani Gunatunge**

**Report** **758440-W**
Project name TAFE KINGSWOOD
Project ID 59831
Received Date Nov 20, 2020

| **Client Sample ID** | | | **TS** | **TB** |
|---|---|---|---|---|
| **Sample Matrix** | | | **Water** | **Water** |
| **Eurofins Sample No.** | | | **S20-No37900** | **S20-No37901** |
| **Date Sampled** | | | **Nov 19, 2020** | **Nov 19, 2020** |
| Test/Reference | LOR | Unit | | |
| **BTEX** | | | | |
| Benzene | 1 | % | 100 | - |
| Ethylbenzene | 1 | % | 98 | - |
| m&p-Xylenes | 1 | % | 100 | - |
| o-Xylene | 1 | % | 96 | - |
| Toluene | 1 | % | 100 | - |
| Xylenes - Total | 1 | % | 98 | - |
| 4-Bromofluorobenzene (surr.) | 1 | % | 117 | - |
| **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 | % | - | 118 |

## Sample History

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

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

| Description | Testing Site | Extracted | Holding Time |
|---|---|---|---|
| JBS&G Suite 2 | | | |
| BTEX | Sydney | Nov 22, 2020 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Australia**

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Perth**
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

**New Zealand**

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** TAFE KINGSWOOD
**Project ID:** 59831

**Order No.:**
**Report #:** 758440
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 20, 2020 6:36 PM
**Due:** Nov 27, 2020
**Priority:** 5 Day
**Contact Name:** Sahani Gunatunge

**Eurofins Analytical Services Manager : Ursula Long**

| Sample Detail | | | | | | % Clay | Asbestos - WA guidelines | CANCELLED | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Total Organic Carbon | BTEX | Moisture Set | Cation Exchange Capacity | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | X | | | X | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | X | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | | | | | | |
| 1 | BH01 0.2-0.3 | Nov 18, 2020 | | Soil | S20-No37857 | | X | | | | | | X | | X | |
| 2 | BH01 0.5-0.6 | Nov 18, 2020 | | Soil | S20-No37858 | | | | | | | | X | | X | |
| 3 | BH01 1.0-1.1 | Nov 18, 2020 | | Soil | S20-No37859 | | | | X | | | | | | | |
| 4 | BH02 0-0.1 | Nov 19, 2020 | | Soil | S20-No37860 | | X | | | | | | X | | X | |
| 5 | BH02 0.3-0.4 | Nov 19, 2020 | | Soil | S20-No37861 | | | | X | | | | | | | |
| 6 | BH02 0.5-0.6 | Nov 19, 2020 | | Soil | S20-No37862 | | | | X | | | | | | | |
| 7 | BH02 1.0-1.1 | Nov 19, 2020 | | Soil | S20-No37863 | | | | | | | | X | | X | |
| 8 | BH03 0.2-0.3 | Nov 18, 2020 | | Soil | S20-No37864 | | X | | | | | | X | | X | |
| 9 | BH03 0.5-0.6 | Nov 18, 2020 | | Soil | S20-No37865 | | | | X | | | | | | | |

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Australia**

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Perth**
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

**New Zealand**

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** TAFE KINGSWOOD
**Project ID:** 59831

**Order No.:**
**Report #:** 758440
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 20, 2020 6:36 PM
**Due:** Nov 27, 2020
**Priority:** 5 Day
**Contact Name:** Sahani Gunatunge

**Eurofins Analytical Services Manager : Ursula Long**

| Sample Detail | | | | | | % Clay | Asbestos - WA guidelines | CANCELLED | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Total Organic Carbon | BTEX | Moisture Set | Cation Exchange Capacity | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | X | | | X | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | X | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | | | | |
| 10 | BH03 1.0-1.1 | Nov 18, 2020 | | Soil | S20-No37866 | | | | X | | | | | | | |
| 11 | BH03 1.5-1.6 | Nov 18, 2020 | | Soil | S20-No37867 | | | | X | | | | | | | |
| 12 | BH04 0.2-0.3 | Nov 18, 2020 | | Soil | S20-No37868 | X | X | | | X | X | | X | X | X | |
| 13 | BH04 0.5-0.6 | Nov 18, 2020 | | Soil | S20-No37869 | | | X | | | | | | | | |
| 14 | BH04 1.0-1.1 | Nov 18, 2020 | | Soil | S20-No37870 | | | | X | | | | | | | |
| 15 | BH04 1.5-1.6 | Nov 18, 2020 | | Soil | S20-No37871 | | | | | | | | X | | X | |
| 16 | BH04 2.4-2.5 | Nov 18, 2020 | | Soil | S20-No37872 | | | | X | | | | | | | |
| 17 | BH04 2.7-2.8 | Nov 18, 2020 | | Soil | S20-No37873 | | | X | | | | | | | | |
| 18 | BH05 0-0.1 | Nov 18, 2020 | | Soil | S20-No37874 | | | | X | | | | | | | |
| 19 | BH05 0.2-0.3 | Nov 18, 2020 | | Soil | S20-No37875 | | | | X | | | | | | | |
| 20 | BH05 0.5-0.6 | Nov 18, 2020 | | Soil | S20-No37876 | | | | X | | | | | | | |

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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Australia**

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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Site # 23736

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4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

**New Zealand**

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** TAFE KINGSWOOD
**Project ID:** 59831

**Order No.:**
**Report #:** 758440
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 20, 2020 6:36 PM
**Due:** Nov 27, 2020
**Priority:** 5 Day
**Contact Name:** Sahani Gunatunge

**Eurofins Analytical Services Manager : Ursula Long**

| Sample Detail | | | | | | % Clay | Asbestos - WA guidelines | CANCELLED | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Total Organic Carbon | BTEX | Moisture Set | Cation Exchange Capacity | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | X | | | X | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | X | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | | | | |
| 21 | BH05 1.0-1.1 | Nov 18, 2020 | | Soil | S20-No37877 | | | | X | | | | | | | |
| 22 | BH06 0-0.1 | Nov 19, 2020 | | Soil | S20-No37878 | | | | X | | | | | | | |
| 23 | BH06 0.3-0.4 | Nov 19, 2020 | | Soil | S20-No37879 | | | | X | | | | | | | |
| 24 | BH06 0.5-0.6 | Nov 19, 2020 | | Soil | S20-No37880 | | | | X | | | | | | | |
| 25 | BH06 1.0-1.1 | Nov 19, 2020 | | Soil | S20-No37881 | | | | X | | | | | | | |
| 26 | BH06 1.5-1.6 | Nov 19, 2020 | | Soil | S20-No37882 | | | | X | | | | | | | |
| 27 | BH07 0-0.1 | Nov 19, 2020 | | Soil | S20-No37883 | | | | X | | | | | | | |
| 28 | BH07 0.3-0.4 | Nov 19, 2020 | | Soil | S20-No37884 | | | | X | | | | | | | |
| 29 | BH07 0.5-0.6 | Nov 19, 2020 | | Soil | S20-No37885 | | | | X | | | | | | | |
| 30 | BH07 1.0-1.1 | Nov 19, 2020 | | Soil | S20-No37886 | | | | X | | | | | | | |
| 31 | BH08 0.2-0.3 | Nov 18, 2020 | | Soil | S20-No37887 | | | | X | | | | | | | |

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IANZ # 1327

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| Sample Detail | | | | | | % Clay | Asbestos - WA guidelines | CANCELLED | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Total Organic Carbon | BTEX | Moisture Set | Cation Exchange Capacity | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | X | | | X | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | X | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | | | | |
| 32 | BH08 0.5-0.6 | Nov 18, 2020 | | Soil | S20-No37888 | | | | X | | | | | | | |
| 33 | BH08 1.0-1.1 | Nov 18, 2020 | | Soil | S20-No37889 | | | | X | | | | | | | |
| 34 | BH09 0-0.1 | Nov 19, 2020 | | Soil | S20-No37890 | X | X | | | X | X | | X | X | X | |
| 35 | BH09 0.3-0.4 | Nov 19, 2020 | | Soil | S20-No37891 | | | | X | | | | | | | |
| 36 | BH09 0.5-0.6 | Nov 19, 2020 | | Soil | S20-No37892 | | | | | | | | X | | X | |
| 37 | BH09 1.0-1.1 | Nov 19, 2020 | | Soil | S20-No37893 | | | | X | | | | | | | |
| 38 | BH09 1.5-1.6 | Nov 19, 2020 | | Soil | S20-No37894 | | | | X | | | | | | | |
| 39 | BH10 0.2-0.3 | Nov 19, 2020 | | Soil | S20-No37895 | | X | | | | | | X | | X | |
| 40 | BH10 0.5-0.6 | Nov 19, 2020 | | Soil | S20-No37896 | | | | X | | | | | | | |
| 41 | BH10 1.0-1.1 | Nov 19, 2020 | | Soil | S20-No37897 | | | | | | | | X | | X | |
| 42 | BH10 1.5-1.6 | Nov 19, 2020 | | Soil | S20-No37898 | | | | X | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | X | | | X | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | X | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | | | | |
| 43 | QA181120 | Nov 18, 2020 | | Soil | S20-No37899 | | X | | | | | | X | | X | |
| 44 | TS | Nov 19, 2020 | | Water | S20-No37900 | | | | | | | | | | | X |
| 45 | TB | Nov 19, 2020 | | Water | S20-No37901 | | | | | | | X | | | | |
| 46 | BH05 .5-.6 | Nov 18, 2020 | | Soil | S20-No37940 | | | | X | | | | | | | |
| 47 | BH09 1.9-2.0 | Nov 19, 2020 | | Soil | S20-No37941 | | | | X | | | | | | | |
| **Test Counts** | | | | | | 2 | 7 | 2 | 31 | 2 | 2 | 1 | 12 | 2 | 12 | 1 |

## Internal Quality Control Review and Glossary

### General

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

### Holding Times

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

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

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

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

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

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

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

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

### Terms

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

### QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

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

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

### QC Data General Comments

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

**Quality Control Results**

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Toluene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Ethylbenzene | mg/L | < 0.001 | | | 0.001 | Pass | |
| m&p-Xylenes | mg/L | < 0.002 | | | 0.002 | Pass | |
| o-Xylene | mg/L | < 0.001 | | | 0.001 | Pass | |
| Xylenes - Total* | mg/L | < 0.003 | | | 0.003 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | % | 92 | | | 70-130 | Pass | |
| Toluene | % | 92 | | | 70-130 | Pass | |
| Ethylbenzene | % | 93 | | | 70-130 | Pass | |
| m&p-Xylenes | % | 94 | | | 70-130 | Pass | |
| o-Xylene | % | 95 | | | 70-130 | Pass | |
| Xylenes - Total* | % | 94 | | | 70-130 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **BTEX** | | | | Result 1 | Result 2 | RPD | | | |
| Benzene | S20-No47019 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Toluene | S20-No47019 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Ethylbenzene | S20-No47019 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| m&p-Xylenes | S20-No47019 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| o-Xylene | S20-No47019 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Xylenes - Total* | S20-No47019 | NCP | mg/L | < 0.003 | < 0.003 | <1 | 30% | Pass | |

## Comments

## Sample Integrity

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

## Authorised By

Ursula Long — Analytical Services Manager

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

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

# Certificate of Analysis

Environment Testing

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

| | |
|---|---|
| **Attention:** | Sahani Gunatunge |
| **Report** | 758440-AID |
| **Project Name** | TAFE KINGSWOOD |
| **Project ID** | 59831 |
| **Received Date** | Nov 20, 2020 |
| **Date Reported** | Nov 30, 2020 |

## Methodology:

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

**Project Name** TAFE KINGSWOOD
**Project ID** 59831
**Date Sampled** Nov 18, 2020 to Nov 19, 2020
**Report** 758440-AID

| Client Sample ID | Eurofins Sample No. | Date Sampled | Sample Description | Result |
|---|---|---|---|---|
| BH01 0.2-0.3 | 20-No37857 | Nov 18, 2020 | Approximate Sample 701g<br>Sample consisted of: Brown fine-grained clayey soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| BH02 0-0.1 | 20-No37860 | Nov 19, 2020 | Approximate Sample 499g<br>Sample consisted of: Brown fine-grained soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| BH03 0.2-0.3 | 20-No37864 | Nov 18, 2020 | Approximate Sample 462g<br>Sample consisted of: Brown fine-grained clayey soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| BH04 0.2-0.3 | 20-No37868 | Nov 18, 2020 | Approximate Sample 475g<br>Sample consisted of: Brown fine-grained soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| BH09 0-0.1 | 20-No37890 | Nov 19, 2020 | Approximate Sample 639g<br>Sample consisted of: Brown fine-grained soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| BH10 0.2-0.3 | 20-No37895 | Nov 19, 2020 | Approximate Sample 453g<br>Sample consisted of: Brown fine-grained clayey soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |
| QA181120 | 20-No37899 | Nov 18, 2020 | Approximate Sample 416g<br>Sample consisted of: Brown fine-grained soil and rocks | No asbestos detected at the reporting limit of 0.001% w/w.*<br>Organic fibre detected.<br>No trace asbestos detected. |

## Sample History

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

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

| Description | Testing Site | Extracted | Holding Time |
|---|---|---|---|
| Asbestos - LTM-ASB-8020 | Sydney | Nov 22, 2020 | Indefinite |

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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Australia**

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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Unit F3, Building F
16 Mars Road
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IANZ # 1327

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Rolleston, Christchurch 7675
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**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** TAFE KINGSWOOD
**Project ID:** 59831

**Order No.:**
**Report #:** 758440
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 20, 2020 6:36 PM
**Due:** Nov 27, 2020
**Priority:** 5 Day
**Contact Name:** Sahani Gunatunge

**Eurofins Analytical Services Manager : Ursula Long**

| Sample Detail | | | | | | % Clay | Asbestos - WA guidelines | CANCELLED | HOLD | pH (1:5 Aqueous extract at 25°C as rec.) | Total Organic Carbon | BTEX | Moisture Set | Cation Exchange Capacity | JBS&G Suite 2 | BTEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | X | | | X | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | X | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | | | | | | |
| 1 | BH01 0.2-0.3 | Nov 18, 2020 | | Soil | S20-No37857 | | X | | | | | | X | | X | |
| 2 | BH01 0.5-0.6 | Nov 18, 2020 | | Soil | S20-No37858 | | | | | | | | X | | X | |
| 3 | BH01 1.0-1.1 | Nov 18, 2020 | | Soil | S20-No37859 | | | | X | | | | | | | |
| 4 | BH02 0-0.1 | Nov 19, 2020 | | Soil | S20-No37860 | | X | | | | | | X | | X | |
| 5 | BH02 0.3-0.4 | Nov 19, 2020 | | Soil | S20-No37861 | | | | X | | | | | | | |
| 6 | BH02 0.5-0.6 | Nov 19, 2020 | | Soil | S20-No37862 | | | | X | | | | | | | |
| 7 | BH02 1.0-1.1 | Nov 19, 2020 | | Soil | S20-No37863 | | | | | | | | X | | X | |
| 8 | BH03 0.2-0.3 | Nov 18, 2020 | | Soil | S20-No37864 | | X | | | | | | X | | X | |
| 9 | BH03 0.5-0.6 | Nov 18, 2020 | | Soil | S20-No37865 | | | | X | | | | | | | |

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**Eurofins Analytical Services Manager : Ursula Long**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | X | | | X | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | X | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | | | | |
| 10 | BH03 1.0-1.1 | Nov 18, 2020 | | Soil | S20-No37866 | | | | X | | | | | | | |
| 11 | BH03 1.5-1.6 | Nov 18, 2020 | | Soil | S20-No37867 | | | | X | | | | | | | |
| 12 | BH04 0.2-0.3 | Nov 18, 2020 | | Soil | S20-No37868 | X | X | | | X | X | | X | X | X | |
| 13 | BH04 0.5-0.6 | Nov 18, 2020 | | Soil | S20-No37869 | | | X | | | | | | | | |
| 14 | BH04 1.0-1.1 | Nov 18, 2020 | | Soil | S20-No37870 | | | | X | | | | | | | |
| 15 | BH04 1.5-1.6 | Nov 18, 2020 | | Soil | S20-No37871 | | | | | | | | X | | X | |
| 16 | BH04 2.4-2.5 | Nov 18, 2020 | | Soil | S20-No37872 | | | | X | | | | | | | |
| 17 | BH04 2.7-2.8 | Nov 18, 2020 | | Soil | S20-No37873 | | | X | | | | | | | | |
| 18 | BH05 0-0.1 | Nov 18, 2020 | | Soil | S20-No37874 | | | | X | | | | | | | |
| 19 | BH05 0.2-0.3 | Nov 18, 2020 | | Soil | S20-No37875 | | | | X | | | | | | | |
| 20 | BH05 0.5-0.6 | Nov 18, 2020 | | Soil | S20-No37876 | | | | X | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | X | | | X | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | X | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | | | | |
| 21 | BH05 1.0-1.1 | Nov 18, 2020 | | Soil | S20-No37877 | | | | X | | | | | | | |
| 22 | BH06 0-0.1 | Nov 19, 2020 | | Soil | S20-No37878 | | | | X | | | | | | | |
| 23 | BH06 0.3-0.4 | Nov 19, 2020 | | Soil | S20-No37879 | | | | X | | | | | | | |
| 24 | BH06 0.5-0.6 | Nov 19, 2020 | | Soil | S20-No37880 | | | | X | | | | | | | |
| 25 | BH06 1.0-1.1 | Nov 19, 2020 | | Soil | S20-No37881 | | | | X | | | | | | | |
| 26 | BH06 1.5-1.6 | Nov 19, 2020 | | Soil | S20-No37882 | | | | X | | | | | | | |
| 27 | BH07 0-0.1 | Nov 19, 2020 | | Soil | S20-No37883 | | | | X | | | | | | | |
| 28 | BH07 0.3-0.4 | Nov 19, 2020 | | Soil | S20-No37884 | | | | X | | | | | | | |
| 29 | BH07 0.5-0.6 | Nov 19, 2020 | | Soil | S20-No37885 | | | | X | | | | | | | |
| 30 | BH07 1.0-1.1 | Nov 19, 2020 | | Soil | S20-No37886 | | | | X | | | | | | | |
| 31 | BH08 0.2-0.3 | Nov 18, 2020 | | Soil | S20-No37887 | | | | X | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | X | | | X | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | X | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | | | | |
| 32 | BH08 0.5-0.6 | Nov 18, 2020 | | Soil | S20-No37888 | | | | X | | | | | | | |
| 33 | BH08 1.0-1.1 | Nov 18, 2020 | | Soil | S20-No37889 | | | | X | | | | | | | |
| 34 | BH09 0-0.1 | Nov 19, 2020 | | Soil | S20-No37890 | X | X | | | X | X | | X | X | X | |
| 35 | BH09 0.3-0.4 | Nov 19, 2020 | | Soil | S20-No37891 | | | | X | | | | | | | |
| 36 | BH09 0.5-0.6 | Nov 19, 2020 | | Soil | S20-No37892 | | | | | | | | X | | X | |
| 37 | BH09 1.0-1.1 | Nov 19, 2020 | | Soil | S20-No37893 | | | | X | | | | | | | |
| 38 | BH09 1.5-1.6 | Nov 19, 2020 | | Soil | S20-No37894 | | | | X | | | | | | | |
| 39 | BH10 0.2-0.3 | Nov 19, 2020 | | Soil | S20-No37895 | | X | | | | | | X | | X | |
| 40 | BH10 0.5-0.6 | Nov 19, 2020 | | Soil | S20-No37896 | | | | X | | | | | | | |
| 41 | BH10 1.0-1.1 | Nov 19, 2020 | | Soil | S20-No37897 | | | | | | | | X | | X | |
| 42 | BH10 1.5-1.6 | Nov 19, 2020 | | Soil | S20-No37898 | | | | X | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | | | X | | | X | | |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | X | X | X | | X | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | X | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | | | | |
| 43 | QA181120 | Nov 18, 2020 | | Soil | S20-No37899 | | X | | | | | | X | | X | |
| 44 | TS | Nov 19, 2020 | | Water | S20-No37900 | | | | | | | | | | | X |
| 45 | TB | Nov 19, 2020 | | Water | S20-No37901 | | | | | | | X | | | | |
| 46 | BH05 .5-.6 | Nov 18, 2020 | | Soil | S20-No37940 | | | | X | | | | | | | |
| 47 | BH09 1.9-2.0 | Nov 19, 2020 | | Soil | S20-No37941 | | | | X | | | | | | | |
| **Test Counts** | | | | | | 2 | 7 | 2 | 31 | 2 | 2 | 1 | 12 | 2 | 12 | 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 blue colour, indicates data provided by customer, that may have an impact on the results.
5. This report replaces any interim results previously issued.

### Holding Times

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

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

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

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

### Units

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

### Terms

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

## Comments

S20-No37860 to S20-No37868 & S20-No37895 & S20-No37899: Samples received were less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

## Sample Integrity

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

## Qualifier Codes/Comments

| Code | Description |
|---|---|
| N/A | Not applicable |

## Asbestos Counter/Identifier:

| | |
|---|---|
| Laxman Dias | Senior Analyst-Asbestos (NSW) |

## Authorised by:

| | |
|---|---|
| Sayeed Abu | Senior Analyst-Asbestos (NSW) |

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

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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# Sample Receipt Advice

| | |
|---|---|
| **Company name:** | JBS & G Australia (NSW) P/L |
| **Contact name:** | Sahani Gunatunge |
| **Project name:** | TAFE KINGSWOOD |
| **Project ID:** | 59831 |
| **Turnaround time:** | 5 Day |
| **Date/Time received** | Nov 20, 2020 6:36 PM |
| **Eurofins reference** | 758440 |

## Sample Information

| | |
|---|---|
| ✓ | A detailed list of analytes logged into our LIMS, is included in the attached summary table. |
| ✓ | Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 8.7 degrees Celsius. |
| ✓ | All samples have been received as described on the above COC. |
| ✓ | COC has been completed correctly. |
| ✓ | Attempt to chill was evident. |
| ✓ | Appropriately preserved sample containers have been used. |
| ✓ | All samples were received in good condition. |
| ✓ | Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times. |
| ✓ | Appropriate sample containers have been used. |
| ✓ | Sample containers for volatile analysis received with zero headspace. |
| ✓ | Split sample sent to requested external lab. |
| ✗ | Some samples have been subcontracted. |
| N/A | Custody Seals intact (if used). |

## Notes

Sample QC181120 (Jar, Bag) forwarded to Envirolab. Samples; BH04 0.5-0.6 and BH04 2.7-2.8 not received. Extra sample jars; BH05 .5-.6 and BH09 1.9-2.0 received, placed on hold.
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:

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

Results will be delivered electronically via email to Sahani Gunatunge - sgunatunge@jbsg.com.au.

# Chain of Custody

Eurofins 1 of 3

JBS&G

| | |
|---|---|
| PROJECT NO.: 59831 | LABORATORY BATCH NO.: |
| PROJECT NAME: TAFE Kingswood PSI | SAMPLERS: SG |
| DATE NEEDED BY: Standard TAT | QC LEVEL: NEPM (2013) |

PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) sgunatunge@jbsg.com.au; (3) .....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | JB2A | JB2 | Toc/cec/ % clay pH | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BH01 0.2-0.3 | SOIL | 18/11/20 | | jar + bag + ice | | X | | | | | |
| 0.5-0.6 | | ↓ | | jar | | | X | | | | |
| 1.0-1.1 | | ↓ | | jar | | | | | | | |
| BH02 0-0.1 | | 19/11/20 | | + bag | | X | | | | | |
| 0.3-0.4 | | ↓ | | | | | | | | | |
| 0.5-0.6 | | ↓ | | | | | | | | | |
| 1.0-1.1 | | ↓ | | | | | X | | | | |
| BH03 0.2-0.3 | | 18/11/20 | | + bag | | X | | | | | |
| 0.5-0.6 | | ↓ | | | | | | | | | |
| 1.0-1.1 | | ↓ | | | | | | | | | |
| 1.5-1.6 | | ↓ | | | | | | | | | |
| BH04 0.2-0.3 | | 18/11/20 | | + bag | | X | | X | | | |
| 0.5-0.6 | | ↓ | | | | | | | | | |
| 1.0-1.1 | | ↓ | | | | | | | | | |
| 1.5-1.6 | | ↓ | | | | | X | | | | |
| 2.4-2.5 | | ↓ | | | | | | | | | |
| 2.7-2.8 | ↓ | ↓ | | ↓ | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: DATE: 20/11/20 | CONSIGNMENT NOTE NO. | NAME: Kathy DATE: 20/11 | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: JBS&G | TRANSPORT CO. | OF: | COOLER TEMP ..... deg C |
| NAME: DATE: | CONSIGNMENT NOTE NO. | NAME: DATE: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | OF: | COOLER TEMP ..... deg C |

**Container & Preservative Codes:** P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

# 758440

# Chain of Custody

Eurofins 2 of 3

JBS&G

PROJECT NO.: 59831
PROJECT NAME: TAFE Kingswood
DATE NEEDED BY: Standard TAT
LABORATORY BATCH NO.:
SAMPLERS: SG
QC LEVEL: NEPM (2013)
PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) ..Sgunatunge@jbsg.com.au; (3) .....@jbsg.com.au
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | JB2A | JB2 | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|
| BH05 0-0.1 | SOIL | 18/11/20 | | jar +ice | | | | | | |
| 0.2-0.3 | ↓ | ↓ | | +bag | | | | | | |
| 0.5-0.6 | | | | | | | | | | |
| 1.0-1.1 | | | | | | | | | | |
| BH06 0-0.1 | | 19/11/20 | | | | | | | | |
| 0.3-0.4 | | | | | | | | | | |
| 0.5-0.6 | | | | | | | | | | |
| 1.0-1.1 | | | | | | | | | | |
| 1.5-1.6 | | | | | | | | | | |
| BH07 0-0.1 | | 19/11/20 | | +bag | | | | | | |
| 0.3-0.4 | | | | | | | | | | |
| 0.5-0.6 | | | | | | | | | | |
| 1.0-1.1 | | | | | | | | | | |
| BH08 0.2-0.3 | | 18/11/20 | | +bag | | | | | | |
| 0.5-0.6 | | | | | | | | | | |
| 1.0-1.1 | ↓ | | | ↓ | | | | | | |

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: DATE: 20/11/20 | CONSIGNMENT NOTE NO. | NAME: Kathy | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: JBS&G | TRANSPORT CO. | DATE: | |
| | | OF: | COOLER TEMP ..... deg C |
| NAME: DATE: | CONSIGNMENT NOTE NO. | NAME: DATE: 20/11 | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | OF: | COOLER TEMP ..... deg C |

**Container & Preservative Codes:** P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

# Chain of Custody

Eurofins 3 of 3

JBS&G

PROJECT NO.: 5983
PROJECT NAME: TAFE Kingswood
DATE NEEDED BY: Standard TAT
LABORATORY BATCH NO.:
SAMPLERS: SG
QC LEVEL: NEPM (2013)
PHONE: Sydney 02 8245 0300 | Perth 08 9488 0100 | Brisbane 07 3112 2688 | Melbourne 03 9642 0599 | Adelaide 08 8431 7113
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) ...sgunatunga@jbsg.com.au; (3) .....@jbsg.com.au
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | JB2A | JB2 | TOC/CEC/ % clay/ PH | BTEX | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BH09 0-0.1 | soil | 19/11/20 | | jar + bag tile | | X | | X | | | | |
| 0.3-0.4 | | | | | | | X | | | | | |
| 0.5-0.6 | | | | | | | | | | | | |
| 1.0-1.1 | | | | | | | | | | | | |
| 1.5-1.6 | | | | | | | | | | | | |
| BH10 0.2-0.3 | | 19/11/20 | | + bag | | X | | | | | | |
| 0.5-0.6 | | | | | | | | | | | | |
| 1.0-1.1 | | | | | | | X | | | | | |
| 1.5-1.6 | | | | | | | | | | | | |
| QA181120 | | 18/11/20 | | + bag | | X | | | | | | |
| QC181120 | | 18/11/20 | | + bag | | | | | | | | |
| TS/TB | water | 19/11/20 | | vials | | forward to Envirolab. | | | | | | |
| | | | | | | | | | X | | | |

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: DATE: 20/11/20 OF: JBS&G | CONSIGNMENT NOTE NO. TRANSPORT CO. | NAME: Kathy N DATE: OF: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C |
| NAME: DATE: OF: | CONSIGNMENT NOTE NO. TRANSPORT CO | NAME: DATE: 20/11 OF: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C |

**Container & Preservative Codes:** P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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

# CERTIFICATE OF ANALYSIS 256393

## Client Details

| | |
|---|---|
| **Client** | JBS & G (NSW & WA) Pty Ltd |
| **Attention** | S Gunatunge |
| **Address** | Level 1, 50 Margaret St, Sydney, NSW, 2000 |

## Sample Details

| | |
|---|---|
| **Your Reference** | **59831, Tafe Kingswood** |
| **Number of Samples** | 1 SOIL |
| **Date samples received** | 23/11/2020 |
| **Date completed instructions received** | 23/11/2020 |

## 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** | 30/11/2020 |
| **Date of Issue** | 27/11/2020 |

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**Asbestos Approved By**
Analysed by Asbestos Approved Identifier: Panika Wongchanda
Authorised by Asbestos Approved Signatory: Lucy Zhu

**Results Approved By**
Dragana Tomas, Senior Chemist
Loren Bardwell, Senior Chemist
Lucy Zhu, Asbestos Supervisor
Manju Dewendrage, Chemist

**Authorised By**

Nancy Zhang, Laboratory Manager

| vTRH(C6-C10)/BTEXN in Soil | | |
|---|---|---|
| Our Reference | | 256393-1 |
| Your Reference | UNITS | QC18/11/20 |
| Date Sampled | | 18/11/2020 |
| Type of sample | | SOIL |
| Date extracted | - | 24/11/2020 |
| Date analysed | - | 26/11/2020 |
| TRH $C_6$ - $C_9$ | mg/kg | <25 |
| TRH $C_6$ - $C_{10}$ | mg/kg | <25 |
| vTPH $C_6$ - $C_{10}$ less BTEX (F1) | mg/kg | <25 |
| Benzene | mg/kg | <0.2 |
| Toluene | mg/kg | <0.5 |
| Ethylbenzene | mg/kg | <1 |
| m+p-xylene | mg/kg | <2 |
| o-Xylene | mg/kg | <1 |
| naphthalene | mg/kg | <1 |
| Total +ve Xylenes | mg/kg | <3 |
| *Surrogate* aaa-Trifluorotoluene | % | 116 |

| svTRH (C10-C40) in Soil | | |
|---|---|---|
| Our Reference | | 256393-1 |
| Your Reference | UNITS | QC18/11/20 |
| Date Sampled | | 18/11/2020 |
| Type of sample | | SOIL |
| Date extracted | - | 24/11/2020 |
| Date analysed | - | 25/11/2020 |
| TRH $C_{10}$ - $C_{14}$ | mg/kg | <50 |
| TRH $C_{15}$ - $C_{28}$ | mg/kg | <100 |
| TRH $C_{29}$ - $C_{36}$ | mg/kg | <100 |
| TRH >$C_{10}$ -$C_{16}$ | mg/kg | <50 |
| TRH >$C_{16}$ -$C_{34}$ | mg/kg | <100 |
| TRH >$C_{34}$ -$C_{40}$ | mg/kg | <100 |
| Total +ve TRH (>C10-C40) | mg/kg | <50 |
| *Surrogate* o-Terphenyl | % | 103 |

| PAHs in Soil | | |
|---|---|---|
| Our Reference | | 256393-1 |
| Your Reference | UNITS | QC18/11/20 |
| Date Sampled | | 18/11/2020 |
| Type of sample | | SOIL |
| Date extracted | - | 24/11/2020 |
| Date analysed | - | 25/11/2020 |
| Naphthalene | mg/kg | <0.1 |
| Acenaphthylene | mg/kg | <0.1 |
| Acenaphthene | mg/kg | <0.1 |
| Fluorene | mg/kg | <0.1 |
| Phenanthrene | mg/kg | <0.1 |
| Anthracene | mg/kg | <0.1 |
| Fluoranthene | mg/kg | <0.1 |
| Pyrene | mg/kg | <0.1 |
| Benzo(a)anthracene | mg/kg | <0.1 |
| Chrysene | mg/kg | <0.1 |
| Benzo(b,j+k)fluoranthene | mg/kg | <0.2 |
| Benzo(a)pyrene | mg/kg | <0.05 |
| Indeno(1,2,3-c,d)pyrene | mg/kg | <0.1 |
| Dibenzo(a,h)anthracene | mg/kg | <0.1 |
| Benzo(g,h,i)perylene | mg/kg | <0.1 |
| Total +ve PAH's | mg/kg | <0.05 |
| Benzo(a)pyrene TEQ calc (zero) | mg/kg | <0.5 |
| Benzo(a)pyrene TEQ calc(half) | mg/kg | <0.5 |
| Benzo(a)pyrene TEQ calc(PQL) | mg/kg | <0.5 |
| *Surrogate p*-Terphenyl-d14 | % | 111 |

| Organochlorine Pesticides in soil | | |
|---|---|---|
| Our Reference | | 256393-1 |
| Your Reference | UNITS | QC18/11/20 |
| Date Sampled | | 18/11/2020 |
| Type of sample | | SOIL |
| Date extracted | - | 24/11/2020 |
| Date analysed | - | 25/11/2020 |
| 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 |
| Total +ve DDT+DDD+DDE | mg/kg | <0.1 |
| *Surrogate* TCMX | % | 97 |

| PCBs in Soil | | |
|---|---|---|
| Our Reference | | 256393-1 |
| Your Reference | UNITS | QC18/11/20 |
| Date Sampled | | 18/11/2020 |
| Type of sample | | SOIL |
| Date extracted | - | 24/11/2020 |
| Date analysed | - | 25/11/2020 |
| Aroclor 1016 | mg/kg | <0.1 |
| Aroclor 1221 | mg/kg | <0.1 |
| Aroclor 1232 | mg/kg | <0.1 |
| Aroclor 1242 | mg/kg | <0.1 |
| Aroclor 1248 | mg/kg | <0.1 |
| Aroclor 1254 | mg/kg | <0.1 |
| Aroclor 1260 | mg/kg | <0.1 |
| Total +ve PCBs (1016-1260) | mg/kg | <0.1 |
| *Surrogate* TCMX | % | 97 |

| Acid Extractable metals in soil | | |
|---|---|---|
| Our Reference | | 256393-1 |
| Your Reference | UNITS | QC18/11/20 |
| Date Sampled | | 18/11/2020 |
| Type of sample | | SOIL |
| Date prepared | - | 24/11/2020 |
| Date analysed | - | 24/11/2020 |
| Arsenic | mg/kg | 7 |
| Cadmium | mg/kg | <0.4 |
| Chromium | mg/kg | 18 |
| Copper | mg/kg | 23 |
| Lead | mg/kg | 15 |
| Mercury | mg/kg | <0.1 |
| Nickel | mg/kg | 15 |
| Zinc | mg/kg | 31 |

| Moisture | | |
|---|---|---|
| Our Reference | | 256393-1 |
| Your Reference | UNITS | QC18/11/20 |
| Date Sampled | | 18/11/2020 |
| Type of sample | | SOIL |
| Date prepared | - | 24/11/2020 |
| Date analysed | - | 25/11/2020 |
| Moisture | % | 30 |

| Asbestos ID - soils NEPM - ASB-001 | | |
|---|---|---|
| Our Reference | | 256393-1 |
| Your Reference | UNITS | QC18/11/20 |
| Date Sampled | | 18/11/2020 |
| Type of sample | | SOIL |
| Date analysed | - | 24/11/2020 |
| Sample mass tested | g | 471.08 |
| Sample Description | - | Brown coarse-grained soil & rocks |
| Asbestos ID in soil (AS4964) >0.1g/kg | - | No asbestos detected at reporting limit of 0.1g/kg<br><br>Organic fibres detected |
| Trace Analysis | - | No asbestos detected |
| Total Asbestos[#1] | g/kg | <0.1 |
| Asbestos ID in soil <0.1g/kg* | - | No visible asbestos detected |
| ACM >7mm Estimation* | g | – |
| FA and AF Estimation* | g | – |
| ACM >7mm Estimation* | %(w/w) | <0.01 |
| FA and AF Estimation*#2 | %(w/w) | <0.001 |

| 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.<br>Results reported denoted with * are outside our scope of NATA accreditation.<br><br>**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)<br><br>**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.<br><br>Estimation = Estimated asbestos weight<br><br>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.<br>F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. |
| **Org-020** | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.<br><br>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.<br><br>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-021** | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. |

| Method ID | Methodology Summary |
|---|---|
| **Org-021** | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.<br>Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs. |
| **Org-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.<br><br>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.<br>For soil results:-<br>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.<br>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.<br>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.<br>Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs. |
| **Org-023** | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. |
| **Org-023** | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. |
| **Org-023** | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.<br>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-3 | [NT] |
| Date extracted | - | | | 24/11/2020 | [NT] | [NT] | [NT] | [NT] | 24/11/2020 | [NT] |
| Date analysed | - | | | 26/11/2020 | [NT] | [NT] | [NT] | [NT] | 26/11/2020 | [NT] |
| TRH $C_6$ - $C_9$ | mg/kg | 25 | Org-023 | <25 | [NT] | [NT] | [NT] | [NT] | 119 | [NT] |
| TRH $C_6$ - $C_{10}$ | mg/kg | 25 | Org-023 | <25 | [NT] | [NT] | [NT] | [NT] | 119 | [NT] |
| Benzene | mg/kg | 0.2 | Org-023 | <0.2 | [NT] | [NT] | [NT] | [NT] | 108 | [NT] |
| Toluene | mg/kg | 0.5 | Org-023 | <0.5 | [NT] | [NT] | [NT] | [NT] | 116 | [NT] |
| Ethylbenzene | mg/kg | 1 | Org-023 | <1 | [NT] | [NT] | [NT] | [NT] | 128 | [NT] |
| m+p-xylene | mg/kg | 2 | Org-023 | <2 | [NT] | [NT] | [NT] | [NT] | 122 | [NT] |
| o-Xylene | mg/kg | 1 | Org-023 | <1 | [NT] | [NT] | [NT] | [NT] | 122 | [NT] |
| naphthalene | mg/kg | 1 | Org-023 | <1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| *Surrogate* aaa-Trifluorotoluene | % | | Org-023 | 128 | [NT] | [NT] | [NT] | [NT] | 124 | [NT] |

| QUALITY CONTROL: svTRH (C10-C40) in Soil | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-3 | [NT] |
| Date extracted | - | | | 24/11/2020 | [NT] | [NT] | [NT] | [NT] | 24/11/2020 | [NT] |
| Date analysed | - | | | 25/11/2020 | [NT] | [NT] | [NT] | [NT] | 25/11/2020 | [NT] |
| TRH $C_{10}$ - $C_{14}$ | mg/kg | 50 | Org-020 | <50 | [NT] | [NT] | [NT] | [NT] | 75 | [NT] |
| TRH $C_{15}$ - $C_{28}$ | mg/kg | 100 | Org-020 | <100 | [NT] | [NT] | [NT] | [NT] | 74 | [NT] |
| TRH $C_{29}$ - $C_{36}$ | mg/kg | 100 | Org-020 | <100 | [NT] | [NT] | [NT] | [NT] | 100 | [NT] |
| TRH >$C_{10}$ -$C_{16}$ | mg/kg | 50 | Org-020 | <50 | [NT] | [NT] | [NT] | [NT] | 75 | [NT] |
| TRH >$C_{16}$ -$C_{34}$ | mg/kg | 100 | Org-020 | <100 | [NT] | [NT] | [NT] | [NT] | 74 | [NT] |
| TRH >$C_{34}$ -$C_{40}$ | mg/kg | 100 | Org-020 | <100 | [NT] | [NT] | [NT] | [NT] | 100 | [NT] |
| *Surrogate* o-Terphenyl | % | | Org-020 | 93 | [NT] | [NT] | [NT] | [NT] | 100 | [NT] |

| QUALITY CONTROL: PAHs in Soil | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-3 | [NT] |
| Date extracted | - | | | 24/11/2020 | [NT] | [NT] | [NT] | [NT] | 24/11/2020 | [NT] |
| Date analysed | - | | | 25/11/2020 | [NT] | [NT] | [NT] | [NT] | 25/11/2020 | [NT] |
| Naphthalene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 81 | [NT] |
| Acenaphthylene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Acenaphthene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 97 | [NT] |
| Fluorene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 104 | [NT] |
| Phenanthrene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 113 | [NT] |
| Anthracene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Fluoranthene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 105 | [NT] |
| Pyrene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 105 | [NT] |
| Benzo(a)anthracene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Chrysene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 108 | [NT] |
| Benzo(b,j+k)fluoranthene | mg/kg | 0.2 | Org-022/025 | <0.2 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Benzo(a)pyrene | mg/kg | 0.05 | Org-022/025 | <0.05 | [NT] | [NT] | [NT] | [NT] | 100 | [NT] |
| Indeno(1,2,3-c,d)pyrene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Dibenzo(a,h)anthracene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Benzo(g,h,i)perylene | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| *Surrogate p*-Terphenyl-d14 | % | | Org-022/025 | 108 | [NT] | [NT] | [NT] | [NT] | 96 | [NT] |

| QUALITY CONTROL: Organochlorine Pesticides in soil | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-3 | [NT] |
| Date extracted | - | | | 24/11/2020 | [NT] | [NT] | [NT] | [NT] | 24/11/2020 | [NT] |
| Date analysed | - | | | 25/11/2020 | [NT] | [NT] | [NT] | [NT] | 25/11/2020 | [NT] |
| alpha-BHC | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 97 | [NT] |
| HCB | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| beta-BHC | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 96 | [NT] |
| gamma-BHC | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Heptachlor | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 85 | [NT] |
| delta-BHC | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Aldrin | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 103 | [NT] |
| Heptachlor Epoxide | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 101 | [NT] |
| gamma-Chlordane | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| alpha-chlordane | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Endosulfan I | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| pp-DDE | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 103 | [NT] |
| Dieldrin | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 101 | [NT] |
| Endrin | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 93 | [NT] |
| Endosulfan II | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| pp-DDD | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 68 | [NT] |
| Endrin Aldehyde | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| pp-DDT | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Endosulfan Sulphate | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | 82 | [NT] |
| Methoxychlor | mg/kg | 0.1 | Org-022/025 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| *Surrogate* TCMX | % | | Org-022/025 | 94 | [NT] | [NT] | [NT] | [NT] | 79 | [NT] |

| QUALITY CONTROL: PCBs in Soil | | | | | Duplicate | | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-3 | [NT] |
| Date extracted | - | | | 24/11/2020 | [NT] | [NT] | [NT] | [NT] | 24/11/2020 | [NT] |
| Date analysed | - | | | 25/11/2020 | [NT] | [NT] | [NT] | [NT] | 25/11/2020 | [NT] |
| Aroclor 1016 | mg/kg | 0.1 | Org-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Aroclor 1221 | mg/kg | 0.1 | Org-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Aroclor 1232 | mg/kg | 0.1 | Org-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Aroclor 1242 | mg/kg | 0.1 | Org-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Aroclor 1248 | mg/kg | 0.1 | Org-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| Aroclor 1254 | mg/kg | 0.1 | Org-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | 100 | [NT] |
| Aroclor 1260 | mg/kg | 0.1 | Org-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | [NT] | [NT] |
| *Surrogate* TCMX | % | | Org-021 | 94 | [NT] | [NT] | [NT] | [NT] | 79 | [NT] |

| QUALITY CONTROL: Acid Extractable metals in soil | | | | | | Duplicate | | | Spike Recovery % | |
|---|---|---|---|---|---|---|---|---|---|---|
| Test Description | Units | PQL | Method | Blank | # | Base | Dup. | RPD | LCS-3 | [NT] |
| Date prepared | - | | | 24/11/2020 | [NT] | [NT] | [NT] | [NT] | 24/11/2020 | [NT] |
| Date analysed | - | | | 24/11/2020 | [NT] | [NT] | [NT] | [NT] | 24/11/2020 | [NT] |
| Arsenic | mg/kg | 4 | Metals-020 | <4 | [NT] | [NT] | [NT] | [NT] | 106 | [NT] |
| Cadmium | mg/kg | 0.4 | Metals-020 | <0.4 | [NT] | [NT] | [NT] | [NT] | 105 | [NT] |
| Chromium | mg/kg | 1 | Metals-020 | <1 | [NT] | [NT] | [NT] | [NT] | 103 | [NT] |
| Copper | mg/kg | 1 | Metals-020 | <1 | [NT] | [NT] | [NT] | [NT] | 107 | [NT] |
| Lead | mg/kg | 1 | Metals-020 | <1 | [NT] | [NT] | [NT] | [NT] | 104 | [NT] |
| Mercury | mg/kg | 0.1 | Metals-021 | <0.1 | [NT] | [NT] | [NT] | [NT] | 106 | [NT] |
| Nickel | mg/kg | 1 | Metals-020 | <1 | [NT] | [NT] | [NT] | [NT] | 105 | [NT] |
| Zinc | mg/kg | 1 | Metals-020 | <1 | [NT] | [NT] | [NT] | [NT] | 120 | [NT] |

## Result Definitions

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

## Quality Control Definitions

| | |
|---|---|
| **Blank** | This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples. |
| **Duplicate** | This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable. |
| **Matrix Spike** | A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist. |
| **LCS (Laboratory Control Sample)** | This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample. |
| **Surrogate Spike** | Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples. |

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

## Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

## Report Comments

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Note: All samples analysed as received. However, sample 256393-1 is below the minimum 500mL sample volume as per National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013.

Envirolab 1 of 1

08269

# CHAIN OF CUSTODY

JBS&G

| | |
|---|---|
| PROJECT NO.: 59831 | LABORATORY BATCH NO.: |
| PROJECT NAME: TAFE Kingswood | SAMPLERS: SG |
| DATE NEEDED BY: Standard TAT | QC LEVEL: NEPM (2013) |

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) ..sgunatunge.....@jbsg.com.au; (3) .....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | SA | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|
| QC18/11/20 (1) | SOIL | 18/11/20 | | jar + bag + ice | | X | | | |

ENVIROLAB

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

Job No: 256393
Date Received: 23/11/2020
Time Received: 14:20
Received By: [illegible]
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: DEPO DATE: 20/11/20 | CONSIGNMENT NOTE NO. | NAME: | COOLER SEAL – Yes ✓ No ..... Intact ✓ Broken ..... |
| OF: JBS&G | TRANSPORT CO. | DATE: OF: 14:20 | COOLER TEMP 16.8 deg C |
| NAME: DATE: | CONSIGNMENT NOTE NO. | NAME: DATE: OF: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | | COOLER TEMP ..... deg C |

**Container & Preservative Codes:** P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

**JBS & G Australia (NSW) P/L**
**Level 1, 50 Margaret St**
**Sydney**
**NSW 2000**

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

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

**Attention:** **Sahani Gunatunge**

**Report** **759667-W**
Project name KINGSWOOD
Project ID 59831
Received Date Nov 26, 2020

| **Client Sample ID** | | | **BH01** | **TB** | **TS** |
|---|---|---|---|---|---|
| **Sample Matrix** | | | **Water** | **Water** | **Water** |
| **Eurofins Sample No.** | | | **S20-No47692** | **S20-No47695** | **S20-No47696** |
| **Date Sampled** | | | **Nov 26, 2020** | **Nov 26, 2020** | **Nov 26, 2020** |
| Test/Reference | LOR | Unit | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | |
| TRH C6-C9 | 0.02 | mg/L | < 0.02 | - | - |
| TRH C10-C14 | 0.05 | mg/L | 0.83 | - | - |
| TRH C15-C28 | 0.1 | mg/L | < 0.1 | - | - |
| TRH C29-C36 | 0.1 | mg/L | < 0.1 | - | - |
| TRH C10-C36 (Total) | 0.1 | mg/L | 0.83 | - | - |
| **BTEX** | | | | | |
| Benzene | 0.001 | mg/L | < 0.001 | < 0.001 | - |
| Toluene | 0.001 | mg/L | < 0.001 | < 0.001 | - |
| Ethylbenzene | 0.001 | mg/L | < 0.001 | < 0.001 | - |
| m&p-Xylenes | 0.002 | mg/L | < 0.002 | < 0.002 | - |
| o-Xylene | 0.001 | mg/L | < 0.001 | < 0.001 | - |
| Xylenes - Total* | 0.003 | mg/L | < 0.003 | < 0.003 | - |
| 4-Bromofluorobenzene (surr.) | 1 | % | 103 | 102 | - |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | |
| Naphthalene[N02] | 0.01 | mg/L | < 0.01 | - | - |
| TRH C6-C10 | 0.02 | mg/L | < 0.02 | - | - |
| TRH C6-C10 less BTEX (F1)[N04] | 0.02 | mg/L | < 0.02 | - | - |
| TRH >C10-C16 | 0.05 | mg/L | 0.83 | - | - |
| TRH >C10-C16 less Naphthalene (F2)[N01] | 0.05 | mg/L | 0.83 | - | - |
| TRH >C16-C34 | 0.1 | mg/L | < 0.1 | - | - |
| TRH >C34-C40 | 0.1 | mg/L | < 0.1 | - | - |
| TRH >C10-C40 (total)* | 0.1 | mg/L | 0.83 | - | - |
| **Polycyclic Aromatic Hydrocarbons (Trace level)** | | | | | |
| Acenaphthene | 0.00001 | mg/L | < 0.00001 | - | - |
| Acenaphthylene | 0.00001 | mg/L | < 0.00001 | - | - |
| Anthracene | 0.00001 | mg/L | < 0.00001 | - | - |
| Benz(a)anthracene | 0.00001 | mg/L | < 0.00001 | - | - |
| Benzo(a)pyrene | 0.00001 | mg/L | < 0.00001 | - | - |
| Benzo(b&j)fluoranthene | 0.00001 | mg/L | < 0.00001 | - | - |
| Benzo(g.h.i)perylene | 0.00001 | mg/L | < 0.00001 | - | - |
| Benzo(k)fluoranthene | 0.00001 | mg/L | < 0.00001 | - | - |
| Chrysene | 0.00001 | mg/L | < 0.00001 | - | - |
| Dibenz(a.h)anthracene | 0.00001 | mg/L | < 0.00001 | - | - |
| Fluoranthene | 0.00001 | mg/L | < 0.00001 | - | - |
| Fluorene | 0.00001 | mg/L | < 0.00001 | - | - |

| Client Sample ID | | | BH01 | TB | TS |
|---|---|---|---|---|---|
| Sample Matrix | | | Water | Water | Water |
| Eurofins Sample No. | | | S20-No47692 | S20-No47695 | S20-No47696 |
| Date Sampled | | | Nov 26, 2020 | Nov 26, 2020 | Nov 26, 2020 |
| Test/Reference | LOR | Unit | | | |
| **Polycyclic Aromatic Hydrocarbons (Trace level)** | | | | | |
| Indeno(1.2.3-cd)pyrene | 0.00001 | mg/L | < 0.00001 | - | - |
| Naphthalene | 0.00001 | mg/L | 0.00016 | - | - |
| Phenanthrene | 0.00001 | mg/L | < 0.00001 | - | - |
| Pyrene | 0.00001 | mg/L | < 0.00001 | - | - |
| Total PAH* | 0.00001 | mg/L | 0.00016 | - | - |
| 2-Fluorobiphenyl (surr.) | 1 | % | 138 | - | - |
| p-Terphenyl-d14 (surr.) | 1 | % | 115 | - | - |
| **Heavy Metals** | | | | | |
| Arsenic (filtered) | 0.001 | mg/L | < 0.001 | - | - |
| Cadmium (filtered) | 0.0002 | mg/L | < 0.0002 | - | - |
| Chromium (filtered) | 0.001 | mg/L | 0.001 | - | - |
| Copper (filtered) | 0.001 | mg/L | 0.004 | - | - |
| Lead (filtered) | 0.001 | mg/L | < 0.001 | - | - |
| Mercury (filtered) | 0.0001 | mg/L | < 0.0001 | - | - |
| Nickel (filtered) | 0.001 | mg/L | 0.003 | - | - |
| Zinc (filtered) | 0.005 | mg/L | 0.14 | - | - |
| **BTEX** | | | | | |
| Benzene | 1 | % | - | - | 100 |
| Ethylbenzene | 1 | % | - | - | 99 |
| m&p-Xylenes | 1 | % | - | - | 110 |
| o-Xylene | 1 | % | - | - | 94 |
| Toluene | 1 | % | - | - | 100 |
| Xylenes - Total | 1 | % | - | - | 98 |
| 4-Bromofluorobenzene (surr.) | 1 | % | - | - | 123 |

## Sample History

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

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

| Description | Testing Site | Extracted | Holding Time |
|---|---|---|---|
| Total Recoverable Hydrocarbons - 1999 NEPM Fractions | Melbourne | Dec 01, 2020 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| BTEX | Sydney | Nov 26, 2020 | 14 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Sydney | Nov 26, 2020 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Total Recoverable Hydrocarbons - 2013 NEPM Fractions | Melbourne | Dec 01, 2020 | 7 Days |
| - Method: LTM-ORG-2010 TRH C6-C40 | | | |
| Polycyclic Aromatic Hydrocarbons (Trace level) | Melbourne | Dec 01, 2020 | 7 Days |
| - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water (trace) | | | |
| Metals M8 filtered | Sydney | Nov 26, 2020 | 28 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Australia**

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Perth**
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

**New Zealand**

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

**Company Name:** JBS & G Australia (NSW) P/L
**Address:** Level 1, 50 Margaret St
Sydney
NSW 2000

**Project Name:** KINGSWOOD
**Project ID:** 59831

**Order No.:**
**Report #:** 759667
**Phone:** 02 8245 0300
**Fax:**

**Received:** Nov 26, 2020 6:35 PM
**Due:** Dec 3, 2020
**Priority:** 5 Day
**Contact Name:** Sahani Gunatunge

**Eurofins Analytical Services Manager : Ursula Long**

| Sample Detail | | | | | | HOLD | BTEX | BTEX | Eurofins Suite B7 (filtered metals/PAH trace level) |
|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | | | | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | X | X | X | X |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | |
| **Mayfield Laboratory** | | | | | | | | | |
| **External Laboratory** | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | |
| 1 | BH01 | Nov 26, 2020 | | Water | S20-No47692 | | | | X |
| 2 | QCW01 | Nov 26, 2020 | | Water | S20-No47693 | X | | | |
| 3 | QAW01 | Nov 26, 2020 | | Water | S20-No47694 | X | | | |
| 4 | TB | Nov 26, 2020 | | Water | S20-No47695 | | X | | |
| 5 | TS | Nov 26, 2020 | | Water | S20-No47696 | | | X | |
| **Test Counts** | | | | | | 2 | 1 | 1 | 1 |

## Internal Quality Control Review and Glossary

### General

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

### Holding Times

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

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

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

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

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

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

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

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

### Terms

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

### QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

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

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

### QC Data General Comments

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

**Quality Control Results**

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | | | |
| TRH C6-C9 | 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** | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | | |
| Naphthalene | mg/L | < 0.01 | | | 0.01 | Pass | |
| TRH C6-C10 | mg/L | < 0.02 | | | 0.02 | Pass | |
| **Method Blank** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons (Trace level)** | | | | | | | |
| Acenaphthene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Acenaphthylene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Anthracene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Benz(a)anthracene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Benzo(a)pyrene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Benzo(b&j)fluoranthene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Benzo(g.h.i)perylene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Benzo(k)fluoranthene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Chrysene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Dibenz(a.h)anthracene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Fluoranthene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Fluorene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Indeno(1.2.3-cd)pyrene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Naphthalene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Phenanthrene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Pyrene | mg/L | < 0.00001 | | | 0.00001 | Pass | |
| Total PAH* | mg/L | - | | | 0.00001 | N/A | |
| **Method Blank** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic (filtered) | mg/L | < 0.001 | | | 0.001 | Pass | |
| Cadmium (filtered) | mg/L | < 0.0002 | | | 0.0002 | Pass | |
| Chromium (filtered) | mg/L | < 0.001 | | | 0.001 | Pass | |
| Copper (filtered) | mg/L | < 0.001 | | | 0.001 | Pass | |
| Lead (filtered) | mg/L | < 0.001 | | | 0.001 | Pass | |
| Mercury (filtered) | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Nickel (filtered) | mg/L | < 0.001 | | | 0.001 | Pass | |
| Zinc (filtered) | mg/L | < 0.005 | | | 0.005 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | | | | |
| TRH C6-C9 | % | 90 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **BTEX** | | | | | | | |
| Benzene | % | 87 | | | 70-130 | Pass | |
| Toluene | % | 84 | | | 70-130 | Pass | |
| Ethylbenzene | % | 90 | | | 70-130 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| m&p-Xylenes | % | 89 | | | 70-130 | Pass | |
| o-Xylene | % | 88 | | | 70-130 | Pass | |
| Xylenes - Total* | % | 88 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | | | | |
| Naphthalene | % | 99 | | | 70-130 | Pass | |
| TRH C6-C10 | % | 91 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Polycyclic Aromatic Hydrocarbons (Trace level)** | | | | | | | |
| Acenaphthene | % | 82 | | | 70-130 | Pass | |
| Acenaphthylene | % | 91 | | | 70-130 | Pass | |
| Anthracene | % | 81 | | | 70-130 | Pass | |
| Benz(a)anthracene | % | 106 | | | 70-130 | Pass | |
| Benzo(a)pyrene | % | 83 | | | 70-130 | Pass | |
| Benzo(b&j)fluoranthene | % | 80 | | | 70-130 | Pass | |
| Benzo(g.h.i)perylene | % | 96 | | | 70-130 | Pass | |
| Benzo(k)fluoranthene | % | 75 | | | 70-130 | Pass | |
| Chrysene | % | 88 | | | 70-130 | Pass | |
| Dibenz(a.h)anthracene | % | 78 | | | 70-130 | Pass | |
| Fluoranthene | % | 94 | | | 70-130 | Pass | |
| Fluorene | % | 87 | | | 70-130 | Pass | |
| Indeno(1.2.3-cd)pyrene | % | 105 | | | 70-130 | Pass | |
| Naphthalene | % | 96 | | | 70-130 | Pass | |
| Phenanthrene | % | 76 | | | 70-130 | Pass | |
| Pyrene | % | 73 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic (filtered) | % | 103 | | | 80-120 | Pass | |
| Cadmium (filtered) | % | 107 | | | 80-120 | Pass | |
| Chromium (filtered) | % | 107 | | | 80-120 | Pass | |
| Copper (filtered) | % | 107 | | | 80-120 | Pass | |
| Lead (filtered) | % | 104 | | | 80-120 | Pass | |
| Mercury (filtered) | % | 114 | | | 80-120 | Pass | |
| Nickel (filtered) | % | 108 | | | 80-120 | Pass | |
| Zinc (filtered) | % | 107 | | | 80-120 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | Result 1 | | | | | |
| TRH C6-C9 | S20-No47923 | NCP | % | 108 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **BTEX** | | | | Result 1 | | | | | |
| Benzene | S20-No47923 | NCP | % | 100 | | | 70-130 | Pass | |
| Toluene | S20-No47923 | NCP | % | 95 | | | 70-130 | Pass | |
| Ethylbenzene | S20-No47923 | NCP | % | 100 | | | 70-130 | Pass | |
| m&p-Xylenes | S20-No47923 | NCP | % | 99 | | | 70-130 | Pass | |
| o-Xylene | S20-No47923 | NCP | % | 100 | | | 70-130 | Pass | |
| Xylenes - Total* | S20-No47923 | NCP | % | 99 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | Result 1 | | | | | |
| Naphthalene | S20-No47923 | NCP | % | 103 | | | 70-130 | Pass | |
| TRH C6-C10 | S20-No47923 | NCP | % | 109 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic (filtered) | S20-De02951 | NCP | % | 98 | | | 75-125 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| Cadmium (filtered) | S20-De02951 | NCP | % | 99 | | | 75-125 | Pass | |
| Chromium (filtered) | S20-De02951 | NCP | % | 97 | | | 75-125 | Pass | |
| Copper (filtered) | S20-De02951 | NCP | % | 94 | | | 75-125 | Pass | |
| Lead (filtered) | S20-De02951 | NCP | % | 92 | | | 75-125 | Pass | |
| Mercury (filtered) | S20-De02951 | NCP | % | 96 | | | 75-125 | Pass | |
| Nickel (filtered) | S20-De02951 | NCP | % | 97 | | | 75-125 | Pass | |
| Zinc (filtered) | S20-De02951 | NCP | % | 95 | | | 75-125 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 1999 NEPM Fractions** | | | | Result 1 | Result 2 | RPD | | | |
| TRH C6-C9 | S20-No47922 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **BTEX** | | | | Result 1 | Result 2 | RPD | | | |
| Benzene | S20-No47922 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Toluene | S20-No47922 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Ethylbenzene | S20-No47922 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| m&p-Xylenes | S20-No47922 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| o-Xylene | S20-No47922 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Xylenes - Total* | S20-No47922 | NCP | mg/L | < 0.003 | < 0.003 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Total Recoverable Hydrocarbons - 2013 NEPM Fractions** | | | | Result 1 | Result 2 | RPD | | | |
| Naphthalene | S20-No47922 | NCP | mg/L | < 0.01 | < 0.01 | <1 | 30% | Pass | |
| TRH C6-C10 | S20-No47922 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic (filtered) | S20-De02823 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Cadmium (filtered) | S20-De02823 | NCP | mg/L | < 0.0002 | < 0.0002 | <1 | 30% | Pass | |
| Chromium (filtered) | S20-De02823 | NCP | mg/L | 0.001 | 0.001 | 4.0 | 30% | Pass | |
| Copper (filtered) | S20-De02823 | NCP | mg/L | 0.005 | 0.005 | 2.0 | 30% | Pass | |
| Lead (filtered) | S20-De02823 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Mercury (filtered) | S20-De02823 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Nickel (filtered) | S20-De02823 | NCP | mg/L | 0.002 | 0.002 | 6.0 | 30% | Pass | |
| Zinc (filtered) | S20-De02823 | NCP | mg/L | 0.026 | 0.026 | 1.0 | 30% | Pass | |

## Comments

### Sample Integrity

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

### Qualifier Codes/Comments

| Code | Description |
|---|---|
| N01 | F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis). |
| N02 | Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid. |
| N04 | F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes. |

### Authorised By

| | |
|---|---|
| Asim Khan | Analytical Services Manager |
| Gabriele Cordero | Senior Analyst-Metal (NSW) |
| Joseph Edouard | Senior Analyst-Organic (VIC) |

**Glenn Jackson**

**General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

eurofins | Environment Testing

ABN: 50 005 085 521 www.eurofins.com.au EnviroSales@eurofins.com

**Australia**

**Melbourne**
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

**Sydney**
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

**Brisbane**
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

**Perth**
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

**Newcastle**
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

**New Zealand**

**Auckland**
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

**Christchurch**
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

# Sample Receipt Advice

| | |
|---|---|
| **Company name:** | JBS & G Australia (NSW) P/L |
| **Contact name:** | Sahani Gunatunge |
| **Project name:** | KINGSWOOD |
| **Project ID:** | 59831 |
| **Turnaround time:** | 5 Day |
| **Date/Time received** | Nov 26, 2020 6:35 PM |
| **Eurofins reference** | 759667 |

## Sample Information

| | |
|---|---|
| ✓ | A detailed list of analytes logged into our LIMS, is included in the attached summary table. |
| ✓ | Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 3.2 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. |
| X | Split sample sent to requested external lab. |
| X | Some samples have been subcontracted. |
| N/A | Custody Seals intact (if used). |

## Notes

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:

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

Results will be delivered electronically via email to Sahani Gunatunge - sgunatunge@jbsg.com.au.

Global Leader - Results you can trust

017697

# CHAIN OF CUSTODY

Eurofins Ioff

JBS&G

| | |
|---|---|
| PROJECT NO.: 59831 | LABORATORY BATCH NO.: |
| PROJECT NAME: Kingswood | SAMPLERS: MW |
| DATE NEEDED BY: STD | QC LEVEL: NEPM (2013) |

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) Stevestange@jbsg.com.au; (3) mnaljain@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | Heavy Metals | PAHs (Benzo) | TRH | BTEX | OCP/OPP | TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | TYPE OF ASBESTOS ANALYSIS: NEPM/WA | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BH01 | water | 26/11/20 | | 1L Ambers, vials, HM | | X | X | X | X | | | | |
| ~~DW01~~ DCW01 | ↓ | | | ↓ | | | | | | X | | | |
| DAW01 | | | | | | | | | | X | | | |
| TB/TB | | | | vials x ice | | | | | X | | | | |

| RELINQUISHED BY: | METHOD OF SHIPMENT: | RECEIVED BY: | FOR RECEIVING LAB USE ONLY: |
|---|---|---|---|
| NAME: M Nal DATE: 26/11/20 | CONSIGNMENT NOTE NO. | NAME: M BIRKETT | COOLER SEAL – Yes.....✓..... No ..... Intact ..... Broken ..... |
| OF: JBS&G | TRANSPORT CO. | DATE: OF: 26/11/20 6:35pm | COOLER TEMP 3.1 deg C |
| NAME: DATE: | CONSIGNMENT NOTE NO. | NAME: DATE: OF: | COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... |
| OF: | TRANSPORT CO | | COOLER TEMP ..... deg C |

**Container & Preservative Codes:** P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

759667

# Appendix O Statistical Analyses

| | 0 | 1 |
|---|---|---|
| 1 | | Nickel (mg/kg) |
| 2 | BH01 0.2-0.3 | 18 |
| 3 | BH01 0.5-0.6 | 16 |
| 4 | BH02 0-0.1 | 22 |
| 5 | BH02 1.0-1.1 | 35 |
| 6 | BH03 0.2-0.3 | 16 |
| 7 | BH04 0.2-0.3 | 21 |
| 8 | BH04 1.5-1.6 | 41 |
| 9 | BH09 0.5-0.6 | 42 |
| 10 | BH09 0-0.1 | 27 |
| 11 | BH10 0.2-0.3 | 19 |
| 12 | BH10 1.0-1.1 | 11 |
| 13 | HA01 0.5-0.6 | 41 |
| 14 | HA02 0.2-0.3 | 24 |
| 15 | HA03 0-0.1 | 25 |
| 16 | HA04 0.5-0.6 | 21 |

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | UCL Statistics for Uncensored Full Data Sets | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | User Selected Options | | | | | | | | | | | |
| 4 | Date/Time of Computation | 8/12/2020 4:24:02 PM | | | | | | | | | | |
| 5 | From File | WorkSheet.xls | | | | | | | | | | |
| 6 | Full Precision | OFF | | | | | | | | | | |
| 7 | Confidence Coefficient | 95% | | | | | | | | | | |
| 8 | Number of Bootstrap Operations | 2000 | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | C1 | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | General Statistics | | | | | | | | | | | |
| 14 | Total Number of Observations | | | | | 15 | | Number of Distinct Observations | | | | 12 |
| 15 | | | | | | | | Number of Missing Observations | | | | 1 |
| 16 | Minimum | | | | | 11 | | Mean | | | | 25.27 |
| 17 | Maximum | | | | | 42 | | Median | | | | 22 |
| 18 | SD | | | | | 9.96 | | Std. Error of Mean | | | | 2.572 |
| 19 | Coefficient of Variation | | | | | 0.394 | | Skewness | | | | 0.674 |
| 20 | | | | | | | | | | | | |
| 21 | Normal GOF Test | | | | | | | | | | | |
| 22 | Shapiro Wilk Test Statistic | | | | | 0.893 | | Shapiro Wilk GOF Test | | | | |
| 23 | 5% Shapiro Wilk Critical Value | | | | | 0.881 | | Data appear Normal at 5% Significance Level | | | | |
| 24 | Lilliefors Test Statistic | | | | | 0.177 | | Lilliefors GOF Test | | | | |
| 25 | 5% Lilliefors Critical Value | | | | | 0.229 | | Data appear Normal at 5% Significance Level | | | | |
| 26 | Data appear Normal at 5% Significance Level | | | | | | | | | | | |
| 27 | | | | | | | | | | | | |
| 28 | Assuming Normal Distribution | | | | | | | | | | | |
| 29 | 95% Normal UCL | | | | | | | 95% UCLs (Adjusted for Skewness) | | | | |
| 30 | 95% Student's-t UCL | | | | | 29.8 | | 95% Adjusted-CLT UCL (Chen-1995) | | | | 29.98 |
| 31 | | | | | | | | 95% Modified-t UCL (Johnson-1978) | | | | 29.87 |
| 32 | | | | | | | | | | | | |
| 33 | Gamma GOF Test | | | | | | | | | | | |
| 34 | A-D Test Statistic | | | | | 0.438 | | Anderson-Darling Gamma GOF Test | | | | |
| 35 | 5% A-D Critical Value | | | | | 0.738 | | Detected data appear Gamma Distributed at 5% Significance Level | | | | |
| 36 | K-S Test Statistic | | | | | 0.137 | | Kolmogrov-Smirnoff Gamma GOF Test | | | | |
| 37 | 5% K-S Critical Value | | | | | 0.222 | | Detected data appear Gamma Distributed at 5% Significance Level | | | | |
| 38 | Detected data appear Gamma Distributed at 5% Significance Level | | | | | | | | | | | |
| 39 | | | | | | | | | | | | |
| 40 | Gamma Statistics | | | | | | | | | | | |
| 41 | k hat (MLE) | | | | | 7.163 | | k star (bias corrected MLE) | | | | 5.775 |
| 42 | Theta hat (MLE) | | | | | 3.527 | | Theta star (bias corrected MLE) | | | | 4.375 |
| 43 | nu hat (MLE) | | | | | 214.9 | | nu star (bias corrected) | | | | 173.2 |
| 44 | MLE Mean (bias corrected) | | | | | 25.27 | | MLE Sd (bias corrected) | | | | 10.51 |
| 45 | | | | | | | | Approximate Chi Square Value (0.05) | | | | 143.8 |
| 46 | Adjusted Level of Significance | | | | | 0.0324 | | Adjusted Chi Square Value | | | | 140.5 |
| 47 | | | | | | | | | | | | |
| 48 | Assuming Gamma Distribution | | | | | | | | | | | |
| 49 | 95% Approximate Gamma UCL (use when n>=50)) | | | | | 30.44 | | 95% Adjusted Gamma UCL (use when n<50) | | | | 31.15 |
| 50 | | | | | | | | | | | | |
| 51 | Lognormal GOF Test | | | | | | | | | | | |
| 52 | Shapiro Wilk Test Statistic | | | | | 0.947 | | Shapiro Wilk Lognormal GOF Test | | | | |
| 53 | 5% Shapiro Wilk Critical Value | | | | | 0.881 | | Data appear Lognormal at 5% Significance Level | | | | |
| 54 | Lilliefors Test Statistic | | | | | 0.122 | | Lilliefors Lognormal GOF Test | | | | |
| 55 | 5% Lilliefors Critical Value | | | | | 0.229 | | Data appear Lognormal at 5% Significance Level | | | | |
| 56 | Data appear Lognormal at 5% Significance Level | | | | | | | | | | | |
| 57 | | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 58 | Lognormal Statistics | | | | | | | | | | |
| 59 | | | | Minimum of Logged Data | 2.398 | | | Mean of logged Data | 3.158 | | |
| 60 | | | | Maximum of Logged Data | 3.738 | | | SD of logged Data | 0.392 | | |
| 61 | | | | | | | | | | | |
| 62 | Assuming Lognormal Distribution | | | | | | | | | | |
| 63 | | | | 95% H-UCL | 31.21 | | | 90% Chebyshev (MVUE) UCL | 33.1 | | |
| 64 | | | | 95% Chebyshev (MVUE) UCL | 36.65 | | | 97.5% Chebyshev (MVUE) UCL | 41.57 | | |
| 65 | | | | 99% Chebyshev (MVUE) UCL | 51.24 | | | | | | |
| 66 | | | | | | | | | | | |
| 67 | Nonparametric Distribution Free UCL Statistics | | | | | | | | | | |
| 68 | Data appear to follow a Discernible Distribution at 5% Significance Level | | | | | | | | | | |
| 69 | | | | | | | | | | | |
| 70 | Nonparametric Distribution Free UCLs | | | | | | | | | | |
| 71 | | | | 95% CLT UCL | 29.5 | | | 95% Jackknife UCL | 29.8 | | |
| 72 | | | | 95% Standard Bootstrap UCL | 29.38 | | | 95% Bootstrap-t UCL | 30.16 | | |
| 73 | | | | 95% Hall's Bootstrap UCL | 29.6 | | | 95% Percentile Bootstrap UCL | 29.33 | | |
| 74 | | | | 95% BCA Bootstrap UCL | 29.67 | | | | | | |
| 75 | | | | 90% Chebyshev(Mean, Sd) UCL | 32.98 | | | 95% Chebyshev(Mean, Sd) UCL | 36.48 | | |
| 76 | | | | 97.5% Chebyshev(Mean, Sd) UCL | 41.33 | | | 99% Chebyshev(Mean, Sd) UCL | 50.86 | | |
| 77 | | | | | | | | | | | |
| 78 | Suggested UCL to Use | | | | | | | | | | |
| 79 | | | | 95% Student's-t UCL | 29.8 | | | | | | |
| 80 | | | | | | | | | | | |
| 81 | Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. | | | | | | | | | | |
| 82 | These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) | | | | | | | | | | |
| 83 | and Singh and Singh (2003). However, simulations results will not cover all Real World data sets. | | | | | | | | | | |
| 84 | For additional insight the user may want to consult a statistician. | | | | | | | | | | |
| 85 | | | | | | | | | | | |

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