Landcom

240-244 Beecroft Road
Epping NSW
Due Diligence

23 November 2017

54111/112461 Rev 0

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Abbreviations

Term	Definition
°C	Degrees Celsius
ABC	Average Background Concentration
ACL	Added Contaminant Limit
ACM	Asbestos Containing Material
AEC	Area of Environmental Control
AHD	Australian Height Datum
ANZECC/ARMCANZ	Australian and New Zealand Environment Conservation Council / Agriculture and Resource Management Council of Australia and New Zealand
ASS	Acid Sulfate Soils
BGL	Below Ground Level
BSB	Botany Sand Beds
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
CEC	Cation Exchange Capacity
CLM	Contaminated Land Management
COC	Chain of Custody0
COPC	Contaminants of Potential Concern
Council	Parramatta City Council
CSM	Conceptual Site Model
DBYD	Dial Before You Dig
DEC	Department of Environment and Conservation
DMR	Department of Mineral Resources
DO	Dissolved Oxygen
DOH	Department of Health
DP	Deposited Plan
DPI	Department of Primary Industries
DQI	Data Quality Indicators
DQO	Data Quality Objectives
DSI	Detailed Site Assessment
EC	Electrical Conductivity
EIL	Ecological Investigation Levels
EPA	Environmental Protection Authority
ESA	Environmental Site Assessment
ESL	Ecological Screening Level
HMS	Hazardous Material Survey
HIL	Health Investigation Level
HSL	Health Screening Level
JBS&G	JBS&G Australian Pty Ltd
LCS	Laboratory Control Sample
LEP	Local Environment Plan
LOR	Limit of Reporting
MC	Maximum Concentration
MGA	Map Grid of Australia
NOW	NSW Office of Water
NSW	New South Wales
OCP	Organochlorine Pesticide
OEH	Office of Environment and Heritage
ORP	Oxidation Reduction Potential
PAH	Polycyclic Aromatic Hydrocarbon
PARCCS	Precision, Accuracy, Representativeness, Comparability, Completeness, Sensitivity
PASS	Potential Acid Sulfate Soil
PCB	Polychlorinated Biphenyls
POEO	Protection of Environment Operations
PSI	Preliminary Site Assessment
QA/QC	Quality Assurance / Quality Control
R4	High Density Residential
RPD	Relative Percentage Difference

SD	Standard Deviation
SWNSW	SafeWork NSW
TEQ	Toxic Equivalence Quotient
TRH / TPH	Total Recoverable Hydrocarbons / Total Petroleum Hydrocarbon
UCL	Upper Confidence Limit
UGNSW	UrbanGrowth NSW
UST	Underground Storage Tank
VOC	Volatile Organic Compound

Executive Summary

JBS&G Australia Pty Ltd (JBS&G) was engaged by Landcom (formerly UrbanGrowth NSW, the client) on behalf of Transport for New South Wales (TfNSW) to prpovide environmental consulting services associated with the combined site contamination and geotechnical due diligence investigation at the property located at 240-244 Beecroft Road, Epping, NSW (the Site). The property is legally identified as Part Lot 22 in Deposited Plan (DP) 1180959 and occupies a total area of approximately 9200 m^2 as shown in **Figure 1** and **2**.

It is understood that the Site is to be transferred to the client as part of a future urban redevelopment associated with the North West Urban Transformation (NWUT) project. UGNSW requires due diligence Environmental Site Assessment (ESA) to determine the potential for contamination to be present at the Site to determine potential opportunities and constraints during redevelopment. It is understood that the client is assessing the Site for potential to be utilised for a high density residential land use.

The objective of the investigation was to provide a due diligence level evaluation of potential opportunities and constraints at the Site in relation to existing known and inferred site conditions as may exist in relation to site contamination.

The scope of the investigation included a desktop assessment of historical land use activities and regional environmental conditions; development of a conceptual site model (CSM) of potential contamination; documentation of a sampling analysis and quality plan (SAQP); implementation of the plan inclusive of field sampling of potentially impacted media and subsequently laboratory analysis of samples; evaluation of the resulting data against site specific health and ecological assessment criteria; and documentation of the resulting outcomes as this assessment report.

In accordance with the limitations in **Section 11**, the assessment has provided the following conclusions:

- The results of the sampling and laboratory analysis program have indicated that the Site soils, including both fill material and natural soils, are generally free from significant chemical contamination impact that would require future remediation/management activities;
- The highest heavy metal concentrations in groundwater were identified within samples taken from the upgradient sample locations indicating, in combination with the absence of significant heavy metal concentrations in soils at the Site, that the heavy metal concentrations originate from an off-site source or are indicative of geological characteristics in the broader area. Given the concentrations in groundwater entering the site and the minor nature of the exceedances of the groundwater criteria for health based assessment, specific management of groundwater contamination risks is not considered necessary at this stage;
- Trace concentrations of benzene were detected in the upgradient most groundwater monitoring location, representative of conditions entering the site from this direction. The reported groundwater benzene concentrations are considered not be indicative of significant contamination migration currently, or previously, occurring from this off-site source. Further, no sheen or odours were noted to be associated with the soil and/or groundwater at this location, that would represent an aesthetic concern with regard to future development of the site;
- Based on the proposed land use, the scope of work completed for this assessment, and the limitations presented in **Section 11**, it is considered that there are no outstanding contamination issues that would preclude redevelopment of the Site for the proposed land uses, subject to the management of the asbestos in fill material impacts and further

consideration of the nickel in soil concentrations with regard to ecological impacts during redevelopment of the Site.

1. Introduction

1.1 Introduction

JBS&G Australia Pty Ltd (JBS&G) was engaged by Landcom (formerly UrbanGrowth NSW, the client) on behalf of Transport for New South Wales (TfNSW) to provide environmental consulting services associated with the combined site contamination and geotechnical due diligence investigation at the property located at 240 - 244 Beecroft Road, Epping, NSW (the Site). The property is legally identified as Part Lot 22 in Deposited Plan (DP) 1180959 and occupies a total area of approximately 9200 m^2 as shown in **Figure 1** and **2**.

The Site is an irregular shaped parcel of land comprising a commercial building and car park facility and a construction operation/material lay down yard associated with the North West Rail Link Major Civil Construction Works (NWRL MCCW). The Site was occupied at the time of the investigation with current land uses including commercial (office) and construction activities. At the time of the investigation a construction operation/material lay down yard was occupied by the civil works contractor for the NWRL MCCW, North West Rapid Transit (NRT). Immediately south of the site boundary, a 7-Eleven service station and car wash facility were in operation.

It is understood that the Site is to be transferred to the client as part of a future urban redevelopment associated with the North West Urban Transformation (NWUT) project. UGNSW requires due diligence Environmental Site Assessment (ESA) to determine the potential for contamination to be present at the Site to assist with evaluation of potential opportunities and constraints for redevelopment of the site, inclusive of potential mixed use/ high density residential land uses.

This report details the findings of the due diligence ESA. This report has been developed in accordance with guidelines made or approved by the NSW Environment Protection Authority (EPA) and relevant Australian Standards.

1.2 Objectives

The objective of the investigation was to provide a due diligence level evaluation of potential opportunities and constraints at the Site in relation to existing known and inferred site conditions as may exist in relation to site contamination that may require management/remediation for the site to be suitable for the future proposed land use(s).

1.3 Scope of Works

To address the requirements of the *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme 2nd Edition*, Department of Environment and Conservation (DEC) (2006[1]), and other New South Wales (NSW) Environmental Protection Authority (EPA) endorsed contaminated land guidance, JBS&G conducted a full Phase 1 desktop site history assessment to document the Site's history and setting which comprised the following:

- 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 149(2&5) certificates obtained for the property;
    - Current and historical land title records;
    - Records of stored Dangerous Goods held by WorkCover;

[1] *'Contaminated Sites: Guidelines for the NSW Site Auditor Scheme 2nd Edition'*, Department of Environment and Conservation, ISBN 1 74137 859 1, April 2006, DEC (2006);

- Any relevant previous environmental and geotechnical reports made available by the client or identified to be available within the public domain;
- Historical aerial photographs obtained from the Department of Lands;
- Publicly available heritage records held by the Department of Planning and Environment and Council, where readily available;
- Records of environmental incidents, former environmental licences, or contaminated land notices or notifications, as held by the EPA; and
- Licensed groundwater bores present within a 1.5 km radius of the Site available on the online NSW Natural Resources Atlas.

- Review of the environmental setting including a review of topography, geology, hydrogeology and meteorology of the Site and surrounding areas;
- A detailed Site inspection to identify potential AECs and confirm desktop findings;
- Development and documentation of a conceptual site model (CSM) based on the available information;
- Development and documentation of a sampling and analysis quality plan (SAQP) with data quality objectives (DQOs) for the ESA in general accordance with relevant EPA guidelines;
- Implementation of a targeted soil and groundwater investigation program in accordance with the SAQP;
- Analysis of selected samples for a range of COPCs as identified during the PSI component of the investigations;
- Comparison of collected data against regulator published / endorsed investigation criteria to facilitate a due diligence level assessment of the potential opportunities and constraints at the Site in relation to existing known and inferred site conditions; and
- Preparation of an ESA report in general accordance with relevant EPA guidelines.

2. Site Condition and Surrounding Environment

2.1 Site Identification

The Site location is shown on **Figure 1**. The extent of the Site and associated cadastral boundaries are 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

Lots / DPs	Part Lot 22 in Deposited Plan (DP) 1180959
Address	240 - 244 Beecroft Road, Epping, NSW
Local Government Authority	City of Parramatta Council (formerly part of Hornsby LGA)
Approximate MGA Coordinates (MGA 56)	As shown on **Figure 2**
Site Zoning	High Density Residential (R4), Hornsby Local Environmental Plan, Hornsby (2013[2])
Current Use	Commercial (Office) & Construction Site
Previous Use	Commercial (Office, Dispatching), Industrial (Engineering, Agriculture) and Residential (Private Ownership)
Proposed Use	Mixed use/High Density Urban Residential
Site Area	Approximately 0.92 hectares (ha)

2.2 Site Description

A detailed site inspection was completed by Rohan Hammond of JB&SG on 30 August 2017, relevant details are documented below. A photographic log is presented in **Appendix A**.

The Site comprised an irregular parcel of land on the western side of Beecroft Road, in Epping, NSW. Ray Road also bound the Site to the west and the Site was bound to the south by a 7-Eleven Service Station. The northern boundary of the Site comprised a constructed stormwater drainage channel, in the alignment of a former natural tributary of Delvins Creek and the northern portion of the NRT construction/laydown yard. The Site comprised two distinct portions: the current 'TfNSW Office Building and Car Park' and the 'stockpiling yard'. The two site portions are discussed in the following sections.

TfNSW Office Building and Car Park (Western Site Portion)

The office building occupied the northwest portion of the Site (**Figure 2**). The TfNSW Office building comprises a three-storey commercial office building with ground level car parking. The structure was built into a well vegetated slope which formed the batter from the main site portion's topographic level to a constructed stormwater channel which bound the Site to the northwest. The northwest section of the basement level had been constructed using a suspended concrete slab was with a maximum height of approximately 5 m above ground level.

West of the building was a paved walkway which facilitated pedestrian access to the building, surrounded to the north and south by maintained gardens. Vegetative health within garden beds appeared to be good, with no overt signs of stress. Surficial soils were generally sealed by vegetation, although inspection of limited exposed surficial soils indicated that they comprised an imported organic rich sand. Access to the gardens was partially restricted via a combination of wire mesh and locked gate fencing.

The building condition was noted to be good, with no overt signs of deterioration (paint flaking, rust, degradation, etc.)

South of the TfNSW Office Building a concrete driveway existed, which allowed access from Ray Road to the basement level car park and the NRT contractor's car park to the south. The NRT contractor's car park was entirely asphalt paved at the time of the site inspection and fenced by wire mesh fencing.

[2] *'Hornsby Local Environmental Plan 2012'*, Hornsby Shire Council, 21 October 2016, Hornsby LEP (2013);

Rainwater is expected to migrate from this portion of the Site primarily via the onsite rooftop and pavement drainage infrastructure into the municipal stormwater system.

No evidence of bulk chemical or liquid storage (solvents, pesticides oils or waste liquids) was observed on this portion of the Site. Exposed soils were limited to a small proportion of soils within the garden areas. No odours or staining were observed within this portion of the Site. No groundwater wells were observed on this portion of the Site.

Stockpiling Yard (Eastern Site Portion)

The 'Stockpiling Yard' comprised a fully separated and secured portion of the Site on the western side of Beecroft Road, up to approximately 5 m below the adjoining street ground level. The boundary was retained by a brick wall inside the site extending from the central portion of the east site boundary to the south extent and then, inside the south site boundary in a generally westerly direction to the Ray Road site boundary. The service station and car wash facilities property to the south of the site had ground elevations of approximately 4 m higher than the site in the southeast extent, reducing to less than 0.5 m at the southwest site extent (Ray Road site boundary).

This portion of the Site comprised approximately 5700 m^2 of primarily material, tool and equipment storage associated with the NWRL MCCW works occurring to the north of the Site. Apart from the stored materials, the area was characterised by a central access road from the NWRL MCCW work site adjoining Beecroft Road, a warehouse structure, water treatment plant, concrete stockpiling and a large stockpile of ripped sandstone understood to have been won from works to the north of the Site. Internal access was facilitated by smaller internal auxiliary roads.

The water treatment plant on the southwest corner of the Site comprised a cordoned off area, sealed by concrete bunding, dedicated to the treatment of groundwater and construction water extracted from the NWRL MCCW excavation to the north of the Site. The water treatment plant encompassed a three-stage settlement tank which provided turbidity treated water to a treatment tank in the central portion of the area which amended water pH prior to discharge. The water treatment plant area housed significant quantities of bulk liquid chemicals (sulfuric acid, sodium hypochlorite solution, etc.) which were utilised throughout the water treatment process. Treated water is disposed of from the Site to an onsite stormwater inlet. Ground levels in this area were approximately 1 m to 1.5 m above the adjoining Ray Road site levels to the west, with the landscaped batter falling from the fence line to the site boundary. Vegetation comprised primarily large fauna which was appeared to be in good health. The ground surfaces of the batter were covered by a combination of garden mulch and intermittent weeds.

A large warehouse type structure and bulk construction material storage occupied the southern portion of the Site area. Discussions with NRT indicated that the warehouse was utilised for construction/building material storage, however access to the warehouse was not available.

The central portion of Stockpiling Yard included a dividing auxiliary access road, immediately adjacent to which the land was utilised as laydown storage. A 1000 m^3 covered stockpile of crushed sandstone, won from the rail tunnel excavation to the north of the Site was situated adjacent to the eastern boundary, fronting Beecroft Road. Additionally, a bunded area which contained small stockpiles of discarded excess concrete was located in this area of the Site.

The northern most portion of the site comprised cleared roadways which facilitated access to the NWRL MCCW shaft and the southern site portions. The roads were secured by concrete bollards, behind which small embankments were utilised to store additional excess construction materials.

Rainwater is expected to migrate from this portion of the Site primarily via onsite pavement drainage infrastructure into the municipal stormwater system in Ray Road.

No other evidence of bulk chemical or liquid storage was observed in this portion of the Site. Exposed soils were limited to a small proportion of soils forming the embankments adjoining the

main site portion to Beecroft Road. No odours, staining or stored wastes were observed within this portion of the Site.

2.3 Surrounding Land Use

The current land uses of adjacent properties or properties across adjacent roads are summarised below.

- North – The northern boundary of the Site is comprised of two constituents:
  - The Stockpiling Yard is bound to the north by the northern portion of the NWRL MCCW redevelopment compound and a small reserve for public recreation; and
  - The TfNSW Office Building abuts the stormwater drainage line, which has an approximately southwest-northeast orientation.

  Further to the north several high density residential properties existed followed by Edensor Street;
- East – To the east of the Site is Beecroft Road and then the T1 Northern and NSW TrainLink Central Coast and Newcastle line. The train line is followed by high density commercial and residential premises comprising numerous high rise buildings and an education facility;
- South – The Site is bound to the south by a 7-Eleven service station and car wash, beyond which was Carlingford Road and a residential high rise with ground floor restaurants/retail; and
- West – The Site is bound to the west by Ray Road. Further west of Ray Road, the primary land use comprised high density residential with numerous multi-storey apartment buildings present.

2.4 Topography

Review of topographic information obtained from the Spatial Information Exchange Viewer, LPI (2015[3]) regional topographic map indicated that the Site is located in a region characterised by undulating landforms. The site is located mid-slope on a north to northwest facing slope that falls overall toward Delvins Creek, north of the Site.

Review of the client provided topographical survey information, Project Surveyors (2017[4]) (**Appendix B**), indicates, site ground levels have an elevation profile grading from approximately 85 m Australian Height Datum (AHD) at the western and southern boundaries to 75 m AHD on the eastern boundary.

Local surrounding topography sloped generally down toward Ray Road, with Ray Road then falling toward the north. The site inspection confirmed that the topography on site appeared largely in agreement with the topographic survey plan provided by the client. It is noted the Site appeared to have been the subject of significant historical cut/fill activities associated with former developments within the site and also on surrounding properties.

The eastern embankment of the Site, adjoining Beecroft Road, was observed to be approximately 3 m above the central Stockpiling Yard portion of the Site. The southern and south-eastern boundaries of the Site were abutted by brick retaining walls forming raised garden beds which were approximately 2 – 3 m above the adjacent internal site levels. The Site grade generally sloped downward from the highest point (southern retaining wall) to the central site portion, following which the ground surface sloped upward toward the northern site boundary. The TfNSW office building was constructed into a steep slope which eventually met the stormwater drainage channel

[3] *'Spatial Information Exchange Viewer'*, NSW Land and Property Information, Accessed 15 July 2016, https://maps.six.nsw.gov.au/;
[4] *'Detail Survey – Ray Road, Epping (SMNUTP) 50545'*, Project Surveyors, 4 Spetember 2017, Project Surveyors (2017);

adjacent the northwest boundary. Site continues to fall beyond the boundary toward the lined stormwater channel beyond the site boundary.

2.5 Geology and Soils

Based on a client provided geotechnical long-section, Coffey Geotechnics (2012[5]) (**Appendix C**), the Site is understood to be underlain by a shallow layer of fill and then extremely weathered residual shale bedrock, ranging between 1 m and 5 m below ground level. Underlying the shale, fine-medium grained sandstone stratified with siltstone interbedding has been reported to a depth of investigation of 44.95 m bgl in the relevant area.

Reference to the 1:100 000 Geological Series Sheet for Sydney (DMR 1991[6]) indicates that the Site is underlain by Ashfield Shale of the Wianamatta Group of the Middle Triassic epoch. This unit is comprised of black to dark-grey shale and laminite. Ashfield Shale is underlain by Hawkesbury Sandstone.

Reference to the online ESPADE 2.0 tool hosted by the NSW Office of Environment and Heritage (OEH) (2017[7]) indicates the Site is within the Glenorie erosional soil landscape. This soil group typically occurs on undulating to rolling low hills on Wianamatta group shales characterised by local relief of 50-80 m and slopes of 5-20 %. The landscape is typically characterised by shallow to moderately deep (<100 cm) red podzolic soils on crests, moderately deep (70-150 cm) red and brown podzolic soils on upper slopes, deep (>200 cm) yellow podzolic soils and Gleyed podzolic soils along drainage lines. Soil limitations include high soil erosion hazards, localised impermeable highly plastic soil and the soil is moderately reactive.

Field borehole log installation details are provided in **Appendix D**, indicating that the natural soils encountered on the Site comprised a combination of sand, clayey sands and silty clays. Natural soils were underlain by sandstone, which was generally encountered at depths ranging from 0.5 m to 1.2 m bgl. The maximum depth achieved during the investigation was 6.0 m below the current ground levels.

2.6 Hydrology

As discussed in **Section 2.2**, the Site is largely covered by concrete, asphaltic pavements and building footprints. As such, surface water generated during periods of rainfall is anticipated to primarily enter the municipal stormwater system via discharge into onsite stormwater catchment infrastructure and adjoining Ray Road street stormwater before flowing into the Devlin Creek drainage line. Minor infiltration into the underlying porous soils and surface is expected to occur in areas of unsealed ground, to the extent reflective of ground slopes and surface soil permeability.

A constructed urban stormwater channel within the former natural Delvins Creek tributary alignment, bound the Site to the northwest which directed stormwater from the surrounding area to the nearest surface water body to the Site, Delvins Creek. The junction with Delvins Creek was approximately 550 m to the northeast of the northern Site boundary. Delvins Creek ultimately discharges to Lane Cove River, and then Parramatta River.

2.7 Hydrogeology

Registered groundwater bore information was obtained from the NSW Department of Primary Industries groundwater mapping tools (NSW DPI 2016[8]) (**Appendix E**). A review of the registered

[5] *'North West Rail Link Geotechnical Services Draft Diagrammatic Geotechnical Long Section – Sheet 1 of 9'*¸Coffey Geotechnics, 29 February 2012, Coffey Geotechnics (2012);
[6] '*Sydney 1:100 000 Geological Series Sheet 9030 (Edition 1)'.* Department of Mineral Resources, 1991 (DMR 1991);
[7] *'ESAPDE 2.0'*, NSW Office of Environment and heritage, Accessed 29 August 2017, OEH (2017);
[8] NSW Department of Primary Industries, 2015. Groundwater Monitoring Overview Map. Http://allwaterdata.water.nsw.gov.au/water.stm. Accessed 8 November 2016;

bore information indicated that there were 12 registered bores within a 1.5 km radius of the Site. Relevant details of registered bores have been summarised in **Table 2.2**.

It is noted that 9 registered bores, located within the 7-Eleven service station site (formerly a Mobil Oil service station) on the southern boundary of the Site, were identified as part of the search, however no relevant installation, geological or hydrogeological details were provided with the installation logs.

Table 2.2 Registered Groundwater Bore Search

Bore ID	Use	Property	Standing Water Level (m bgl)	Well Depth (m)	Encountered Geology Comments
GW110611	Monitoring	Peter Haig – 30 Bridge Street, Epping	7.50 (inferred)	10.00	Shallow fill to 0.5 m, moderately deep clay to 3.0 m, deep sandstone to 7.0 m and shale to installed depth
GW110622	Monitoring		7.50 (inferred)	10.00	Shallow fill to 0.5 m, moderately deep clay to 3.0 m, deep sandstone to 7.0 m and shale to installed depth
GW110663	Monitoring		7.50 (inferred)	10.00	Shallow fill to 0.5 m, moderately deep clay to 3.0 m, deep sandstone to 7.0 m and shale to installed depth
GW112765	Monitoring	Mobil Oil Australia – Cnr. Beecroft & Carlingford Rd, Epping	-	-	-
GW112766	Monitoring		-	-	-
GW112767	Monitoring		-	-	-
GW112768	Monitoring		-	-	-
GW112769	Monitoring		-	-	-
GW112770	Monitoring		-	-	-
GW112771	Monitoring		-	-	-
GW112772	Monitoring		-	-	-
GW112773	Monitoring		-	-	-

Review of the Stage 1-Major Civil Construction Works Environmental Impact Statement (EIS, TfNSW (2012[9]) prepared for the North West Rail Link corridor in relation to soils and groundwater has indicated that the Site exists within the following regional groundwater setting:

- The underlying Hawkesbury Sandstone contains a generally confined fractured rock aquifer, within which groundwater migrates via secondary porosity (fractures, joints and bedding planes);
- Ashfield Shale, having been deposited in a marine environment, comprises groundwater with higher salinity than that of the Hawkesbury Sandstone; and
- Regional groundwater levels are expected to be encountered at a range of 40 m AHD to 170 m AHD. Within the relevant areas, the regional groundwater aquifer within the bedrock is expected to be encountered at a depth of approximately 20 m bgl.

Based on the reported geology, topography and depth to groundwater, perched (shallow) groundwater migration is expected to occur in a north to north-westerly direction, towards the urbanised Delvins Creek tributary on the northwest boundary. Perched groundwater has been reported within the approximate site area, between 3 and 6 m bgl, in the surrounding properties within the fill/weathered shale profile (TfNSW, 2012). It is anticipated that the perched groundwater at the Site will be encountered in pockets within the fill material and/or natural soils or within fractures of weathered residual bedrock at the Site.

[9] *'North West Rail Link – Stage 1-Major Civil Construction Works Environmental Impact Statement'*, Transport for New South Wales, Volume 1A, 26 March 2012, TfNSW (2012);

2.8 Acid Sulfate Soils

Review of the Acid Sulfate Soil Risk Map for Prospect/Parramatta[10] indicates that the Site is located within an area of no known or expected occurrence of acid sulfate soils (ASS).

A Section 149(2&5) council certificate was obtained for the Site, provided in **Appendix F**, as discussed in **Section 3.2**. The land was not identified to have been affected by a policy adopted by council or adopted by any other public authority, notified to council, that restricts the development of the land because of the likelihood of ASS.

No staining, odours or other indicators of ASS were observed during the intrusive investigations. On this basis, no further consideration of the potential presence of ASS or associated requirements for management of such conditions is necessary with regard future development of the site.

2.9 Meteorology

A review of average climatic data for the nearest Bureau of Meteorology monitoring location (Macquarie Park[11]) indicates the Site is located within the following meteorological setting:

- Average minimum temperatures vary from 4.9 ^{o}C in July to 16.9 ^{o}C in January;
- Average maximum temperatures vary from 17.1 ^{o}C in July to 27.7 ^{o}C in January;
- The average annual rainfall is approximately 1161.5 mm with rainfall greater than 1 mm occurring on an average of 88.6 days per year; and
- Monthly rainfall varies from 54.5 mm in July to 139.2 mm in February with the wettest periods occurring on average in January to June.

[10] '*Acid Sulfate Soil Risk Map – Prospect/Parramatta, Edition 2'*, 1997 1:25 000 Ref: 91 30N3. NSW DLWC (1997);

[11] http://www.bom.gov.au/climate/averages/tables/cw_066156.shtmlhttp://www.bom.gov.au/climate/averages/tables/cw_067113.shtml, Commonwealth of Australia, 2013 Bureau of Meteorology, Product IDCJCM0028 prepared on 12 October 2017 and accessed by JBS&G on 14 October 2017;

3. Site History

3.1 Aerial Photographs

Copies of aerial photographs obtained from the Department of Land and Property Information are included in **Appendix G**. Relevant information from the aerial photograph review is summarised below in **Table 3.1**.

Table 3.1 Summary of Aerial Photograph

Year	Site & Surrounding Area Description
1930	The quality of the aerial photograph precluded a detailed assessment of the Site and surrounding area features. The Site appeared to be mostly developed, situated between the above ground train line servicing Epping Station, Beecroft Road and the Delvins Creek tributary. The central and eastern portion of the Site was occupied by commercial type buildings and a surrounding unpaved yard. The structures on the eastern portion of the Site appeared to be large warehouse/shed type structures. The western portion of the Site was occupied by two structures facing Ray Road which appeared to be residential houses within fenced blocks. The northwest portion of the Site, adjacent to the Delvins Creek tributary appeared to be undeveloped in this aerial photograph. The surrounding area appeared to be partially developed with the primary land uses appearing to be low density residential and market gardens. The approximate alignments of surrounding roads were observed to be similar to their current layout, with the exception of Rosen Street and Fert Hill to the north west of the Site, which were observed to be absent in this photograph. Epping Station was observed to the southeast of the Site serviced by northern train line in an approximate north to south direction to the east of the site. To the south of the Site, in the vicinity of the current 7-Eleven service station, the land appeared to be partially occupied by a building.
1947	The site appeared largely the same as the previous aerial photograph (1930). The built form of structures occupying the commercial portion of the Site appeared to have been slightly altered with the addition of new structures (sheds, awnings or warehouses) and is clearly fenced from the surrounding properties. The alignment of the residential properties on the western portion of the Site, the internal road and property boundaries were more clearly discernible, although did not appear to have changed between this and the previous aerial photograph (1930). The surrounding site area was primarily developed land with significant residential subdivision apparent since the 1930 photo in the vicinity of the site. The constructed stormwater drainage channel was observed in the approximate alignment of the former natural Delvins Creek tributary further to the north of the site, whilst adjoining the site, the channel area was heavily vegetated. The alignment of Rosen Street and Fert Hill was observed north west of the Site. Beecroft Road was observed to have been developed since the previous aerial photograph formalising the alignment and road verges. To the south of the Site, in the vicinity of the current 7-Eleven service station, the land appeared to be occupied by four distinct structures.
1961	The Site layout appeared approximately the same as the previous (1947) aerial photograph, with significant timber type materials stockpiled along the west and east site boundaries in addition to the existing buildings. Additional site structures had been added to those previously apparent on the property immediately south of the Site. Infilling of the surrounding areas was evident, with the construction of numerous residential houses and larger commercial/industrial warehouse type structures to the southeast of the Site. A commercial development consistent with a service station building and forecourt had also been constructed on the south-west corner of the Carlingford and Beecroft Road intersection.
1970	The eastern portion of the Site was observed to contain additional structures when compared with the previous aerial (1961) photograph, which appeared to be associated with storage associated with the timber merchant. Additionally, the two residential structures on the western site portion had been demolished with this area appearing to be a grassed open area with scattered trees/shrubs. To the south of the Site, the area currently occupied by the 7-Eleven had undergone a significant redevelopment comprising the demolition of the former structures and construction of a new central building surrounded by pavements upon which a range of vehicles were parked. The broader surrounds was observed to have been subject to continued infilling, comprising a general shift toward higher density residential and commercial land use to the east of the Site, across Beecroft Road.

Year	Site & Surrounding Area Description
1982	Significant alterations to the site layout had occurred since the 1970 image with former buildings having been demolished/altered to result in the two large commercial buildings occupying the eastern portion, and a car park in the western portion. The two commercial buildings appeared to be multi-storey office type structures. The surrounding areas to the southwest, north and northeast of the Site appeared to have been the subject of redevelopment, with a combination of residential structures which were complete and/or under construction. Additionally, commercial redevelopments of the land south of Carlingford Road dominated the area, including a large commercial centre on the western side of Ray Road.
1991	The eastern portion of the Site was not significantly different from the previous (1982) image. An additional multi-storey commercial building had been constructed in the northwest portion of the site with recreational facilities (basketball/tennis court and swimming pool) apparent in the south-west site portion. Areas surrounding the site, primarily to the south and east, had undergone (re)development, evidenced by the presence of numerous large commercial buildings which were not observed in the previous (1982) aerial photograph. A multi-storey commercial building had also been constructed on former bushland to the north of the site. Further infilling of the greater area was also observed including residential development along Carlingford Road to the southwest of the site.
1998	The site appeared the same as the previous (1991) aerial photograph. The surrounding site area was largely the same as the previous aerial photograph, with the exception of minor redevelopments to the south of the Site and of Epping train station and demolition of the former service station to the south of Carlingford Road (vacant paved area at the time of this image).
2007	The Site and surrounding site area appeared approximately the same as the previous (1998) aerial photograph. The former service station to the south Carlingford Road had been redeveloped into a large mixed use development.

3.2 EPA Records

Search of the NSW EPA database was undertaken on 5 September 2017 (**Appendix H**) 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 prohibition notices and no transfer, variation, suspension, surrender or revocation of an environment protection licence records were identified to have been issued under the POEO Act for the Site and immediate surroundings.

No notices have been issued under the CLM Act for the Site and immediate surroundings.

The Site is not on the list of NSW contaminated sites notified to the EPA. The 7-Eleven Service station to the south of the Site is listed on this register with a notation that the information provided to the NSW EPA had indicated that regulation under the CLM Act was not required. No further information pertaining to the nature, extent or severity of the contamination is provided by the EPA website. No other nearby sites were identified on this register.

3.3 Council Section 149 Certificates

A copy of the s.149 Planning Certificates for the Site (Lot 22 in DP 1180959) was obtained from City of City of Parramatta Council on 30 August 2017. Relevant details are summarised below and a copy of the s.149 Planning Certificate is included in **Appendix F.**

Relevant Planning Instruments and Development Control Plans

- The land is subject to the requirements under the Hornsby Local Environmental Plan (LEP), Hornsby (2013);
- The land is subject to the Hornsby Development Control Plan, Hornsby (2013[12]).

Zoning of Land Under Relevant LEPs

- The land is currently zoned R4 High Density Residential under the Hornsby LEP;
- The land does not comprise any land which is considered to be critical habitat, a conservation area or any items of environmental heritage.

Other

- The land is not affected by the Coastal Protection code under *the Coastal Protection Act 197*9;
- The land, or part thereof, is not affected identified as being land affected by any road widening or road alignment under Division 2 of Part 3 of the *Roads Act 1993* or any environmental planning instrument;
- The land, or part thereof, is not proclaimed to be mine subsidence district within the meaning of Section 15 of the *Mine Subsidence Compensation Act 1961*;
- The land, or part thereof, is not identified as being affected by a policy adopted by council or adopted by any other public authority and notified to council that restricts development of the land because of the likelihood of ASS or land contamination;
- The land does not include or comprise critical habitat, is not in a conservation area and there are no items of environmental heritage situated on the land;
- Council's electronic property records do not identify the land to be contaminated, or being contaminated, as having been remediated or being remediated;
- Under the meaning of the CLM Act:
    - the land has not been identified as significantly contaminated land;
    - no management order has been issued for the land;
    - the land is not the subject of an approved voluntary management proposal;
    - the land is not subject to an ongoing maintenance order;
    - the land is not the subject of a site audit statement;
- Development of land or part of the land for the purposes of dwelling houses, dual occupancies, multi-dwelling housing or residential flat buildings is the subject to flood related development controls as a result of a "current" exposure to a flood hazard risk;
- There are no residential premises on the land that are listed on the register as being impacted with Loose-fill asbestos insulation (LFAI). However, it is noted that Council has identified some residential homes within the Parramatta Council are to have been impacted by LFAI and as such there is the potential for LFAI to be found on properties not currently listed on this register.

[12] *'Hornsby Development Control Plan 2013'*, Hornsby Shire Council, November 2016, Hornsby (2013);

3.4 Heritage

A search of the Australian Heritage Trust database did not reveal any heritage listed items at the Site or its immediate surrounds. Heritage information covers Aboriginal as well as European heritage.

A search of the NSW Heritage Inventory did not reveal any heritage listed items at the Site or immediate surrounds. Both Australian Heritage Trust and NSW Heritage information are included in **Appendix I**.

3.5 SafeWork NSW Records

An application to search for licences for stored hazardous chemicals was submitted to SafeWork NSW on 5 September 2017. The report issued by SafeWork NSW is provided in **Appendix J.** SafeWork NSW indicated that they held no records pertaining to the storage of hazardous chemicals at the Site.

3.6 Historical Land Title Records

Historical land title records for the Site area has been summarised in **Table 3.2.** The site area is noted to have formerly comprised multiple lots which were owned under separate titles. Detailed title search information, as well as a graphical representation of the former lot areas investigated is provided in **Appendix K**.

Historical title records indicate that central and northeast portions of the Site were occupied by Paul Allen James, a timber merchant. This ownership was later transferred to P.A. James Pty Ltd who owned the orange, pink and blue (**Appendix K**) portions of the Site between 1925 and 1973, later acquiring the entirety of the Site, except for the Crown Road, in 1959. Prior to ownership by P.A. James Pty Ltd, the various portions of the Site were owned privately by a range of individuals and companies indicated to be builders, timber merchants, contractors and farmers.

In 1981, the Site was amalgamated and owned sequentially by various property investors before being transferred TfNSW in 2012.

The yellow shaded area on copy CMA U0060-91 was noted to formerly comprise a Crown Road which was closed ~1974.

Table 3.2 Summary of Title Searches

Date of Acquisition and Term Held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and Sale
Pertaining to CMA U0060-91 (Yellow Shade, Appendix K)		
06.02.1974 (1974 to 1981)	Rex Building Co. Pty. Limited	Vol 12342 Fol 107
Pertaining to CMA U0060-91 (Orange Shade, Appendix K)		
11.09.1917 (1917 to 1917)	Sydney Willis (Electrical Engineer)	Vol 2790 Fol 4
25.10.1917 (1917 to 1925)	Paul Allen James (Timber Merchant)	Vol 2790 Fol 4
07.01.1925 (1925 to 1973)	P. A. James Limited Now P. A. James Pty. Limited	Vol 2790 Fol 4
09.03.1973 (1973 to 1981)	Rex Building Co. Pty Limited	Vol 2790 Fol 4 Now Vol 12220 Fol 41
Pertaining to the CMA U0060-91 (Pink Shade, Appendix K)		
11.09.1917 (1917 to 1917)	Alfred Forester Wooster (Timber Merchant)	Vol 2790 Fol 5
25.10.1917 (1917 to 1925)	Paul Allen James (Timber Merchant)	Vol 2790 Fol 5

Date of Acquisition and Term Held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and Sale
07.01.1925 (1925 to 1973)	P. A. James Limited Now P. A. James Pty. Limited	Vol 2790 Fol 5
09.03.1973 (1973 to 1981)	Rex Building Co. Pty Limited	Vol 2790 Fol 5 Now Vol 12220 Fol 42
Pertaining to the CMA U0060-91 (Blue Shade, Appendix K)		
25.07.1916 (1916 to 1916)	Mielon Eyles (Shipping Agent)	Vol 2685 Fol 66
06.10.1916 (1916 to 1925)	Paul Allen James (Timber Merchant)	Vol 2685 Fol 66
07.01.1925 (1925 to 1973)	P. A. James Limited Now P. A. James Pty. Limited	Vol 2685 Fol 66
09.03.1973 (1973 to 1981)	Rex Building Co. Pty Limited	Vol 2685 Fol 66 Now Vol 12220 Fol 43
Pertaining to the CMA U0060-91 (Green Shade, Appendix K)		
04.07.1900 (1900 to 1918)	Stephen Downs (Contractor)	Vol 1321 Fol 4
14.06.1918 (1918 to 1925)	Charles Downs (Agent) Stephen Downs (Farmer) (Application by Transmission not investigated)	Vol 1321 Fol 4
18.09.1958 (1958 to 1960)	Lewis Charles Downs (Builder) Stephen Downs (Guest House proprietor) (Application under Section 12 of the Trustee Act 1925 not investigated)	Vol 1321 Fol 4
04.02.1960 (1960 to 1973)	P. A. James Pty. Limited	Vol 1321 Fol 4 Now Vol 7863 Fol 216
09.03.1973 (1973 to 1981)	Rex Building Co. Pty Limited	Vol 7863 Fol 216
Pertaining to the CMA U0060-91 (Purple Shade, Appendix K)		
04.07.1900 (1900 to 1918)	Stephen Downs (Contractor)	Vol 1321 Fol 4
14.06.1918 (1918 to 1925)	Charles Downs (Agent) Stephen Downs (Farmer) (Application by Transmission not investigated)	Vol 1321 Fol 4
18.09.1958 (1958 to 1959)	Lewis Charles Downs (Builder) Stephen Downs (Guest House proprietor) (Application under Section 12 of the Trustee Act 1925 not investigated)	Vol 1321 Fol 4
21.12.1959 (1959 to 1973)	P. A. James Pty. Limited	Vol 1321 Fol 4 Now Vol 7998 Fol 120
09.03.1973 (1973 to 1981)	Rex Building Co. Pty Limited	Vol 7998 Fol 120
Pertaining to the Whole Site		
12.01.1981 (1981 to 1983)	Capital & Counties (Australia) Pty. Limited	Vol 12342 Fol 107, Vol 12220 Fol 41, Vol 12220 Fol 42, Vol 12220 Fol 43, Vol 7863 Fol 216 and Vol 7998 Fol 120 Now Vol 14516 Fol 106, Vol 14516 Fol 107, Vol 14516 Fol 108 and Vol 14516 Fol 109
30.12.1983 (1983 to 1989)	Pemta Pty Limited	Vol 14516 Fol 106, Vol 14516 Fol 107,

Date of Acquisition and Term Held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and Sale
		Vol 14516 Fol 108 and Vol 14516 Fol 109 Now 21/700406 and 22/700406
12.01.1989 (1989 to 1991)	Pemta Pty Limited Burns Philip Trustee Company Limited (Trustee for the Capcount Property Trust)	21/700406 and 22/700406
25.03.1991 (1991 to 1991)	Pemta Pty Limited Permanent Trustee Company Limited (Trustee for the Capcount Property Trust)	21/700406 and 22/700406
25.03.1991 (1991 to 1997)	Pemta Pty Limited Trust Company of Australia Limited (Trustee for the Capcount Property Trust)	21/700406 and 22/700406
08.05.1997 (1997 to 2000)	IOOF Australia Trustees (NSW) Limited	21/700406 and 22/700406
03.07.2000 (2000 to 2012)	Perpetual Trustee Company Limited	21/700406 and 22/700406
25.06.2012 (2012 to Date)	# Transport for NSW	21/700406 and 22/700406 Now 22/1180959

Numerous leases were identified within the records which have since expired or been surrendered. These leases were not investigated. One right of carriageway and three easements for drainage were identified.

3.7 NSW Parish Maps and Local History Information

A review of available the former Hornsby Shire Council's online historical information did not result in the identification of local historical articles pertaining to the Site or immediate surrounds.

Review of the online tool hosted by Historic Photographs Australia (HPA), HPA (2017[13]) has resulted in the identification of three photographs relevant to the Site (**Appendix L**):

- A Notsons Shell service station was identified on the corner of Carlingford and Beecroft Roads in the current location of the 7-Eleven service station. The two photographs identified were indicated to have been taken in the 1940s. The buildings shown in the photographs appear consistent in size/nature with aerial photo imagery; and
- A P.A. James Timber Merchant shop front was identified to exist within Epping, with listed products including timber, moulding, guttering and rigging. This is potentially the southernmost building identifiable within the P.A. James portion of the Site in the aerial photographs from 1930 to 1970, as evidenced by the sharp rise on the inferred southern portion, and the appearance of timber materials storage on the northern face of the building.

3.8 Summary of Site History and Integrity Assessment

The Site has previously been used for a range of purposes, including residential, commercial and industrial uses. The eastern site portion was occupied by a timber merchant between approximately 1924 and 1971. Following which, the eastern site portion was redeveloped to accommodate multi-storey commercial (office) structures. Initially, the western site portion was used for residential purposes, following which for a period it was utilised as a car park. In 1991, the western site portion

[13] Sourced from Historic Photographs Australia, accessed 15 September 2017, http://www.historicphotographs.com.au/searcher.asp?terms=epping&force=1&sitemode=2&country=2&region=1&place=&startYear=0&endYear=0

was redeveloped to accommodate additional commercial (office) structures and the south-west portion improved with recreational facilities including a tennis/basketball court and swimming pool. Recently, development activities associated with the NWRL MCCW have resulted in the removal of the two western most office buildings and the recreational area on the south east site corner. These site areas have temporarily been used by contractors for construction yard purposes associated with development of the North West Metro service.

Historical aerial photographs and local historical sources have indicated that the 7-Eleven service station to the south of the Site has been in operation since the 1930s. A former service station is likely to also have operated for a shorter period further to the north of the site, beyond Carlingford Road, however this was later redeveloped for the existing commercial/residential development.

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.

No previous site contamination assessments have been provided by the client or were readily available from a search of relevant resources.

4. Conceptual Site Model

4.1 Potential Areas of Environmental Concern

Based on the Site history review and observations of site conditions during the detailed site inspection, Areas of Environmental Concern (AECs) and associated Contaminants of Potential Concern (COPCs) have been identified and are presented in **Table 4.1**. AECs are graphically represented alongside site features on **Figure 2.**

Table 4.1 Areas of Environmental Concern and Contaminants of Potential Concern

Area of Environmental Concern (AEC)	Contaminants of Potential Concern (COPC)
Former Offsite Fuel storage/Dispensing Area (**Figure 2**) Migration of potentially impacted groundwater and/or soil vapour onto the Site from the 7-Eleven (and formerly Notsons) service station on the southern boundary	Total recoverable hydrocarbons (TRH), BTEX and heavy metals, phenolics.
Timber Manufacturing, Storage and Dispatching - East yard area Onsite timber manufacturing activities (timber treatment)	Heavy metals (primarily copper, chromium and arsenic), organochlorine pesticides (OCPs), polycyclic aromatic hydrocarbons (PAHs) and Cyanide
Whole of Site. Fill materials of unknown origin used to generate current site levels. Particularly associated with areas where fill materials were utilised to level former excavations.	Heavy metals, PAHs, TRHs / BTEX, OCPs, polychlorinated biphenyls (PCB) and asbestos.
Whole of Site: • Pesticide application associated with site maintenance activities • Fuel and oil spills associated with onsite vehicle storage/maintenance activities. • Hazardous building materials associated with existing / former site structures	Heavy metals, OCPs, PCBs, TRH, BTEX, PAHs and Asbestos.

4.2 Potentially Contaminated Media

Each of the AECs and corresponding COPCs identified in **Table 4.1** have the potential to result in impact to soil and with the exception of asbestos, to groundwater. Contaminants including TRH and BTEX, as associated with potential migration of contaminants from the 7-Eleven site, onsite spills and fill materials also have the potential to result in soil vapour impacts.

Where fill materials are present, natural soils have been disturbed, or waste material buried, there is a potential for impacts at depth, consistent with the depth of disturbance. Anthropogenic materials are commonly present in impacted fill/disturbed soil and can be used as an indication of the depth of disturbance. Where fill materials impacted with chemical based contaminants are identified, there is a potential the impact may have migrated laterally and vertically below the fill material into the natural soil profile and/or bedrock.

On the basis of the above, natural soils at depth, soil vapour and groundwater at the Site are considered potentially impacted media as a result of historical site activities and surrounding land uses. The extent of the potential impact to natural soils will be dependent upon the size and severity of the overlying impact as well as the properties of the natural soils and groundwater conditions.

4.3 Potential for Migration from Site

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

- The nature of the contaminants (solid/liquid and mobility characteristics);

- The extent of the contaminants (isolated or widespread);
- The location of the contaminants (surface soils or at depth); and
- The Site topography, geology, hydrology and hydrogeology.

The COPCs identified as part of the Site history review and site inspection are generally in solid (e.g. asbestos, PAHs and metals), liquid (e.g. TPH, BTEX, OCPs and PCBs) or gaseous (e.g. BTEX, Volatile TRH, semi-volatile PAHs) form.

The ground surfaces overlying AECs are primarily comprised of sealed pavements and building footprints with limited unsealed or vegetated ground thereby limiting the total extent of surface water infiltration into the subsurface. The potential for migration of *in-situ* impacted soil via windblown dust is considered to be unlikely provided the hardstands are maintained across the Site surfaces.

The potential solubility of chemical contaminants in soil, in addition to rate of surface water intrusion, perched water seepage and groundwater movement across the site will influence the potential for migration of soil and groundwater based contamination within and from the Site. Notwithstanding, if impacted groundwaters are migrating to the site from the southern boundary, then potential offsite migration requires consideration.

Given the nature of the AECs, it is considered likely that localised impacts to soil, groundwater and/or soil vapour may be present at an extent which may result in migration of contamination at a scale where off-site migration would require to be addressed.

4.4 Human / Ecological Receptors and Exposure Pathways

Potential human receptors of environmental impact include future site users, visitors and construction/maintenance contractors engaged to work at the Site who may potentially be exposed to COPCs through inhalation or direct contact with impacted soils or groundwater present within the Site. Additionally, migration of contaminants via infiltration into the groundwater, windblown dusts and vapour also pose a potential risk to sensitive human receptors.

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

- Potential dermal contact with and ingestion of impacted soils / groundwater as present at shallow depths and/or accessible by future excavations by site workers, visitor and/or occupants; and/or
- Potential inhalation of vapours migrating upwards and laterally from fill and/or natural soil.

The Site is currently primarily covered by hardstand pavements and building footprints, however several of the identified AECs have the potential to impact onsite ecological receptors. Possible off-site ecological receptors are limited to potential impacts associated with groundwater and surface runoff water (if present) migrating from the Site toward the Delvins Creek tributary and eventually Lane Cove River.

4.5 Preferential Pathways

For the purpose of this assessment, preferential pathways have been identified as natural and/or man-made pathways that result in the preferential migration of COPC as either liquids or gasses.

Man-made preferential pathways are likely present throughout the Site, generally associated with areas of previously disturbed fill material and service easements.

Natural preferential pathways are likely limited to natural lithological borders, such as between porous soils and bedrock, where infiltrating groundwater is vertically confined and begins migrating laterally downgradient

4.6 Source to Receptor Pathway Summary

Table 4.2 below presents a summary of potential source to receptor pathways identified in **Section 4.1** to **4.6**.

Table 4.2 Conceptual Site Model Source to Receptor Summary

Area of Environmental Concern	Contaminant of Potential Concern / Media	Pathway -> Uptake	Receptor
Potentially impacted groundwater migrating onsite from 7-Eleven	TRHs, BTEX, lead / liquid	Infiltration into the Groundwater -> Biological uptake into the ecosystem	Downstream ecological receptors (Delvins Creek/Lane Cove River) Current/future recreational users and construction maintenance staff at the Site
		Physical contact -> Oral ingestion or dermal contact	Current/future site users (construction/maintenance workers and/or occupants)
	TRHs, BTEX / vapour	Intrusion into ambient atmosphere -> Inhalation	Current/future site users (construction/maintenance workers and/or occupants)
	Heavy metals, / solid	Physical contact -> Oral ingestion or dermal contact	Current/future site users (construction/maintenance workers and/or occupants)
		Physical Contact -> Biological uptake into root systems	Current and future onsite sensitive ecological receptors (flora)
Whole of Site	Heavy metals, PAHs, cyanide / solid	Physical contact -> Oral ingestion or dermal contact	Current/future site users (construction and maintenance workers and/or occupants)
		Infiltration into the Groundwater -> Biological uptake into the ecosystem	Downstream ecological receptors (Delvins Creek/Lane Cove River) Current and future recreational users and construction/maintenance staff at Delvins Creek and Lane Cove River
	Asbestos / solid	Inhalation	Current/future site users (construction and maintenance workers and/or occupants)
		Off-site migration via windblown dust -> Inhalation	Off-site sensitive human receptors
	TRHs, PAHs, BTEX, OCPs and PCBs / liquid	Infiltration into the Groundwater -> Biological uptake into the ecosystem	Downstream ecological receptors (Delvins Creek and Lane Cove River) Current and future recreational users and construction/maintenance staff at Delvins Creek and Lane Cove River
		Physical contact -> Oral ingestion or dermal contact	Current/future site users (construction/maintenance workers and/or occupants)
		Physical contact -> Oral ingestion or dermal contact	Current and future construction/maintenance workers and/or occupants of the Site

		Physical Contact -> Biological uptake into root systems	Current and future onsite sensitive ecological receptors (flora)

5. Sampling and Analysis Plan

5.1 Data Quality Objectives

DQOs were developed for the investigation in accordance with the process outlined in Appendix B of the NEPM, NEPC (2013), and is discussed in the following sections.

5.1.1 State the Problem

It is understood that the Site owner, UGNSW, requires an assessment of the potential for gross or widespread contamination to be present at the Site, and associated opportunities and constraints associated with such conditions during future redevelopment.

The preliminary desktop assessment of potential site contamination concerns as documented in previous sections has identified a range of potential areas of concern and associated contaminants of concern associated with historical and current site and surrounding land uses. As such, a preliminary intrusive site investigation is required to facilitate collection of a data set to enable decision making with regard to drawing conclusions on the potential for gross or widespread contamination to be present at the Site.

Information on potential site contamination conditions inferred from the desktop review and observations made during the site inspection resulted in the development of the conceptual site model presented in **Section 4.**

5.1.2 Identify the Decision

Based on the decision making process for assessing urban redevelopment sites detailed in DEC (2006), the following decisions must be made:

- Are there any unacceptable risks to likely future onsite receptors?
- Are there any issues relating to background soil concentrations that exceed appropriate site soil criteria?
- Are there any impacts of chemical mixtures?
- Are there any aesthetic issues at the Site?
- Is 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 identified to provide sufficient data to make the decisions nominated above include:

- Desktop review;
- Detailed site inspection/walkover;
- Physical observations and interpretation of potentially contaminated media through the collection of soil and groundwater samples;
- Development of appropriate assessment criteria for evaluation of potential soil and groundwater impacts;
- Field parameters as measured utilising calibrated equipment during the intrusive investigation including assessment of soil sample headspace and physicochemical parameters of groundwater;
- Laboratory analysis of soil and groundwater samples of potentially contaminated media for COPC; and

- Confirmation that data generated by sample analysis are of an acceptable quality to allow reliable comparison to assessment criteria by assessment of quality assurance / quality control as per the data quality indicators established in **Section 5.1.6**.

Specifically, sufficient data needs to be collected from each of the identified potentially impacted media in the identified AEC for the associated COPC (**Table 4.1**).

5.1.4 Define the Study Boundaries

The study boundaries are limited to the boundaries of the Site shown on **Figure 2**. The Site area and approximate Map Grid of Australia (MGA) boundary points are shown on **Figure 2.** The vertical extent of the investigation was limited to a maximum depth of 6.0 m bgl as the final depth of the deepest borehole (BH01, BH04 and BH05). Soil sampling was undertaken to a maximum depth of 3.0 m bgl and the three groundwater wells were installed to a depth of 6 m bgl.

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, comprising September - October 2017.

5.1.5 Develop and Decision Rule

Soil analytical data were assessed against the appropriate criteria as identified in **Section 6**. Statistical analyses of soil data were undertaken, where appropriate in accordance with relevant guidance documents. The following statistical criteria were adopted for the assessment of soil data as appropriate:

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

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

Decisions Required to be Made	Decision Rule
1. Are there any unacceptable risks to onsite future receptors?	A) Soil analytical data was compared against EPA endorsed criteria. Statistical analysis of the soil data was completed in accordance with relevant guidance documents, as appropriate, to facilitate the decisions. The criteria in **Section 6.2**, and the following statistical criteria were adopted with respect to soils: Either: the reported concentrations were all below the Site criteria; Or: the average site concentration for each analyte was below the adopted site criterion; no single analyte concentration exceeded 250% of the adopted site criterion; and the standard deviation of the results was less than 50% of the Site criterion; And: the 95% UCL of the average concentration for each analyte was below the adopted site criterion. If the statistical criteria stated above were satisfied, the answer to the decision was No. If the statistical criteria were not satisfied, the answer to the decision was Yes.
	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

Decisions Required to be Made	Decision Rule
	results are indicative of background conditions. If this is not the case, then the answer to the decision is Yes.
2. Are there any background contamination issues?	Background soil concentrations as detailed in *Trace Element Concentrations in Soils from Rural and Urban Areas of Australia*, Henry Olzworthy *Et Al*. (1995[14]) were used for comparison of site soil data. If there were any contaminants at concentrations substantially above background ranges, then the answer was yes, otherwise the answer was no
2. Are there any chemical mixtures?	Was there more than one group of contaminants present which increase the risk of harm? If there was, the answer to the decision was Yes. Otherwise, the answer to the decision was No.
3. Are there any contaminant odours, or other unacceptable aesthetic concerns?	If there were any unacceptable odours, or the presence of asbestos fragments or similar, the answer to the decision was Yes. Otherwise, the answer to the decision was No.
4. Is there any evidence of, or potential for, migration of contaminants from the Site?	Assessment of the potential for groundwater impact at the site included installation of three groundwater monitoring wells at the site (2 at the upgradient site boundary and 1 near between the midpoint and most downgradient location). The resulting groundwater contaminants concentrations were compared against adopted ANZECC/ARMCANZ 2000 based site specific assessment criteria. Assessment of the potential for ongoing impact to groundwater from the presence of elevated COPCs within site soils was undertaken via the implementation of Australian Standard Leachate Procedure (ASLP) testing on soils with the highest contaminant concentrations in the primary soil samples. Based on assessment results, was there any evidence of, or the potential for, unacceptable contaminant concentrations to migrate from the Site? If yes, the answer to the decisions was Yes. Otherwise, the answer to the decision was No.
6. Is a site management strategy required?	Is the answer to any of the above decisions Yes? If yes, a site management strategy is required to address unacceptable contamination concerns at the Site so as to make the Site suitable for permissible site uses. If no, a site management strategy is not required and the Site is considered suitable, from a contamination view point for the proposed use.

5.1.6 Specific Limits on Decision Errors

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

Section 2.4 of *Contaminated Sites: Sampling Design Guidelines,* EPA (1995[15]), indicates that a site investigator should maintain a confidence level no lower than 95 %. As such, for the assessment of soil samples, the 95 % upper confidence limit for contaminant concentrations shall be compared to the adopted site assessment guidelines.

Specific limits for this project have been adopted in accordance with the appropriate guidance from the NSW EPA National Environmental Protection Measure (NEPM), NEPC (2013[16]), appropriate Data Quality Indicators (DQIs, used to assess quality assurance / quality control) and standard JBS&G procedures for field sampling and handling.

[14] '*Trace Element Concentrations in Soils from Rural and Urban Areas of Australia*', Henry Olszowy *Et Al*., (Henry Olszowy *et Al.* 1995)
[15] *'Contaminated Site: Sample Design Guidelines'*, NSW Environment Protection Authority, ISBN 0 7310 3746 1, September 1995, EPA (1995)
[16] National Environmental Protection (Assessment of Site Contamination) Measure 1999. As compiled 16 May 2013 National Environmental Council (NEPC 2013)

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

The pre-determined DQIs established for the project are discussed below in relation to the PARCCS parameters, and are shown in **Table 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; and ensuring analysing laboratories use consistent analysis techniques; and reporting methods.
- **Completeness** – is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.
- **Sensitivity** – expresses the appropriateness of the chosen field and laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted site assessment criteria.

Table 5.2 Data Quality Indicators

Data Quality Indicators	Frequency	Data Quality Criteria
Precision		
Split duplicates (intra laboratory)	1 / 20 samples	<50% Relative Percent Difference (RPD[1])
Blind duplicates (inter laboratory)	1 / 20 samples	<50% RPD[1]
Laboratory Duplicates	1 / 20 samples	<50% RPD[1]
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	-[2]
Samples extracted and analysed within holding times.	-	Soil: organics (14 days), inorganics (6 months)
Laboratory Blanks	1 per lab batch	<LOR
Trip spike	1 per lab batch	70-130% recovery
Storage blank	1 per lab batch	<LOR
Rinsate sample	1 per sampling event/media	<LOR
Comparability		
Standard operating procedures for sample collection & handling	All Samples	All Samples
Standard analytical methods used for all analyses	All Samples	NATA accreditation
Consistent field conditions, sampling staff and laboratory analysis	All Samples	All samples[2]
Limits of reporting appropriate and consistent	All Samples	All samples[2]
Completeness		
Sample description and COCs completed and appropriate	All Samples	All samples[2]
Appropriate documentation	All Samples	All samples[2]
Satisfactory frequency and result for QC samples		95% compliance
Data from critical samples is considered valid	-	Critical samples valid
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted Site assessment criteria	All samples	LOR ≤ site assessment criteria

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

[2] A qualitative assessment of compliance with standard procedures and appropriate sample collection methods will be completed during the DQI compliance assessment.

5.2 Optimise the Design of Obtaining Data

Various strategies for developing a statistically based sampling plan are identified in *Contaminated Sites: Sampling Design Guidelines,* EPA (1995[17]), including judgemental, random, systematic and stratified sampling patterns. The adopted sampling methodology is discussed in the following sections.

[17] *'Contaminated Site: Sample Design Guidelines'*, NSW Environment Protection Authority, ISBN 0 7310 3746 1, September 1995, EPA (1995)

Based on the identified AECs and associated potentially impacted media, a combined judgemental and systematic sampling plan has been developed such that sufficient characterisation data may be collected to address each area of concern. In development of the sampling plan, the following was considered:

- EPA (1995) recommends that a minimum of 21 evenly spaced (systematic) sampling points is suitable on a 9200 m^2 site for the purposes of site characterisation. Given the preliminary nature of this investigation and the current limited extent of access to the site, a total of 11 boreholes were advanced to assist with evaluation of the potential for gross or widespread contamination to occur at the site.
- Given the anticipated site soil/geology, the investigation of groundwater conditions considered the requirements for sampling locations adjacent to and down-gradient of potentially contaminated areas at the site and an up-gradient location as a control to assess the potential background groundwater conditions at the site, with a minimum of at least 2 down-gradient and one up-gradient monitoring well location to characterise site conditions.

The final adopted sampling strategy comprised the installation of a total of 11 soil investigation locations across the site on a judgemental sampling pattern, targeted towards AECs identified during the desktop review and site inspection phases of the assessment. A total of three groundwater monitoring wells were installed and sampled as part of the intrusive investigation, comprising two inferred upgradient location and one downgradient of potentially contaminated site media.

The soil and groundwater sampling and analysis program is summarised in **Table 5.3**.

5.3 Soil and Groundwater Investigation Methodology

5.3.1 Soil Sampling Methodology

Soil sampling was generally completed via using a combination of hand tools and mechanical excavation. Mechanical excavation was undertaken using a pendulum auger attachment to an excavator (BH02, BH07, BH08, BH09, BH10 and BH11) or via a combination of push tube (PT) and solid flight auger (SFA) drilling methods (BH01, BH04 and BH05). As a result of access limitations, the two boreholes within the garden verge of the TfNSW Office Building were required to be completed using hand tools.

Soil samples were generally collected from the soil surface or immediately underlying hardstand pavements, and then approximately 0.5 m intervals to the maximum depth of the investigation. Where conventional drilling techniques (PT and SFA) failed to advance investigation locations to the required depth as a result of the sandstone bedrock, air hammering was employed. It is noted that no potential for sampling spoil was available for the depth interval required to be advance using air hammer techniques. Where significantly differing soil stratigraphy was encountered, the soil sampling density was increased to ensure that each material type was sampled for potential analysis. Soil samples were collected from the surface to natural materials at every investigation location with the exception of BH03, BH06, and BH07. Use of hand tools as a result of access restrictions limited the achievable depth of investigation at BH03 and BH06, which did not penetrate the full fill material profile. The presence of a secondary concrete slab at location BH07 precluded advancement of the borehole beyond 0.8 m bgl.

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 D**. A calibrated PID was utilised to screen for volatile organic compounds (VOCs) within the sampled material. Calibration records are presented in **Appendix M**.

Soil samples for the contamination assessment were collected directly from the hand auger head, solid flight auger or push tube liner 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.

Where fill material was encountered, asbestos quantification (AQ) was undertaken in accordance with methods outlined in the NEPM, NEPC (2013) including collection of a known volume of soil (10 L) and processing through a 7 mm sieve to identify asbestos containing materials. AQs were undertaken at 1 m intervals within fill material or over the total depth of a lithological type, whichever is shorter, in accordance with NEPC (2013) requirements.

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

5.3.2 Groundwater Monitoring Well Installation

Three soil sampling boreholes were converted into groundwater monitoring wells. One monitoring well was installed in the central site portion (BH05) and two monitoring wells were installed along the southern boundary of the Site (BH01 and BH04, inferred upgradient). The three wells were constructed such that the perched (shallow) groundwater table was captured within the screened interval.

The three wells were installed to a depth of approximately 6.0 m bgl. The wells were constructed from 50 mm unplasticised polyvinyl chloride (uPVC) screen and casing, combined with a lockable cap and steel gatic cover. 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. Surrounding the uPVC screen a graded (2mm) sand was utilised to construct a 'gravel pack' which limited clogging of the screen with excess soils. Additionally, above the screened interval, a bentonite seal was installed to reduce the potential for surface water, perched water and/or liquid phase contaminants to enter the well from outside the screened interval. The steel gatic cover was installed in concrete consistent with the surrounds.

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

5.3.3 Groundwater Sampling

Each monitoring well was then gauged with an Interface Probe (IP) which can detect Non-Aqueous Phase Liquids (NAPLs). If NAPLs were present within the well they were collected with a disposable plastic bailer. If no significant NAPLs were present, the groundwater at each well was then purged with a low flow peristaltic pump, using fresh disposable Low Density Poly-ethylene (LDPE) tubing and silicon, 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 taken from the end of the disposable LDPE tubing after parameter stabilisation has 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**).

5.3.4 Decontamination

Prior to the commencement of sampling activities, non-disposable sampling equipment, including the hand trowel, hand auger, interface probe and the flow cell was cleaned with a high-pressure water/detergent spray, rinsed with water and then air dried. The equipment was then inspected to ensure that no soil, oil, water, debris or other contaminants were apparent on the equipment prior to the commencement of works. Decontamination records are presented in **Appendix M**.

Soil samples were removed from the auger head and placed immediately into sample containers. Remaining soils were laid onto clean, contrasting plastic for inspection and borehole logging. Push tube sleeves were removed from the advancement casing and laid on clean plastic sheets for inspection, soil samples were collected directly from the push tube sleeve. A new pair of disposable nitrile gloves were used to collect each sample.

Non-disposable groundwater monitoring equipment was decontaminated in accordance with the procedure detailed above in between each monitoring well. Soil vapour and groundwater samples were collected using dedicated disposable sampling equipment which was disposed of after use.

A rinsate sample from the hand trowel was collected at the completion of field sampling activities to evaluate the effectiveness of the decontamination procedures implemented on re-usable sampling equipment.

5.3.5 Duplicate and Triplicate Sample Preparation

At selected sample locations, sufficient soil or groundwater was collected to provide a primary, blind (intra-laboratory) duplicate and split (inter-laboratory) duplicate (triplicate) sample using the sampling methodology outlined above.

The collected soil samples were divided laterally into three samples with minimal disturbance to reduce the potential for loss of volatiles and placed in three clean glass jars and sample bags as appropriate. Soil samples were not homogenised in order to minimise the loss of volatiles.

The collected groundwater samples were extracted from the groundwater wells after purging and the primary, blind duplicate and split duplicate sample containers were filled consecutively, one quarter at a time. Groundwater samples were not homogenised in order to minimise the loss of volatiles.

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

5.3.6 Laboratory Analysis

JBS&G contracted Eurofins MGT (Eurofins) as the primary laboratory for the required chemical analyses. The secondary laboratory was Envirolab Services Pty Ltd (Envirolab). Both laboratories were NATA accredited for the required analyses. In addition, the laboratories were required to meet JBS&G's internal quality assurance/quality control (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	11 Borehole Sampling Locations	Heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) – 15 samples TRHs/BTEX – 15 samples PAHs – 15 samples Cyanide – 4 samples Asbestos – 15 samples (500 ml NEPC 2013) + visual OCPs/PCBs – 11 samples Ecological parameters – 3 samples
Water	3 Groundwater Wells	Heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) – 3 samples TRH/BTEX – 3 samples PAH low levels – 3 samples VOCs – 3 samples

In addition to the above primary analyses, to address the DQIs, field duplicate and triplicate soil and groundwater samples were analysed at a rate of one per 20 primary samples. A rinsate sample was obtained from non-disposable sampling equipment each day that soil or groundwater sampling was undertaken, 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, October 2000, ANZECC/ARMCANZ (ANZECC 2000);
- *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme*, 2nd Edition, NSW EPA, 2006 (DEC 2006)
- *Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination*, NSW DEC, March 2007 (DEC 2007);
- *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 DECC, June 2009 (DECC 2009);
- *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*, NSW OEH, 2011 (OEH 2011); and
- *Waste Classification Guidelines Part 1: Classifying Waste*. NSW EPA, 2014 (EPA 2014).

6.2 Soil Assessment Criteria Selection

As per the decision process for assessment of urban development site (DEC 2006), a set of health and ecological assessment thresholds derived from NEPC (2013) was used for evaluation of site contamination data collected for this assessment. Given the likely proposed use of the Site (high density residential land use), as noted in **Section 1.1**, the Site has been compared to land use criteria for residential with minimal opportunities for soil access includes dwellings with fully and permanently paved yard space such as high-rise buildings and flats. The Site is zoned Infrastructure (R4) under the Hornsby LEP, Hornsby (2013).

The results of asbestos analysis were assessed in general accordance with NEPC (2013) including DOH (2009[18]) guidance.

Where there are no NSW EPA endorsed thresholds for individual COPC the laboratory limit of reporting (LOR) was adopted as an initial screening value for the purposes of this assessment.

The adopted site criteria are presented in the summary results tables for each media. Relevant guidelines have been adopted from Section 4 (asbestos contamination criteria) and Section 6 (chemical contamination criteria) of Schedule B1 NEPC (2013) and are presented below:

Health Based Criteria:

- Table 1A(1) 'Health Investigation Levels for Soil contaminants';
- Table 1A(3) Soil HSLs for Vapour Intrusion: 0 m – 1 m, 1 m – 2 m and 2 m – 4 m;
- Table 1A(4) Groundwater HSLs for Vapour Intrusion;

[18] *Guidelines for the Assessment Remediation and Management of Asbestos-Contaminated Sites in Western Australia*, May 2009. Western Australia Department of Health (DOH), (DOH 2009)

- Table 1A(5) Soil Vapour HSLs for Vapour Intrusion; and
- Table 7: Health Screening Levels for Asbestos Contamination in Soils.

Given the limited proposed high density residential land use of the Site, the land use scenario adopted for the assessment was residential with minimal opportunities for soil access (HIL-B).

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 'Urban Residential/Public Open Space' land use scenario which is considered to be broadly equivalent to the HIL-B land use scenario as described in Schedule 7 of the NEPM, NEPC (2013).

Site Specific Ecological Investigation Levels

Site specific EILs were derived in accordance with the methodology outlined within NEPC (2013). Added Contaminant Limits (ACLs) were obtained from the following tables within the NEPC (2013):

- Table 1B(1) Soil-specific Added Contaminant Limits for Aged Zinc in Soil;
- Table 1B(2) Soil-specific Added Contaminant Limits for Aged Copper in Soil;
- Table 1B(3) Soil-specific Added Contaminant Limits for Aged Chromium III and Nickel in Soil;
- Table 1B(4) Generic Added Contaminant Limits for Lead In Soils Irrespective of Their Physicochemical Properties; and
- Table 1B(5) Generic EILs for Aged Arsenic, Fresh DDT and Fresh Naphthalene in Soils Irrespective of Their Physicochemical Properties.

Three representative soil samples (BH01 0.4-0.5, BH04 0.4-0.5 and BH06 0-0.1) were submitted for laboratory analysis to determine physical parameters including Cation Exchange Capacity (CEC), pH and % Clay. Detailed laboratory reports and chain of custody documentation is provided in **Appendix M**.

Values for Average Background Concentrations (ABCs) were obtained from Trace Element Concentrations in Soils from Rural and Urban Areas of Australia (Henry Olzworthy *Et Al*. 1995).

Table 6.1 details ABCs, Added Contaminant Limits and derived EILs. All values are in mg/kg unless otherwise specified.

Table 6.1 Derivation of EILs

Physical Parameters			
Sample	**CEC (meq/100g)**	**pH (pH units)**	**% Clay**
BH01 0.4-0.5	2.5	4.3	20
BH04 0.4-0.5	1.6	5.2	11
BH06 0-0.1	28	5.4	9.4
Conservative Adopted Value-	2.5	4.3	9.4
Investigation Levels			
		ACL	**EIL**
Contaminant	**ABC**	**Commercial / Industrial**	**Commercial / Industrial**
Arsenic	Not Applicable	Not Applicable	**100**
Chromium (III)	12	320	**332**
Copper	49	60[1]	**109**
DDT	Not Applicable	Not Applicable	**180**
Lead	303	1100	**1403**
Naphthalene	Not Applicable	Not Applicable	**170**
Nickel	6	30	**36**
Zinc	142	70[2]	**212**

[1] Selected utilising the pH value to determine the most conservative ACL.
[2] Selected based on value for pH and CEC resulting in the most conservative ACL.

Where laboratory results provided concentrations for total chromium, for which the assessment criterion refer to a specific valance state (chromium III), the total chromium concentration was adopted for comparison against the calculated EIL as an initial (conservative) screening value.

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 'Residential, Parkland and Public Open Space' land use scenario. Based on site observations discussed in **Section 8.1**, a coarse soil texture was adopted for comparison of results as the most conservative option based on observed site characteristics.

6.2.1 Groundwater Investigation Levels

DEC (2007) '*Guidelines for the Assessment and Management of Groundwater Contamination*' instructs that groundwater investigation levels (GILs) be based on a consideration of groundwater's environmental values. Environmental values are defined in ANZECC / ARMCANZ (2000) as "...*particular values or uses of the environment that are important for a healthy ecosystem or for public benefit, welfare, safety or health which require protection from the effects of pollution, waste discharges and deposit*".

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.

DEC (2007) instructs that all environmental values of groundwater be identified to allow development of appropriate GILs. NSW Government (2006) '*Environmental Objectives for Water Quality and River Flow*' are nominated as an appropriate source of environmental values. DEC (2007) further recommends that groundwater with a level of total dissolved solids below 2000 mg/L be considered suitable for potential use as drinking water.

Groundwater investigation criteria have been adopted in reference to the water quality objectives identified within *Environmental objectives for Water Quality and River Flow*, for the applicable catchment area, Sydney Harbour and Parramatta River. The water quality objectives specifically require consideration for the protection of: Aquatic Ecosystems, Visual Amenity, Secondary Contact Recreation and Primary Contract Recreation. In addition to the inclusion of drinking water as an environmental value based on the requirements outlined in DEC 2007 and the potential for human contact to groundwater down-gradient of the site. As such, application of the adopted groundwater criteria shall be as follows:

- Drinking Water and Recreational Criteria – shall be applied to groundwater as human contact with groundwater may occur via mixing of groundwater and the surface waters of the Lane Cove River and eventually Parramatta River. Drinking and recreational criteria have

been adopted from the Australian Drinking Water Guidelines (ADWG), National Health and Medical Research Council (NHMRC) (2011[19]); and

- Ecological Criteria – shall similarly be applied to groundwater as a result of potential exposure down-gradient of the Site. Criteria for the purposes of screening groundwater data have been adopted from ANZECC / ARMCANZ (2000), Trigger Values for Freshwater 95 % Conservation of Species.

Given that the receiving water body, Devlins Creek is fresh water environment that discharges into the upper Lane Cove River, also a fresh water environment, threshold values for fresh water environments have been adopted for this assessment. It has been assumed that the receiving waters are slightly to moderately disturbed ecosystems based on their location within the Sydney metropolitan area.

Recreational criteria are based on guidance in NHMRC (2008) which indicates concentrations of substances at 10 times drinking water guideline provides a screening approach for assessing whether further consideration of risks to recreational waters is warranted.

[19] *'Australian Drinking Water Guidelines'*, National Health and Medical Research Council, ISBN 1864965118, October 2011, NHMRC (2011);

7. Quality Assurance/Quality Control

7.1 QA/QC Results

Analysis of the Quality Analysis / Quality Control (QA/QC) has been undertaken for the analytical results as summarised in **Table 7.1** and discussed in **Section 7.2**. Detailed QA/QC results are included in the laboratory reports in **Appendix N**, and in the Quality Assurance/Control in **Appendix O.**

Table 7.1 QA/QC Results Summary

Data Quality Indicator	Results	DQI met?
Precision		
Soil Blind duplicates (intra laboratory)	0-95 % RPD Intra laboratory samples were analysed at a rate greater than 1 in 20 samples.	Partial[1]
Soil split duplicates (inter laboratory)	0-33 % RPD Inter laboratory samples were analysed at a rate greater than 1 in 20 samples.	Yes
Groundwater blind duplicates (intra laboratory)	0-121 % RPD Intra laboratory samples were analysed at a rate of 1 in 3 samples.	Partial[1]
Groundwater split duplicates (inter laboratory)	0-167 % RPD Inter laboratory samples were analysed at a rate of 1 in 3 samples.	Partial[1]
Laboratory duplicates	0-65 % RPD Intra laboratory samples were analysed at a rate of 1 in 20 samples.	Partial[1]
Accuracy		
Surrogate spikes	INT-136 % Recovery Surrogate spikes were completed for all organic samples	Partial[1]
Laboratory Control Samples	70-130 % Recovery Laboratory control samples were completed for all organic and metals samples	Yes
Matrix spikes	37- 130 % Recovery Matrix spikes were completed for all organic and metals samples	Partial[1]
Representativeness		
Sampling appropriate for media and analytes	All sampling conducted in accordance with standard JBS&G procedures	Yes
Laboratory blanks	<LOR	Yes
Samples extracted and analysed within holding times.	All samples analysed within respective holding times applicable for the contaminant of concern and the relevant media.	Yes
Trip spikes	70-130 % Trip spikes were carried with the samples and one trip spike was submitted for analysis from each lab batch submitted for assessment.	Yes
Trip blanks	<LOR Trip blanks were carried with the samples and one trip spike was submitted for analysis from each lab batch submitted for assessment.	Yes
Rinsate blank	Minor heavy metals detections were reported in the rinsate samples submitted from 25 September and and 4 October 2017	Partial[1]
Comparability		
Standard operating procedures used for sample collection & handling	One JBS&G field scientist used standard operating procedures throughout works.	Yes
Standard analytical methods used	Standard analytical methods used as listed detailed in **Appendix N**	Yes
Consistent field conditions, sampling staff and laboratory analysis	Sampling was conducted by one field staff member using standard operating procedures in the same conditions throughout the works. The laboratories remained consistent throughout the investigation.	Yes

Data Quality Indicator	Results	DQI met?
Limits of reporting appropriate and consistent	Limits of reporting were consistent and appropriate.	Yes
Completeness		
Soil description & Chains of Custody completed	All borehole logs and Chains of Custody were completed appropriately.	Yes
Appropriate documentation	All appropriate field documentation processes were undertaken. Borehole logs and Calibration/ Decontamination records are included as **Appendix D** and **Appendix M** respectively.	Yes
Satisfactory frequency/result for QC samples	The QC results are considered adequate for the purposes of the investigation.	Yes
Data from critical samples is considered valid	Data from critical samples is considered valid.	Yes
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria	Appropriate laboratory analysis methods and detection limits were considered to have been achieved during the field and laboratory phases of this investigation.	Partial[1]

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

7.2 QA/QC Discussion

7.2.1 Precision

Soil Duplicates

The RPDs between primary soil sample (BH11 2.9-3.0) and intra laboratory duplicate (QC01) analytical results were within the acceptable limits with the exception of individual heavy metals: arsenic (88 %); chromium (95 %) and copper (80 %). Given the relative concentrations of these individual compounds in the primary/duplicate samples and the adopted LORs, the results are considered to be a result of values in close proximity to the LOR which result in a disproportionately large apparent RPD and the difficulties associated with collecting representative environmental samples with low concentrations of contaminants.

Additionally, the results of primary soil sample analysis for asbestos at location BH11 (2.0-3.0) and the intra laboratory duplicate (QC02) indicated that trace level asbestos fibres were detected in the duplicate sample (QC02) which were not identified in the primary sample.

The RPDs between primary soil sample (BH11 2.9-3.0) and intra laboratory duplicate (QC01A) analytical results were within the adopted acceptable limits. The results of primary soil sample analysis for asbestos at location BH11 (2.0-3.0) and the intra laboratory duplicate (QC02A) indicated that trace level asbestos fibres were detected in the duplicate sample (QC02A) which were not identified in the primary sample.

The RPDs between one soil laboratory duplicate and its associated primary sample analysed for TRH Fraction >C_{15}-C_{28} which were reported outside of the acceptable range for sample BH07 0.9-1.0 with a RPD value of 65 %.

The RPDs for the duplicates are presented in **Appendix O** and are considered to be the result of either concentrations close to the LOR or heterogeneity in the soil samples collected. The elevated RPD results are not considered to influence the outcome of the investigation. With regard to the asbestos in soil detections, a conservative position has been taken, whereby the duplicate sample results are adopted for reporting purposes as representative of the sample conditions with regard to asbestos in soil.

Groundwater Duplicates

The RPDs between primary groundwater sample (BH05) and intra laboratory duplicate (QC01-W) analytical results were within the acceptable limits apart from the following: arsenic (143 %), cadmium (40 %), copper (56 %), lead (143 %), mercury (150 %) and 2-butanone (100 %).

The RPDs between primary groundwater sample (BH05) and inter laboratory duplicate (QC01-WA) analytical results were within the acceptable limits with the exception of the following: arsenic (143 %); copper (67 %); lead (143 %), mercury (173 %) and TRH Fraction >C_{10}-C_{16} (67 %).

The RPDs for the intra-laboratory and inter-laboratory duplicates are presented in **Appendix O** and are considered to be the result of generally low total analyte concentrations, being within one order of magnitude of the laboratory LOR, whereby RPD values can appear disproportionately large when compared to actual differences in the two values. The elevated RPD results are not considered to influence the outcome of the investigation.

7.2.2 Accuracy

Surrogate spike recoveries were within the acceptable range of 70-130% for all primary soil samples analysed, with the exception of OCP surrogate, dibutylchlorendate in sample BH06 0-0.1, which was reported to have over-recovered (136 %). No OCPs were reported within this sample and, as such, the potential over recovery of OCP compounds has not affected the sample data with respect to the decisions required to be made as part of the investigation.

Surrogate spike recoveries were within the acceptable range of 70-130%, for all primary groundwater samples analysed, with the exception of the following:

- VOC surrogate 4-Bromofluorobenzene in sample BH01, which was reported to slightly under report (69 %); and
- PAH surrogates 2-Fluorbiphenyl and p-Terphenyl-d14 in samples BH04 and BH05, for which recoveries were not reported as a result of matrix interference across the surrogate recovery spikes.

The VOC surrogate in sample BH01 was reported to be within the laboratory's NATA accredited acceptable range and as such, the results for the BH01 groundwater sample are considered acceptable.

For the PAH surrogates 2-Fluorbiphenyl and p-Terphenyl-d14 in groundwater samples BH04 and BH05, detailed laboratory results provided in **Appendix N** identified matrix interference to be the cause of the non-compliance. Given, as noted below LCS and matrix spike recoveries were within the acceptable range for PAHs, the absence of the PAH surrogate recoveries is not a critical omission with regard to demonstrating the performance of the lab.

Laboratory control sample (LCS) recoveries were within the acceptable range of 70-130% for all samples analysed.

Matrix spike recoveries were within the acceptable range of 70-130% for all primary samples analysed.

On this basis the DQIs for accuracy are considered to have been achieved for this investigation.

7.2.3 Representativeness

The extraction and analysis of selected soil samples was completed within the recommended holding times for all analytes.

Minor detections of heavy metals were reported in rinsate samples collected on 25 September and 4 October 2017. Given the detection of heavy metals in the rinsate sample for groundwater sampling indicated concentrations more than an order of magnitude below the concentrations detected in the primary samples, the potential for cross-contamination which may have significantly affected the results is considered to be low. On this basis, this minor deviation from the DQI is not considered to have affected the reliability of the dataset for the intended purpose.

It is noted that, whilst all effort is made to decontaminate non-disposable sampling equipment between locations, minor particulates and clasts of particulate matter may remain affixed to joints,

folds and screws which form part of the equipment. It is considered likely that the minor detections of heavy metals are the result of dislodgement of minor particulates from a joint, fold or screw and which entered the sample container.

Trip spikes were submitted with the soil and groundwater sample batches collected during the assessment. Trip spike recoveries for BTEX compounds were within the acceptable limit of 70-130%.

Trip blanks were submitted alongside trip spikes with each laboratory batch for soil or groundwater samples collected during the assessment. There were no reported concentrations of BTEX compounds above the laboratory LOR.

All laboratory blanks analysed reported analyte concentrations less than the laboratory LOR.

All field equipment was decontaminated as per the procedure identified in **Section 5.2.3**. Collected samples were immediately placed into the sample containers, sealed and then placed into chilled eskies to minimise volatile COPC loss.

Based on the above comments, the DQIs for representativeness were considered to have been satisfactorily achieved for all DQIs or where they were reported outside the established limits, were considered not to limit the usability of the data with regard to decision making for this assessment.

7.2.4 Comparability

Eurofins, the primary laboratory, and Envirolab Services, the secondary laboratory, are NATA accredited for all analytical methods used. The laboratories used similar analytical methods and the analytical data were comparable between laboratories as indicated by the results of inter-lab duplicate analyses. Where different LORs were adopted by the laboratories, this did not impact upon the usability of the data given that all values were considerably less than the adopted assessment criteria.

The samples collected for assessment purposes are considered comparable as all samples were collected by experienced JBS&G personnel in accordance with standard JBS&G sampling methods.

7.2.5 Completeness

All laboratory and field documentation is complete and correct. Chain of custody documentation is provided with laboratory reports in **Appendix N**. Bore hole logs are presented in **Appendix D**.

The frequency of analysis of all QA/QC samples was considered appropriate and valid.

7.2.6 Sensitivity

The adopted analytical methods provided suitable LORs with respect to the adopted site assessment criteria for all samples with the exception of vinyl chloride in groundwater. No source of vinyl chloride was identified during the assessment which may indicate the potential for groundwater contamination and therefore use of the LOR was adopted for this compound as an initial screening value. This minor deviation from the DQI is not considered to have affected the reliability of the dataset for the intended purpose.

7.2.7 QA/QC Conclusions

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

On the basis of the results of the field and laboratory QA/QC program, the soil and groundwater data is 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 on 25 and 27 September 2017 at the sampling locations shown on **Figure 3**. A total of eleven boreholes were advanced for the purposes of soil inspection and sampling, via mechanical drill rig, mechanical excavator and hand tools. Borehole logs presenting a summary of observations are included in **Appendix D** in addition to presentation of comments as follows.

As discussed in **Section 2.2**, the majority of the Site is covered by existing building footprints, concrete slabs and asphaltic pavements. Unsealed surfaces were comprised entirely of garden bed verges and fill/garden batters.

Pavements overlay site soils at 8 locations, seven of which comprised concrete ranging from 0.1 m to 0.2 m in thickness (BH01, BH04, BH05, BH07, BH08, BH09 and BH10) and one asphalt (BH02). Fill material was encountered at all locations with the exception of BH08 and BH09, where pavement was underlain by natural clayey sand and sandy clay. The fill material encountered was characterised by clayey sand, sandy clay and crushed sandstone which varied in colour, heterogeneity, moisture content and inclusions. Significant anthropogenic inclusions (metal fragments, bricks, timber and terracotta) were observed within fill materials encountered at BH02, BH07 and BH11.

Where natural soils were encountered at the Site, the depths were generally not significant. Natural soil was encountered at BH01, BH04, BH08 and BH09, to a maximum depth of 0.9 m bgl. The natural soil typically comprised clayey sand or sandy clay and was primarily pink, orange and white in colour. The natural soils included weathered sandstone gravels at BH01 and BH08.

Sandstone bedrock was encountered at BH01, BH02, BH04, BH05, BH08, BH09 and BH10. At locations BH01, BH04 and BH05, air hammer drilling facilitated borehole advancement through sandstone to a depth of 6.0 m bgl. Auger drilling allowed inspection of sandstone bedrock at BH08 and BH09. At locations BH02 and BH10, the depth of sandstone was inferred due to auger refusal during drilling. The natural bedrock comprised weathered sandstone which varied in colour (yellow, white, orange, pink and light brown) and hardness.

Two boreholes were advanced within the garden verge surrounding the TfNSW office building: BH03 and BH06. Both boreholes were terminated at approximately 0.3 m bgl due to hand tool refusal upon underground obstructions. Access restrictions precluded use of mechanical drilling methodologies. Soils encountered comprised organic rich brown sand fill from the surface to the final depth of the borehole.

Two boreholes were advanced in the northern portion of the Site (BH07 and BH11). The boreholes were extended to the maximum depth achievable given the drilling methodology required as a result of Site access constraints. Fill material at BH11 was encountered from the surface to approximately 3.0 m below the ground surface, composed of a crushed sandstone material profile (0 m to 0.3 m bgl) followed by a moist clayey sand fill with inclusions of metals and bricks (0.3 m to 3.0 m bgl) to the limit of investigation (3.0 m bgl).

No odours, staining or ACM was observed throughout the soil profile at any of the investigation locations. Groundwater seepage was noted during drilling in natural soils overlying bedrock at location BH04 (1.8-2.3 m bgl) and moist soils were observed at locations BH01 (2.0 m bgl) and BH11 (0.3-1.0 m bgl).

8.2 Soil Contamination Analytical Results

Detailed laboratory reports and chain of custody documentation are provided in **Appendix L**. Summarised soil analytical data for COPCs are presented in **Table A**. Analyses of the data set are

discussed in **Section 8.2.1** to **Section 8.2.6**. Statistical analyses for the nickel data set is provided in **Appendix P.**

8.2.1 Metals

All individual heavy metal concentrations were reported at levels less than the adopted health based site assessment criteria.

Apart from several individual nickel concentrations, as discussed below, all heavy metals concentrations were reported to be below the adopted ecological assessment criteria. Nickel concentrations exceeded the adopted EIL-B (36 mg/kg) criterion in individual samples: BH01 0.2-0.3 (73 mg/kg), BH02 0.1-0.2 (86 mg/kg) and BH02 0.9-1.0 (39 mg/kg). Statistical analysis of the nickel data set for fill materials has indicated that the maximum concentration (MC) is <250 % of the criterion, the standard deviation (SD) is >half of the criterion and the 95 % UCL exceeds the nominated EIL assessment criterion. On this basis, the above individual fill sample results are considered to exceed the nominated ecological criterion.

8.2.2 Polycyclic Aromatic Hydrocarbons

Comparison of the total PAH and carcinogenic PAHs as B(a)P Toxic Equivalence Quotient (TEQ) results indicated that all sample results were less than the adopted health based assessment criteria.

Comparison of PAH results with the adopted ecological based site assessment criteria indicate that no sample concentrations exceeded the investigation criteria.

8.2.3 Total Recoverable Hydrocarbons and BTEX Compounds

All samples analysed for individual BTEX compounds and TRH fraction ranges were reported to have concentrations below the adopted health and ecological based site investigation criteria.

8.2.4 Organochlorine Pesticides and Polychlorinated Biphenyls

Concentrations of individual OCP compounds were reported to below the assessment criteria for all soil samples selected for analysis.

Concentrations of total PCB compounds were reported below the adopted assessment criteria for all soil samples selected for analysis.

8.2.5 Cyanide

Concentrations of cyanide within the analysed samples were all less than the laboratory LOR and less than the assessment criteria.

8.2.6 Asbestos

Asbestos in soil analysis results identified one sample with a concentration above the health assessment criteria. Triplicate sample QCO2A, collected from primary sample location BH11 1.0-2.0, was reported to have an AF / FA concentration of 0.002 %, exceeding the HSL criterion (0.001 %).

No visible ACM was encountered during the field based asbestos quantification undertaken.

8.3 Groundwater Field Observations

A groundwater monitoring event (GME) for the three installed monitoring wells was conducted on 4 October 2017 by Rohan Hammond, an appropriately trained and experienced environmental consultant. A summary of groundwater conditions encountered during the GME is presented in **Table 8.2** and **Table 8.3** below. Groundwater monitoring well locations are provided on **Figure 3B**.

Table 8.1 Groundwater Geospatial Details (24 July 2017)

Well Reference	Easting	Northing	Well Height (m AHD top of casing)	Depth to Groundwater (m below top of casing)	Groundwater Level (mAHD)
BH01	322237.6	6261636.7	82.925	2.48	80.465
BH04	322253.1	6261653.1	83.06	3.17	79.89
BH05	322232.8	6261687.9	80.53	2.56	77.99

MGA coordinate and AHD values were provided by a registered surveyor for BH01, BH04 and BH05. The surveyor's report is provided as part of **Appendix Q**.

Table 8.2 Groundwater Field Physicochemical Parameters

Well Reference	Dissolved Oxygen (mg/L)	Electrical Conductivity (mS/cm)	pH (units)	Oxidation Reduction Potential (mV)[1]	Temperature (°C)
BH01	7.62	3.72	4.74	142.1	18.7
BH04	7.73	3.80	5.55	117.1	19.5
BH05	4.53	3.93	5.45	100.4	17.9

1. Oxidation Reduction Potential was measured with an Ag/Ag-Cl probe in a solution of 3.5 moles potassium chloride and deionized water.

Table 8.3 Groundwater Observations

Well Reference	Odour	Sheen	Turbidity / Colour	Light non-aqueous phase liquid (LNAPL)
BH01	No odour	No sheen	Clear / colourless	None observed
BH04	No odour	No sheen	Clear / colourless	None observed
BH05	No odour	No sheen	Mildly turbid / pale brown	None observed

8.4 Groundwater Analytical Results

Detailed laboratory reports and chain of custody documentation are provided in **Appendix N**. Summarised soil analytical data for COPCs are presented in **Table B**. The results are discussed in **Section 8.4.1** to **Section 8.4.4**.

8.4.1 Metals

Heavy metals concentrations above the site assessment criteria were detected as follows:

- The concentration of cadmium exceeded the ecological assessment criterion (0.0002 mg/L) in sample BH04 (0.0003 mg/L) by less than one order of magnitude;
- The concentration of chromium exceeded the ecological assessment criterion (0.001 mg/L) in sample BH01 (0.003 mg/L) by less than one order of magnitude;
- The concentrations of copper exceeded the ecological assessment criterion (0.0014 mg/L) in samples: BH01 (0.051 mg/L), BH04 (0.026 mg/L) and BH05 (0.016 mg/L), by one order of magnitude;
- The concentration of lead exceeded the ecological assessment criterion (0.0034 mg/L) in sample BH05 (0.006 mg/L) by less than one order of magnitude;
- The concentration of mercury exceeded the ecological assessment criterion (0.0006 mg/L) in sample BH05 (0.0007 mg/L) by less than one order of magnitude;
- The concentration of nickel exceeded both the ecological assessment criterion (0.011 mg/L) and the drinking water criterion (0.02 mg/L) in all samples: BH01 (0.13 mg/L), BH04 (0.23 mg/L) and BH05 (0.14 mg/L) by one order of magnitude. Nickel concentrations also exceeded the adopted recreational exposure criterion (0.2 mg/L) in sample BH04; and
- The concentration of zinc exceeded the ecological assessment criterion (0.008 mg/L) in samples: BH01 (0.26 mg/L), BH04 (0.56 mg/L) and BH05 (0.31 mg/L) by two orders of magnitude.

8.4.2 Recoverable Hydrocarbons and BTEX Compounds

TRH fraction ranges for the analysed samples were all reported to be below the laboratory LOR.

Individual BTEX concentrations within the analysed samples were generally reported to be less than the laboratory LOR, with the exception of benzene in sample BH01. Groundwater sample BH01 was

reported to have a benzene concentration of 0.004 mg/L, exceeding the health based groundwater assessment criterion (0.001 mg/L) by less than one order of magnitude.

8.4.3 Polycyclic Aromatic Hydrocarbons

PAH compound concentrations were generally reported to be below the laboratory LORs and less than the adopted site criteria within the analysed samples, with the exception of the following:

- B(a)P was detected in sample BH05 at a concentration of 0.0001 mg/L, exceeding the adopted health based assessment criterion (0.00001 mg/L) by one order of magnitude; and
- Anthracene was detected in sample BH01 at a concentration of 0.0001 mg/L, above the laboratory LOR. It is noted that no assessment criterion for anthracene is included in the criteria sets adopted and therefore the laboratory LOR has been adopted as a screening level criteria.

8.4.4 Volatile Organic Compounds

VOC compounds other than the BTEX compounds discussed in **Section 8.4.2**, were all reported to be at concentrations below the adopted site criteria within the analysed samples.

Detections of 2-Butanone (methyl ethyl ketone, MEK) were reported in all ground water samples at concentrations: BH01 0.011 mg/L, BH02 0.012 mg/L and BH05 0.003 mg/L. No specific criteria were adopted for 2-butanone and therefore these results are considered to exceed the adopted screening level criteria (set as the LOR).

9. Discussion

Based on the decision-making process for assessing urban redevelopment sites detailed in DEC (2006) and discussed in **Section 6.1.2**, the decisions required to be made are discussed below.

9.1 Potential Risks to Future Onsite Receptors

In reference to the decision rules developed in **Section 5.1.5**, the following three sections discuss potential risks posed to future onsite receptors from impacted media currently present at the Site.

9.1.1 Soil Contamination

The results of the sampling and laboratory analysis program have indicated that the Site soils, including both fill material and natural soils, have not been significantly impacted as a result of historical and/or current site activities with regard to potential future land use scenarios. All chemical contaminant results were reported at concentrations less than the adopted health based site assessment criteria.

Asbestos was detected above the site assessment criteria in one of the analysed samples (QC02A from primary sample BH11 (2.0-3.0). Given the historical usage of the Site, the presence of anthropogenic materials in fill and detections of asbestos fibres at BH11, there remains the potential for additional asbestos impacts in fill material at the Site. As the material is currently buried at significant depth below ground, active management of the material under the current land use scenario is not considered necessary. Specific management of asbestos in soil risks will require further consideration with regard to development of the future land use details.

With regard to the ecological based site assessment objectives, slightly elevated concentrations of nickel have been detected in shallow fill material at locations BH01 (0.2–0.3 m bgl) and BH02 (0.1-0.2 m bgl and 0.9-1.0 m bgl). Should these materials be proposed to be retained within landscaped areas as part of future development scenarios, further consideration may be required with regard to the suitability of these materials for this use. Given the likely scenario of mixed use/high density residential development of the site, it is considered probable that such materials will be either removed from the site for bulk excavation works or underlying future buildings and as such, no specific management of such materials will be required.

9.1.2 Potential Risks from Groundwater

To assess site groundwater conditions, monitoring wells were installed at the inferred upgradient site extent (BH01) and generally within the site (BH04 and BH05). Representative samples were subsequently collected and analysed for contaminants of potential concern.

Comparison of analytical results with the adopted EPA (HSL-B) and Australian Drinking Water (health and aesthetics) criteria for assessment has identified the occurrence of contaminant concentrations within groundwater in exceedance of the adopted criteria at groundwater wells within the site. Detections of nickel, B(a)P and benzene were present at up to one order of magnitude above than the drinking water criteria. Cadmium, chromium, copper, lead and mercury were detected at concentrations of less than one order of magnitude above the site assessment criteria. One contaminant concentration (nickel in BH04) also slightly exceeded the adopted recreational site assessment criteria. With regard to the depth to groundwater, the anticipated flow rates and future land uses, exposure of future site users to groundwater is anticipated to be limited to contact exposures during future sub-ground level construction (if applicable). On this basis, the identified exceedances are unlikely to require specific management/remediation actions during/following development of the site.

There were no gross indicators of contaminant migration onto the site from the adjoining upgradient service station facilities. Trace concentrations of benzene were detected in BH01 representative of concentrations entering the site from this direction, however these were present at levels

significantly below adopted site assessment criteria. Further, no sheen or odours were noted to be associated with the groundwater at this location, that would represent an aesthetic concern with regard to future development of the site.

The identified exceedances in groundwater at the upgradient monitoring well location (representative of groundwater migrating onto the site), in combination with the absence of significant soil contamination conditions at the Site are considered to be indicative of groundwater conditions typical of a built up urban environment within this geological setting. On this basis, specific management of the potential for groundwater contamination within the site is not required. Comparison of results with ecological criteria are discussed in **Section 9.5** below.

9.2 Background Soil Contamination

Contaminant concentrations within natural soil samples analysed for this assessment were generally within published background ranges as detailed in **Section 6.2.1** and did not exceed any of the adopted site investigation criteria. On this basis, there are considered not to be any issues associated with elevated background soil contaminant concentrations that require further consideration.

9.3 Chemical Mixtures

There were no analytical results which indicated the presence of chemical mixture(s) requiring further consideration with regard to identified environmental and/or health based site risks.

9.4 Aesthetic Issues

No visible ACM, odours, discolouration or staining were noted within soils and/or groundwater during the investigation. On this basis, no aesthetic issues in relation to soil and/or groundwater are considered present at the Site which cannot be readily dealt with during redevelopment of the Site.

9.5 Potential Migration of Contaminants

As discussed in **Section 9.1** soil samples analysed for this assessment were reported to have chemical contaminant concentrations less than the site assessment criteria or laboratory LOR, with the exception of one exceedance of health based criteria for asbestos in soil which was noted to occur at depth at one sampling location (BH11 2.0 – 3.0) and minor EIL exceedances reported for nickel.

Given the absence of significant chemical contaminant conditions present within soils at the Site, the potential for contamination in soils to migrate offsite (via windblown dust or soil leachate infiltration into the groundwater) was considered to be low for the period that hardstand pavements are maintained. The potential for migration of contaminated soil during redevelopment works may be appropriately addressed via implementation of standard soil and water management techniques (dust controls, surface water and sediment detention, etc).

Should proposed redevelopment details comprise the excavation or otherwise disturbance of soils at depth, there is the risk that known/potential asbestos impacted soil may be exposed. As such, management of asbestos in soil risks will be required to be further considered once development plans are known to enable development of a suitable strategy.

Laboratory analysis of groundwater samples identified the presence of heavy metals concentrations which generally exceeded the ecological based site assessment criteria, most notably nickel and zinc (2-3 orders of magnitude). Concentrations of copper, nickel and zinc were generally higher in wells BH01 and BH04 than in BH05. Review of groundwater geospatial characteristics, presented in **Section 8.3**, has indicated that the groundwater flow direction is from southeast to northwest, confirming that the wells installed along the southern site boundary (BH01 and BH04) are 'upgradient' wells.

As such, the most significant heavy metals concentrations were identified within the upgradient wells, with concentrations declining during migration of groundwater across the site. The elevated

concentrations are considered to be migrating onto the site, possibly indicative of natural hydro-geochemical processes and/or historical industrial uses of the surrounding site area. Given the offsite source of contamination, specific management of groundwater contaminant migration risks is not considered necessary.

No indicators of volatile contaminants were observed during the site investigation and laboratory results did not identify significant volatile groundwater or soil contamination at the Site. On this basis, there is no evidence to indicate that there are unacceptable risks for offsite migration of volatile contamination present at the Site.

9.6 Requirement for a Site Management Strategy

Based on the proposed land use, the scope of work completed for this assessment, and the limitations presented in **Section 11**, no significant widespread contamination impacts have been identified at the site that would require consideration in progressing future development schemes for the site. However, it is noted that low concentrations of asbestos in soil were identified at depth in fill material at one sampling location (BH11 2.0-3.0). Given the material is currently isolated at depth, active management of this find is not required under the current land use, however, further consideration of asbestos in soil will be required if site redevelopment works results in disturbance to known/suspected asbestos contaminated soils.

10. Conclusions

In accordance with the scope of work completed and the limitations in **Section 11**, the following conclusions are provided:

- The results of the sampling and laboratory analysis program have indicated that the Site soils, including both fill material and natural soils, are generally free from significant chemical contamination impact that would require future remediation/management activities;
- Asbestos fines / friable asbestos was detected, at a concentration indicating a potential risk to future site uses, in soil from location BH11 at depth 2.0-3.0 m bgl. Given the depth to the material and current ground surface condition, the material does not currently require active management. Consideration of asbestos in soils contamination will be required should site redevelopment activities result in the disturbance of known/suspected asbestos contaminated soils.
- Given the historical usage of the Site, the broader presence of anthropogenic materials in fill and detections of asbestos fibres in fill material at BH11, there remains the potential for additional asbestos impacts in fill material to occur at the Site which have not yet been identified. Specific management of asbestos in soil risks are not currently required under the existing land use arrangements, however, consideration of the potential asbestos impacts should be made during potential site redevelopment planning to ensure risks are appropriately addressed;
- Slightly elevated concentrations of nickel have been detected in shallow fill material at location BH01 (0.2–0.3 m bgl) and BH02 (0.1-0.2 m bgl and 0.9-1.0 m bgl). The concentrations of nickel at these locations represent a statistically significant exceedance of the ecological investigation criteria and the need for management of these soils will need to be considered should future redevelopment schemes result in material present within plant root zones in landscaped areas;
- Exceedances of the Site assessment criteria have been identified within groundwater at installed monitoring well locations. Groundwater contaminant concentrations were identified to significantly exceed ecological criteria for several heavy metals and slightly exceed the health based criteria for nickel, benzene and benzo(a)pyrene at one or more sampling locations;
- The highest heavy metal concentrations in groundwater were identified within samples taken from the upgradient sample locations indicating, in combination with the absence of significant heavy metal concentrations in soils at the Site, that the heavy metal concentrations originate from an off-site source or are indicative of geological characteristics in the broader area. Given the concentrations in groundwater entering the site and the minor nature of the exceedances of the groundwater criteria for health based assessment, specific management of groundwater contamination risks is not considered necessary at this stage;
- Trace concentrations of benzene were detected in the upgradient most groundwater monitoring location, representative of conditions entering the site from this direction. The reported groundwater benzene concentrations are considered not be indicative of significant contamination migration currently, or previously, occurring from this off-site source. Further, no sheen or odours were noted to be associated with the soil and/or groundwater at this location, that would represent an aesthetic concern with regard to future development of the site; and

- Based on the proposed land use, the scope of work completed for this assessment, and the limitations presented in **Section 11**, it is considered that there are no outstanding contamination issues that would preclude redevelopment of the Site for the proposed land uses, subject to the management of the asbestos in fill material impacts and further consideration of the nickel in soil concentrations with regard to ecological impacts during redevelopment of the Site.

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.

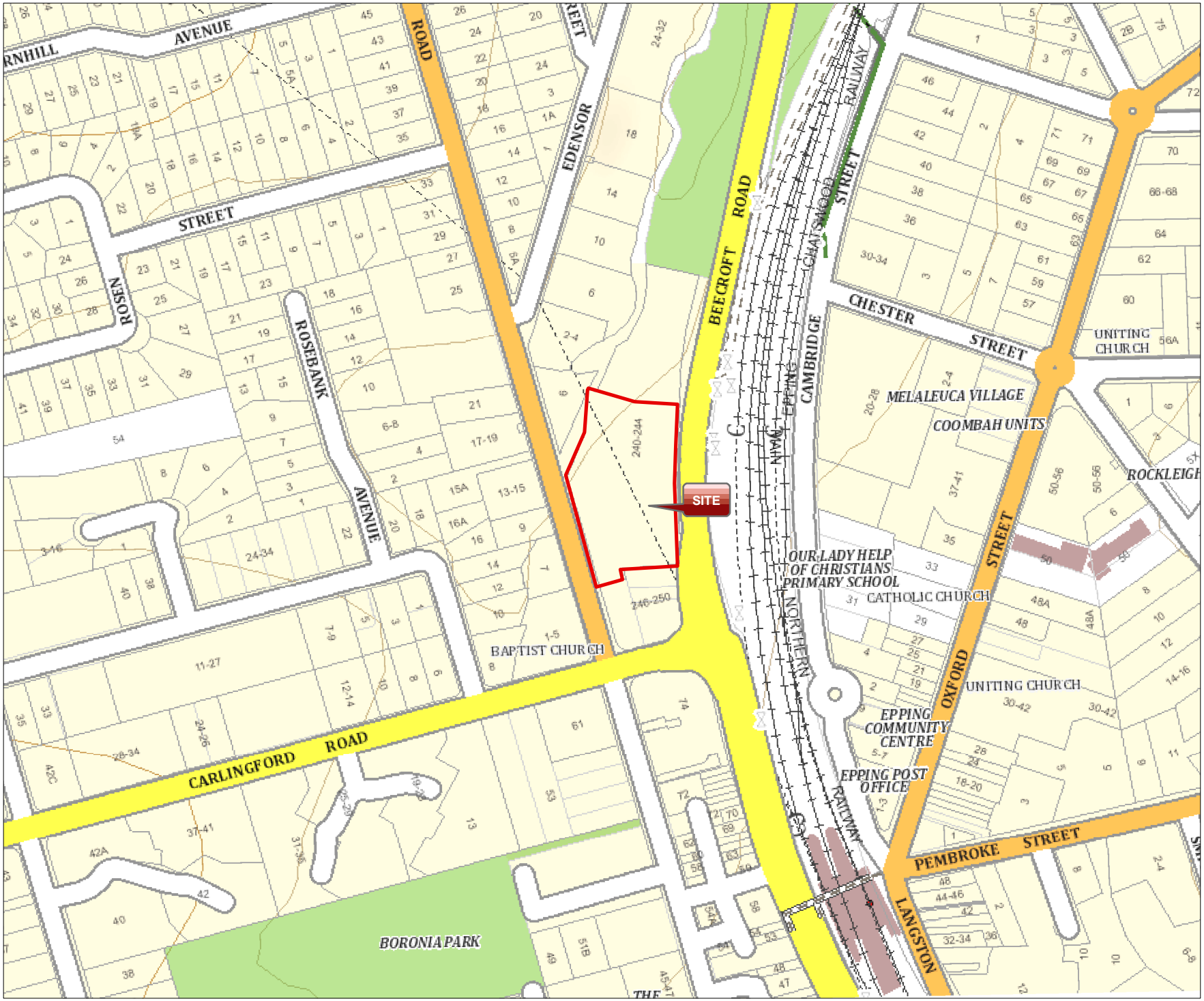
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the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

JBS&G

Job No: 54111	
Client: UrbanGrowth NSW	
Version: R01 Rev A	Date: 18-Oct-2017
Drawn By: AV	Checked By: RH

Scale 1:3,800

0 40 80

metres

Coor. Sys. GDA 1994 MGA Zone 56

240-244 Beecroft Road
Epping, NSW

SITE LOCATION

FIGURE: 1

File Name: 54111_01
Reference: Six Maps - https://maps.six.nsw.gov.au/ - Imagery 06-01-2014



SITE BOUNDARY CO-ORDINATES		
ID	Easting	Northing
A	322284.26	6261756.68
B	322281.82	6261698.55
C	322284.06	6261637.98
D	322242.19	6261635.34
E	322243.61	6261627.82
F	322224.3	6261622.33
G	322201.94	6261704.65
H	322215.71	6261736.4
I	322218.08	6261767.49
J	322218.7	6261768.61
K	322252.55	6261758.92

Legend:

Approximate Site Boundary

Lot 22 DP1180959

JBS&G

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev A	Date: 18-Oct-2017
Drawn By: BC	Checked By: RH

Scale 1:900

0 10 20

metres

Coor. Sys. GDA 1994 MGA Zone 56

240-244 Beecroft Road
Epping, NSW

SITE LAYOUT

FIGURE: 2

File Name: 54111_02
Reference: NearMaps- http://www.nearmap.com.au/- Imagery 22-08-2017



Legend:

- Approximate Site Boundary
- Sample Location
- (1.0m) Depth of Fill

JBS&G

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev A	Date: 18-Oct-2017
Drawn By: BC	Checked By: RH

Scale 1:900

0 10 20
metres

Coor. Sys. GDA 1994 MGA Zone 56

240-244 Beecroft Road
Epping, NSW

SAMPLE LOCATIONS & DEPTH OF FILL MATERIAL

FIGURE: 3

File Name: 54111_03
Reference: NearMaps- http://www.nearmap.com.au/- Imagery 22-08-2017



BH02	Depth (m BGS)	Concentration (mg/kg)	Criteria
Analyte			
Nickel	0.1 - 0.2	86	EIL
	0.9 - 1.0	39	EIL

BH01	Depth (m BGS)	Concentration (mg/kg)	Criteria
Analyte			
Nickel	0.2 - 0.3	73	EIL

Legend:

- Approximate Site Boundary
- Sample Location
- (1.0m) Depth of Fill

JBS&G

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev A | Date: 20-Oct-2017

Drawn By: BC | Checked By: RH

Scale 1:900

0 10 20

metres

Coor. Sys. GDA 1994 MGA Zone 56

240-244 Beecroft Road
Epping, NSW

SOIL CRITERIA EXCEEDANCES

FIGURE: 4

File Name: 54111_04
Reference: NearMaps- http://www.nearmap.com.au/- Imagery 22-08-2017



BH05 Analyte	Concentration (mg/L)	Criteria
Copper (Filtered)	0.016	ANZECC
Lead (Filtered)	0.006	ANZECC
Mercury (Inorganic) (Filtered)	0.0007	ANZECC
Nickel (Filtered)	0.14	ADW - Health
Zinc (Filtered)	0.31	ANZECC

BH01 Analyte	Concentration (mg/L)	Criteria
Chromium Total (Filtered)	0.003	ANZECC
Copper (Filtered)	0.051	ANZECC
Nickel (Filtered)	0.13	ADW - Health
Zinc (Filtered)	0.26	ANZECC
Benzene	0.004	ADW - Health

BH04 Analyte	Concentration (mg/L)	Criteria
Cadmium (Filtered)	0.0003	ANZECC
Copper (Filtered)	0.026	ANZECC
Nickel (Filtered)	0.23	ADW (Factor 10) - Health
Zinc (Filtered)	0.56	ANZECC

Legend:

- Approximate Site Boundary
- Sample Location
- (1.0m) Depth of Fill

JBS&G

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev A | Date: 20-Oct-2017

Drawn By: BC | Checked By: RH

Scale 1:900

0 10 20
metres

Coor. Sys. GDA 1994 MGA Zone 56

240-244 Beecroft Road Epping, NSW

GROUNDWATER CRITERIA EXCEEDANCES

FIGURE: 5

File Name: 54111_05
Reference: NearMaps- http://www.nearmap.com.au/- Imagery 22-08-2017

Table A: Soil Analytical Results

Table A) Soil Analytical Results
Project Number: 54111
Project Name: NWUT Epping Due Diligence

	Metals & Metalloids								Non-Metallic Inorganics	TRHs (NEPC 2013)						BTEX					
	Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	Cyanide	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C16 less Naphthalene (F2)	C6-C10 Fraction	C6-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	2.00	0.40	1.00	1.00	1.00	0.10	1.00	1.00	0.50	50.00	100.00	100.00	50.00	20.00	20.00	0.10	0.10	0.10	0.10	0.20	0.30
Health Based Criteria																					
NEPM 2013 Soil HIL B	500	150	500	30000	1200	120	1200	60000	300												
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m													110		45	0.5	55	160			40
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 1 to <2m													240		70	0.5	NL	220			60
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 2 to <4m													440		110	0.5	NL	310			95
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Recreational - HSL C																					
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL B																					
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																					
Ecological and Management Based Criteria																					
NEPC 2013 EIL, EILs Aged Sediment	100			109	1403		36	212													
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil											300	2800	120		180	50	70	85			105
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse										1000	2500	10000		700							
Sample ID	**Location**	**Sample Depth**	**Date**	**Lithological Type**	**Report Number**																	
BH01_0.2-0.3	BH01	0.2-0.3	27/09/2017	Fill - Sand	565244	13	<0.4	72	28	24	<0.1	73	62	<5	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH01_0.4-0.5	BH01	0.4-0.5	27/09/2017	Fill - Sand	565244	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02 0.1-0.2	BH02	0.1-0.2	25/09/2017	Fill - Sand	565129	<2	<0.4	25	49	5.8	<0.1	86	54	-	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH02 0.1-1.0	BH02	0.1-1	25/09/2017	Fill - Sand & Clay	565129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02 0.9-1.0	BH02	0.9-1	25/09/2017	Fill - Sandy Clay	565129	4.3	<0.4	23	29	24	<0.1	39	58	-	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH02 1.0-1.7	BH02	1-1.7	25/09/2017	Fill - Sandy Clay	565129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03 0.1-0.3	BH03	0.1-0.3	25/09/2017	Fill - Sand	565129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_0.12-0.2	BH04	0.12-0.2	27/09/2017	Fill - Clayey Sand	565244	<2	<0.4	7.1	<5	7.9	<0.1	<5	10	-	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH04_0.12-0.5	BH04	0.12-0.5	27/09/2017	Fill - Clayey Sand	565244	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_0.4-0.5	BH04	0.4-0.5	27/09/2017	Fill - Sand	565244	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_1.9-2.0	BH04	1.9-2	27/09/2017	Natural - Sandstone	565244	6.6	<0.4	16	13	13	<0.1	<5	34	-	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH04_2.8-3.0	BH04	2.8-3	27/09/2017	Natural - Sandstone	565244	3.5	<0.4	320	7.1	6.3	<0.1	<5	21	-	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH05_0.3-0.4	BH05	0.3-0.4	27/09/2017	Fill - Sandy Silty Clay	565244	2.8	<0.4	6.6	<5	19	<0.1	<5	24	-	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH06_0-0.1	BH06	0-0.1	27/09/2017	Fill - Sand	565244	2.5	<0.4	7.8	13	18	<0.1	<5	39	-	<50	160	120	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH06_0-0.3	BH06	0-0.3	27/09/2017	Fill - Sand	565244	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07 0.12-1.0	BH07	0.12-1	25/09/2017	Fill - Sandy Clay	565129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07 0.4-0.5	BH07	0.4-0.5	25/09/2017	Fill - Sandy Clay	565129	7	<0.4	23	11	40	<0.1	7	66	<5	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH07 0.9-1.0	BH07	0.9-1	25/09/2017	Fill - Sandy Clay	565129	3.2	<0.4	8.6	6.4	27	<0.1	<5	39	-	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH10 0.12-0.2	BH10	0.12-0.2	25/09/2017	Fill - Crushed Sandstone	565129	<2	<0.4	7.1	<5	8.4	<0.1	<5	12	<5	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH10 0.12-1.0	BH10	0.12-1	25/09/2017	Fill - Crushed Sandstone	565129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11 0.9-1.0	BH11	0.9-1	25/09/2017	Fill - Clayey Sand	565129	5.3	<0.4	12	13	53	<0.1	6.5	61	-	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH11 0-1.0	BH11	0-1	25/09/2017	Fill - Clayey Sand	565129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11 1.0-2.0	BH11	1-2	25/09/2017	Fill - Clayey Sand	565129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11 2.0-3.0	BH11	2-3	25/09/2017	Fill - Clayey Sand	565129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02	BH11	2-3	25/09/2017	Fill - Clayey Sand	565129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02A	BH11	2-3	25/09/2017	Fill - Clayey Sand	176453	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11 2.9-3.0	BH11	2.9-3	25/09/2017	Fill - Sandy Clay	565129	3.9	<0.4	11	9.9	28	<0.1	<5	36	<5	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
QC01	BH11	2.9-3	25/09/2017	Fill - Sandy Clay	565129	10	<0.4	31	23	46	<0.1	7.4	58	<5	<50	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
QC01A	BH11	2.9-3	25/09/2017	Fill - Sandy Clay	176453	<4	<0.4	10	10	20	<0.1	4	32	<0.5	<50	<100	<100	<50	<25	<25	<0.2	<1	<0.5	<1	<2	<1

Data Comments

#1 AF:Chrysotile and amosite asbestos detected in the form of loose fibre bundles.No asbestos detected at the reporting limit of 0.001% w/w.*
#2 No asbestos detected at the reporting limit of 0.001% w/w.*Organic fibre detected.No respirable fibres detected.
#3 No asbestos detected.Organic fibre detected.No respirable fibres detected.
#4 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#5 No respirable fibres detected
#6 Organic fibres detected.
#7 ESDAT Combined.
#8 Nil

Table A) Soil Analytical Results
Project Number: 54111
Project Name: NWUT Epping Due Diligence

| | | | | | | Polycyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | | | | | | | | Polychlorinated Biphenyls | | | | | | | | Organochlorine Pesticides | | | | | | | | | | | | | | | | | | |

Table A) Soil Analytical Results
Project Number: 54111
Project Name: NWUT Epping Due Diligence

						Asbestos										Ionic Balance		
						Approx. Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Cation Exchange Capacity	EC 1:5 soil:water	pH 1:5 soil:water
						g	%w/w	%w/w	g	g	g	g	g	g	g	meq/100g	µS/cm	ph Units
EQL																0.05	10.00	0.10
Health Based Criteria																		
NEPM 2013 Soil HIL B																		
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m																		
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 1 to <2m																		
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 2 to <4m																		
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Recreational - HSL C							0.02											
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL B							0.04											
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL								0.001										
Ecological and Management Based Criteria																		
NEPC 2013 EIL, EILs Aged Sediment																		
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																		
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																		
Sample ID	**Location**	**Sample Depth**	**Date**	**Lithological Type**	**Report Number**													
BH01_0.2-0.3	BH01	0.2-0.3	27/09/2017	Fill - Sand	565244	803	0	0	0	0	0	0	0	-	0	-	-	-
BH01_0.4-0.5	BH01	0.4-0.5	27/09/2017	Fill - Sand	565244	-	-	-	-	-	-	-	-	-	-	2.5	120	4.6
BH02 0.1-0.2	BH02	0.1-0.2	25/09/2017	Fill - Sand	565129	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02 0.1-1.0	BH02	0.1-1	25/09/2017	Fill - Sand & Clay	565129	990	0	0	0	0	0	0	0	0	0	-	-	-
BH02 0.9-1.0	BH02	0.9-1	25/09/2017	Fill - Sandy Clay	565129	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02 1.0-1.7	BH02	1-1.7	25/09/2017	Fill - Sandy Clay	565129	1620	0	0	0	0	0	0	0	0	0	-	-	-
BH03 0.1-0.3	BH03	0.1-0.3	25/09/2017	Fill - Sand	565129	517	0	0	0	0	0	0	0	0	0	-	-	-
BH04_0.12-0.2	BH04	0.12-0.2	27/09/2017	Fill - Clayey Sand	565244	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_0.12-0.5	BH04	0.12-0.5	27/09/2017	Fill - Clayey Sand	565244	767	0	0	0	0	0	0	0	-	0	-	-	-
BH04_0.4-0.5	BH04	0.4-0.5	27/09/2017	Fill - Sand	565244	-	-	-	-	-	-	-	-	-	-	1.6	18	5.2
BH04_1.9-2.0	BH04	1.9-2	27/09/2017	Natural - Sandstone	565244	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_2.8-3.0	BH04	2.8-3	27/09/2017	Natural - Sandstone	565244	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05_0.3-0.4	BH05	0.3-0.4	27/09/2017	Fill - Sandy Silty Clay	565244	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06_0-0.1	BH06	0-0.1	27/09/2017	Fill - Sand	565244	-	-	-	-	-	-	-	-	-	-	28	65	5.4
BH06_0-0.3	BH06	0-0.3	27/09/2017	Fill - Sand	565244	294	0	0	0	0	0	0	0	-	0	-	-	-
BH07 0.12-1.0	BH07	0.12-1	25/09/2017	Fill - Sandy Clay	565129	929	0	0	0	0	0	0	0	0	0	-	-	-
BH07 0.4-0.5	BH07	0.4-0.5	25/09/2017	Fill - Sandy Clay	565129	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07 0.9-1.0	BH07	0.9-1	25/09/2017	Fill - Sandy Clay	565129	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10 0.12-0.2	BH10	0.12-0.2	25/09/2017	Fill - Crushed Sandstone	565129	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10 0.12-1.0	BH10	0.12-1	25/09/2017	Fill - Crushed Sandstone	565129	914	0	0	0	0	0	0	0	0	0	-	-	-
BH11 0.9-1.0	BH11	0.9-1	25/09/2017	Fill - Clayey Sand	565129	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11 0-1.0	BH11	0-1	25/09/2017	Fill - Clayey Sand	565129	714	0	0	0	0	0	0	0	0	0	-	-	-
BH11 1.0-2.0	BH11	1-2	25/09/2017	Fill - Clayey Sand	565129	636	0	0.0002	0	0	0.0032	0.0013	0	0	0.0013	-	-	-
BH11 2.0-3.0	BH11	2-3	25/09/2017	Fill - Clayey Sand	565129	694	0	0	0	0	0	0	0	0	0	-	-	-
QC02	BH11	2-3	25/09/2017	Fill - Clayey Sand	565129	822	0	0.0005	0	0	0.0068	0.0027	0.0016	0.0016	0.0043	-	-	-
QC02A	BH11	2-3	25/09/2017	Fill - Clayey Sand	176453	917	0	0.002	0	0	0	0	0	0	0	-	-	-
BH11 2.9-3.0	BH11	2.9-3	25/09/2017	Fill - Sandy Clay	565129	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01	BH11	2.9-3	25/09/2017	Fill - Sandy Clay	565129	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01A	BH11	2.9-3	25/09/2017	Fill - Sandy Clay	176453	-	-	-	-	-	-	-	-	-	-	-	-	-

Data Comments

#1 AF:Chrysotile and amosite asbestos detected in the form of loose fibre bundles.No asbestos detected at the reporting limit of 0.00
#2 No asbestos detected at the reporting limit of 0.001% w/w.*Organic fibre detected.No respirable fibres detected.
#3 No asbestos detected.Organic fibre detected.No respirable fibres detected.
#4 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#5 No respirable fibres detected
#6 Organic fibres detected.
#7 ESDAT Combined.
#8 Nil

Table B: Groundwater Analytical Results

Table C) Groundwater Analytical Results
Project Number: 54111
Project Name: NWUT Epping Due Diligence

	Metals & Metalloids								Non-Metallic Inorganics	Chlorinated Alkanes																	Chlorinated Alkenes										Trihalomethanes				TRHs (NEPC 2013)						BTEX					
	Arsenic (Total) (Filtered)	Cadmium (Filtered)	Chromium (Total) (Filtered)	Copper (Filtered)	Lead (Filtered)	Mercury (Inorganic) (Filtered)	Nickel (Filtered)	Zinc (Filtered)	Cyanide	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	Bromochloromethane	Carbon tetrachloride	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane	1,1-dichloroethene	3-chloropropene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	Bromodichloromethane	Chloroform	Dibromochloromethane	Tribromomethane	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C16 less Naphthalene (F2)	C6-C10 Fraction	C6-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (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	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.001	0.0001	0.001	0.001	0.001	0.0001	0.001	0.001	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.05	0.10	0.10	0.05	0.01	0.01	0.001	0.001	0.001	0.001	0.002	0.003
ANZECC 2000 Fresh Water 95%		0.0002	0.001	0.0014	0.0034	0.0006	0.011	0.008	0.007				6.5																																	0.95	0.08	0.18	0.35		0.625
Australian Drinking Water 2011 (Mar 2015) - Aesthetic				1				3																																						0.003	0.025			0.02
Australian Drinking Water 2011 (Mar 2015) - Health	0.01	0.002		2	0.01	0.001	0.02		0.08							0.003				0.003				0.004		0.03				0.05			0.02	0.0003	0.25	0.25	0.25	0.25							0.001	0.3	0.8			0.6
Australian Drinking Water 2011 (Mar 2015) (Factor 10) - Aesthetic				10				30																																						0.03	0.25			0.2
Australian Drinking Water 2011 (Mar 2015) (Factor 10) - Health	0.1	0.02		20	0.1	0.01	0.2		0.8							0.03				0.03				0.04		0.3				0.5			0.2	0.003	2.5	2.5	2.5	2.5							0.01	3	8			6
NEPM 2013 Groundwater HSL D for Vapour Intrusion - Sand 2 to <4 m																																											1		1	0.8					

| Groundwater Samples | | | | | | | | | | | | | | | | | | |

Table C) Groundwater Analytical Results
Project Number: 54111
Project Name: NWUT Epping Due Diligence

	Polycyclic Aromatic Hydrocarbons																	Monocyclic Aromatic Hydrocarbons					Miscellaneous Hydrocarbons			Chlorinated Benzenes					Solvents	Organic Sulfur Compounds
	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	Bromobenzene	Isopropylbenzene	Styrene	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromomethane	Dibromomethane	Iodomethane	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	2-Propanone (Acetone)	Carbon disulfide
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L
EQL	<0.00005	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	1.00	0.001
ANZECC 2000 Fresh Water 95%														0.016															0.16	0.26	0.06				
Australian Drinking Water 2011 (Mar 2015) - Aesthetic																						0.004							0.001	0.02	0.003	0.01			
Australian Drinking Water 2011 (Mar 2015) - Health					0.00001																	0.03	0.001			0.001			1.5		0.04	0.3			
Australian Drinking Water 2011 (Mar 2015) (Factor 10) - Aesthetic																						0.04							0.01	0.2	0.03	0.1			
Australian Drinking Water 2011 (Mar 2015) (Factor 10) - Health					0.0001																	0.3	0.01			0.01			15		0.4	3			
NEPM 2013 Groundwater HSL D for Vapour Intrusion - Sand 2 to <4 m																																		
Groundwater Samples																																		
Sample	**Sample Date**	**Depth**	**Lab Report Number**																															
BH01	4/10/2017	2.48	567165	<0.00005	<0.00005	**0.0001**	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.011**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<1	<0.001
BH04	4/10/2017	3.17	567165	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.012**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<1	<0.001
BH05	4/10/2017	2.56	567165	<0.00005	<0.00005	<0.00005	<0.00005	0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.003**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<1	<0.001
QC01_W	4/10/2017	177076-1	177076	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	-	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.01	<0.001	-	<0.001	<0.001	<0.001	<0.001	-	-
QC01-WA	4/10/2017	S17-Oc04486	566246	<0.00005	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<1	<0.001

Data Comments

#1 NIL (+)VE

Appendix A Photographic Log

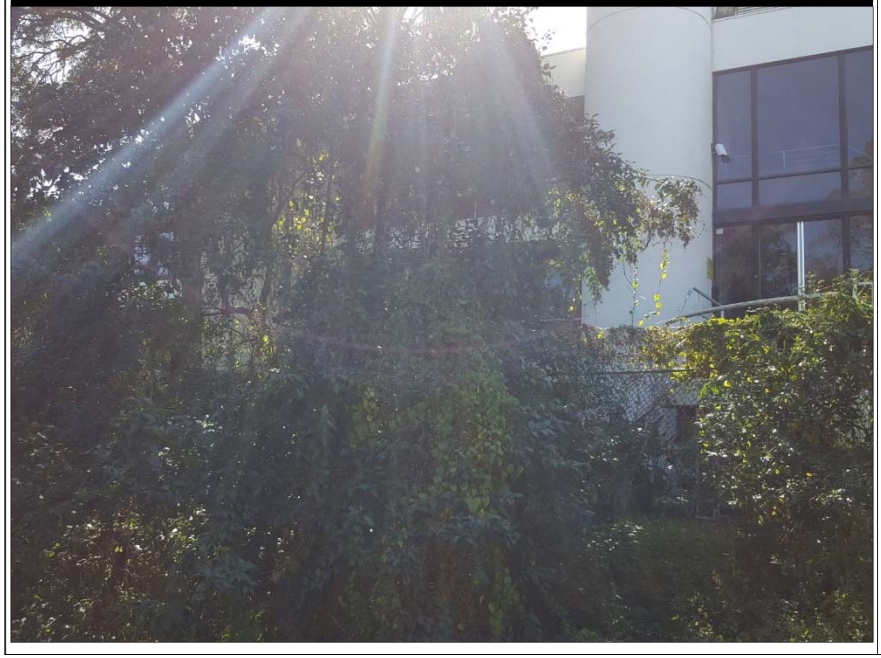
1 – WEST BOUNDARY FACING NORTHWEST



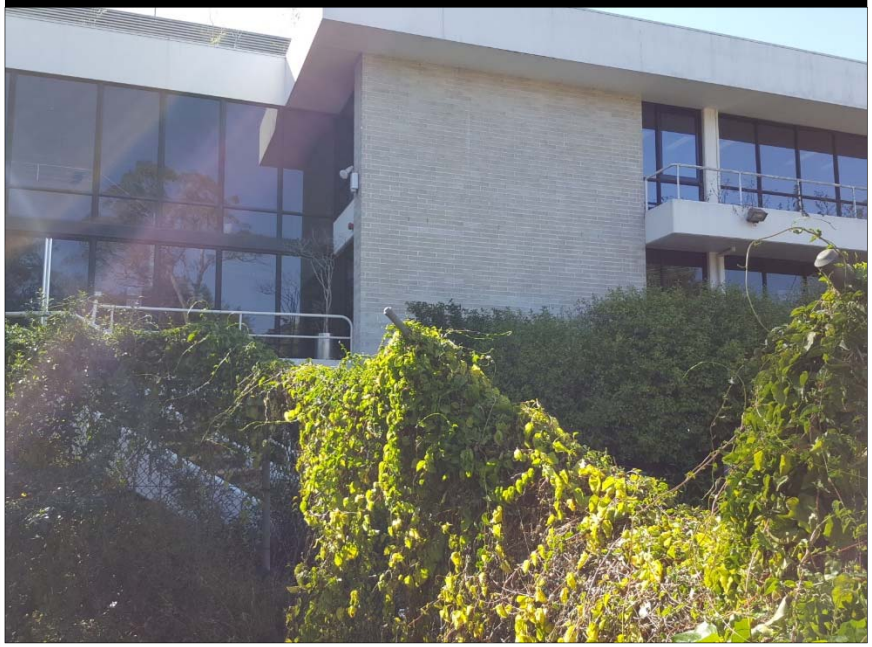
2 – WEST BOUNDARY FACING SOUTH



3 – WEST BOUNDARY FACING EAST (1)



4 – WEST BOUNDARY FACING EAST (2)



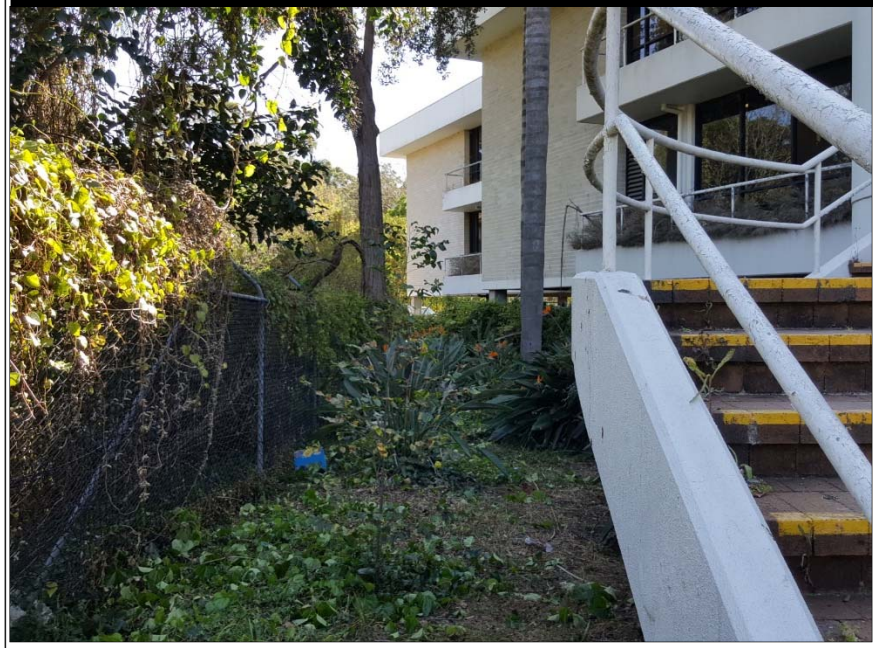
JBS&G

Job No: 54111	
Client: UrbanGrowth NSW	
Version: R01 Rev 0	Date: 3 October 2017
Drawn By: RH	Checked By: JR
Not to Scale	
Coord. Sys n/a	

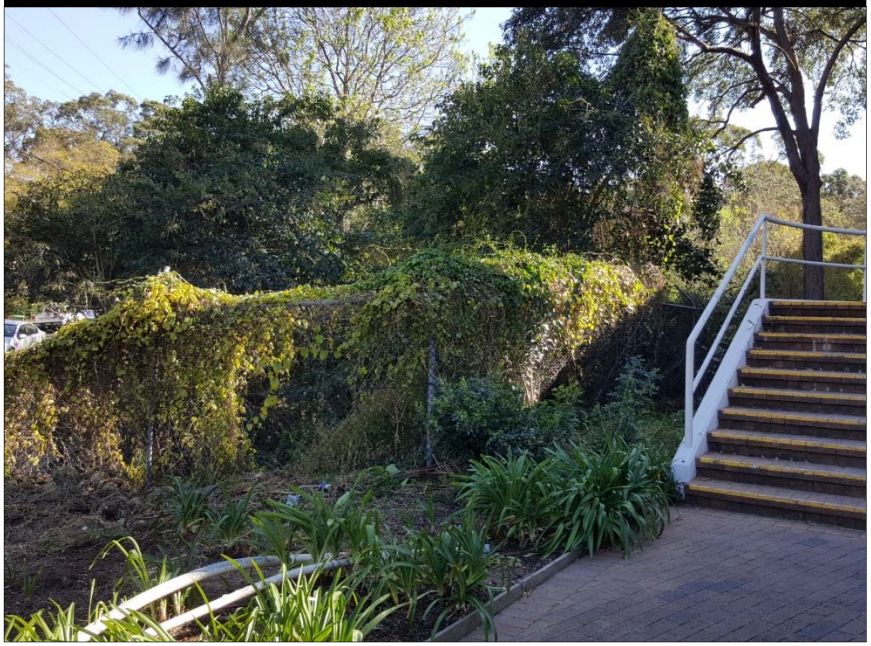
240-244 Beecroft Road, NSW

APPENDIX A

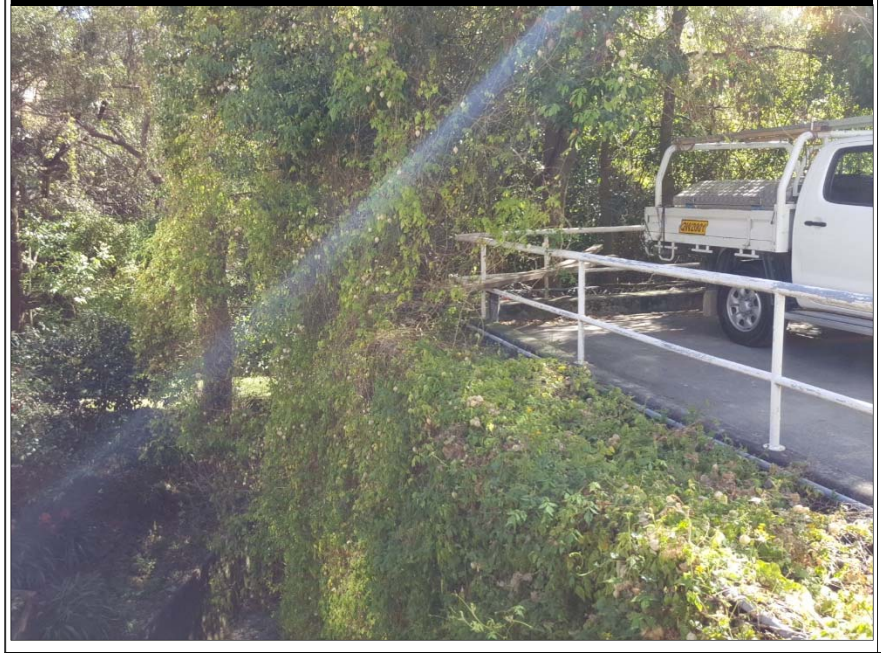
5 – WEST BOUNDARY TFNSW BUILDING GARDEN



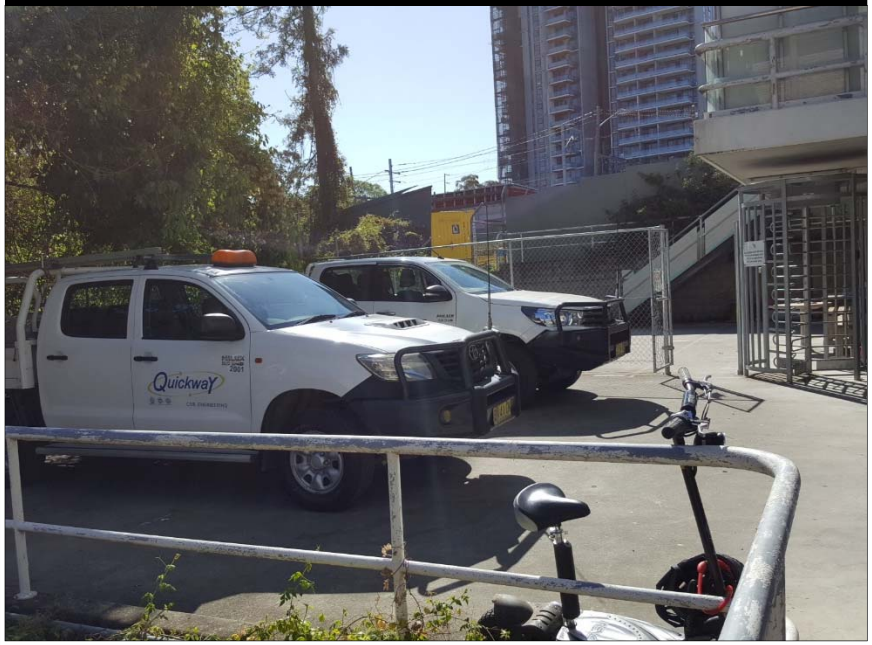
6 – TFNSW BUILDING GARDEN FACING NORTH



7 – TFNSW SUSPENDED SLAB AND STORMWATER DRAIN



8 – TFNSW SUSPENDED SLAB AND BASEMENT CARPARK



JBS&G

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev 0	Date: 3 October 2017
Drawn By: RH	Checked By: JR

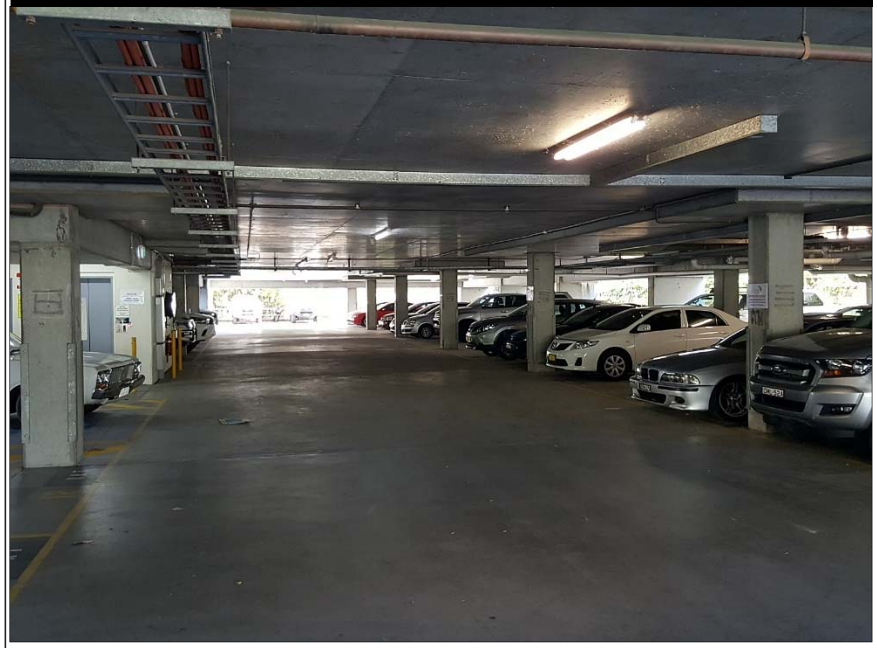
Not to Scale

Coord. Sys n/a

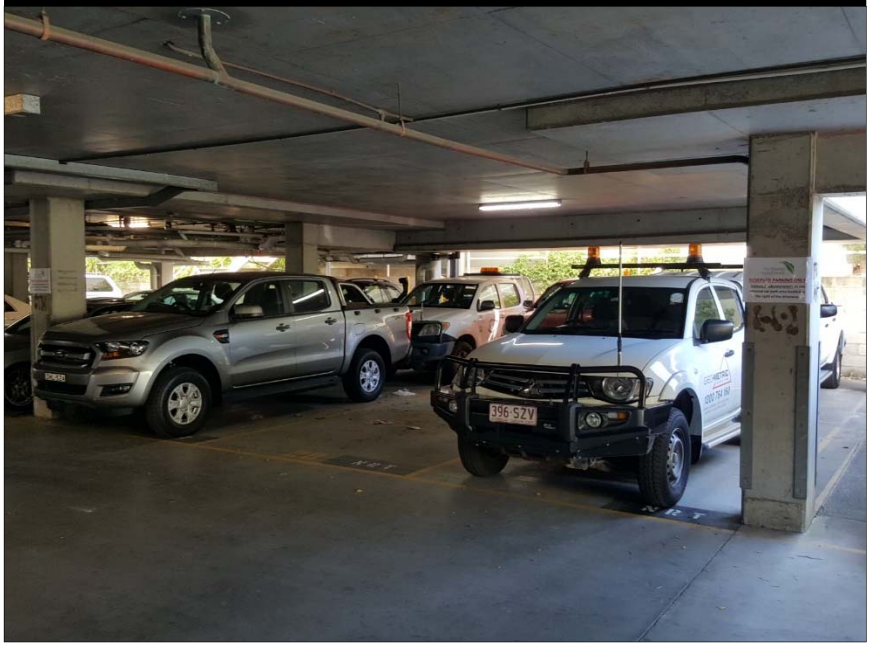
240-244 Beecroft Road, NSW

APPENDIX A

10 – TFNSW BASEMENT CAR PARK (1)



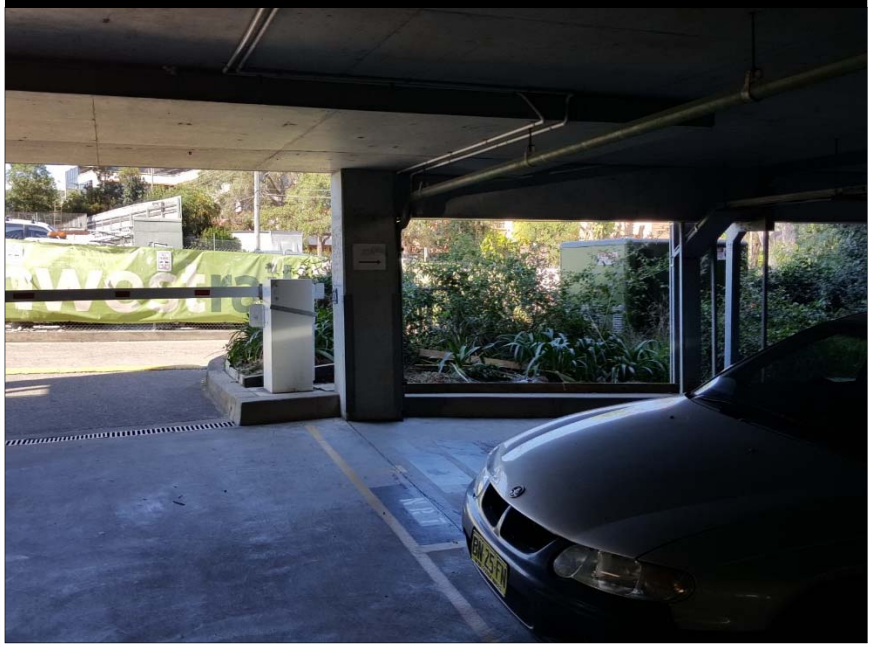
10 – TFNSW BASEMENT CAR PARK (2)



11 – TFNSW BASEMENT CAR PARK, FACING CONTRACTOR CAR PARK (SOUTH) (1)



12 - TFNSW BASEMENT CAR PARK, FACING CONTRACTOR CAR PARK (SOUTH) (2)



JBS&G

Job No: 54111	
Client: UrbanGrowth NSW	
Version: R01 Rev 0	Date: 3 October 2017
Drawn By: RH	Checked By: JR
Not to Scale	
Coord. Sys n/a	

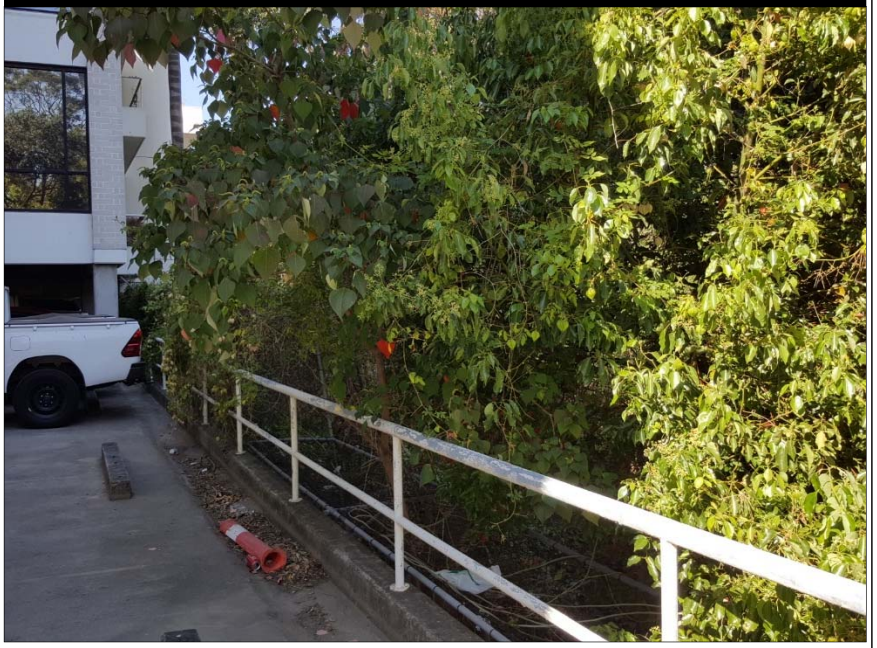
240-244 Beecroft Road, NSW

APPENDIX A

13 – TFNSW SUSPENDED SLAB AND CAR PARK, FACING SOUTH



14 – TFNSW SUSPENDED SLAB AND CAR PARK FACING SOUTHWEST



15 – SOUTHWEST SITE CORNER GARDEN VERGE



16 – SOUTHWEST SITE CORNER FACING NORTH



JBS&G

Job No: 54111	
Client: UrbanGrowth NSW	
Version: R01 Rev 0	Date: 3 October 2017
Drawn By: RH	Checked By: JR
Not to Scale	
Coord. Sys n/a	

240-244 Beecroft Road, NSW

APPENDIX A

17 – SOUTHERN SITE BOUNDARY FACING NORTH



18 – SOUTHEAST SITE CORNER, FACING NORTH



19 – NORTHERN PORTION OF STORAGE YARD



20 – NORTHEASTERN PORTION OF STORAGE YARD



JBS&G

Job No: 54111	
Client: UrbanGrowth NSW	
Version: R01 Rev 0	Date: 3 October 2017
Drawn By: RH	Checked By: JR
Not to Scale	
Coord. Sys n/a	

240-244 Beecroft Road, NSW

APPENDIX A

21 – NORTHWESTERN PORTION OF STORAGE YARD AND TFNSW BUILDING



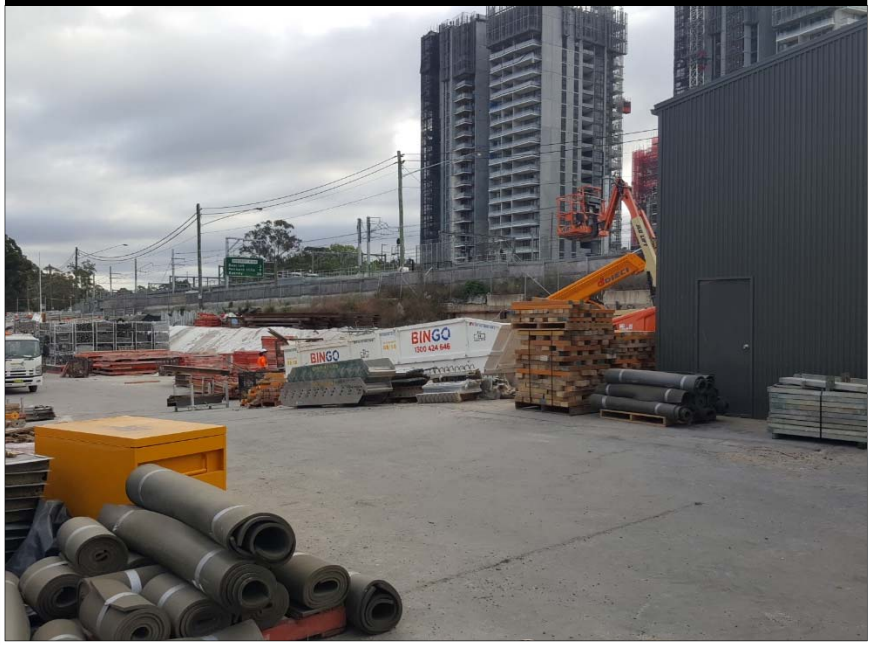
22 – PEDESTRIAN ACCESSWAY, WESTERN PORTION OF STORAGE YARD, FACING SOUTH



23 – SOUTHERN PORTION OF STORAGE YARD, FACING NORTHN



24 – SOUTHERN PORTION OF STORAGE YARD FACING NORTHEAST



JBS&G

Job No: 54111	
Client: UrbanGrowth NSW	
Version: R01 Rev 0	Date: 3 October 2017
Drawn By: RH	Checked By: JR
Not to Scale	
Coord. Sys n/a	

240-244 Beecroft Road, NSW

APPENDIX A

25 – SOUTHERN PORTION OF STORAGE YARD, FACING WEST



26 – SOUTHERN PORTION OF STORAGE YARD, FACING NORTHWEST



27 – SOUTHEASTERN PORTION OF STORAGE YARD FACING NORTH



28 – CONCRETE WASHOUT, FACING NORTH



JBS&G

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev 0	Date: 3 October 2017
Drawn By: RH	Checked By: JR

Not to Scale

Coord. Sys n/a

240-244 Beecroft Road, NSW

APPENDIX A

29 – CONCRETE WASHOUT, FACING WEST



30 – CONCRETE WASHOUT, FACING NORTHWEST



31 – CONCRETE WASHOUT, FACING EAST (SANDSTONE STOCKPILE)



32 – CONCRETE WASHOUT, FACING SOUTHEAST (SANDSTONE STOCKPILE)



JBS&G

Job No: 54111	
Client: UrbanGrowth NSW	
Version: R01 Rev 0	Date: 3 October 2017
Drawn By: RH	Checked By: JR
Not to Scale	
Coord. Sys n/a	

240-244 Beecroft Road, NSW

APPENDIX A

33 – SOUTHWEST CORNER, WATER TREATMENT PLANT



34 – SOUTHWEST CORNER, WATER TREATMENT PLANT



35 – BH01 PUSHTUBE SPOIL (0-0.6 M)



36 – BH02 AUGER SPOIL



JBS&G

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev 0	Date: 3 October 2017
Drawn By: RH	Checked By: JR

Not to Scale

Coord. Sys n/a

240-244 Beecroft Road, NSW

APPENDIX A

37 – BH04 PUSHTUBE SPOIL (0.2-1.2 M)



38 – BH07 AUGER SPOIL



39 – BH08 AUGER SPOIL



40 – BH08 AUGER SPOIL



JBS&G

Job No: 54111	
Client: UrbanGrowth NSW	
Version: R01 Rev 0	Date: 3 October 2017
Drawn By: RH	Checked By: JR
Not to Scale	
Coord. Sys n/a	

240-244 Beecroft Road, NSW

APPENDIX A

41 – BH09 AUGER SPOIL



42 – BH09 AUGER SPOIL



43 – BH11 SAMPLES 0-0.3, 0.4-0.5 AND 0.9-1.0



JBS&G

Job No: 54111	
Client: UrbanGrowth NSW	
Version: R01 Rev 0	Date: 3 October 2017
Drawn By: RH	Checked By: JR
Not to Scale	
Coord. Sys n/a	
240-244 Beecroft Road, NSW	

APPENDIX A

Appendix B Topographic Survey

(R) RESERVATIONS AND CONDITIONS CONTAINED IN THE CROWN GRANTS
(T) RESTRICTION ON THE USE OF LAND (DP617935)
(W) LAND EXCLUDES MINERALS (S7000000A)
(X) COVENANT (H153743)
(Y) LAND EXCLUDES LAND BELOW 20m FROM SURFACE SEE CROWN GRANTS

EDENSOR STREET

SP 13510

SP 9988

SP 14182

DEVLINS CREEK TRIBUTARY

BEECROFT ROAD

(W)

(R) (T) (Y)

THREE STOREY BRICK BUILDING TILED ROOF No4

THREE STOREY BRICK BUILDING TILED ROOF No6

TWO STOREY BRICK BUILDING TILED ROOF 21

THREE STOREY BRICK BUILDING TILED ROOF

ELEVATED CONCRETE

STEEP BANK THICK VEGETATION

CONCRETE DRIVEWAY

SHED

PATH

STORMWATER

OPEN CHANNEL

RIDGE 89.36

103°26'00" 39.625

10°41'10" 16.115

57°27'45" 29.455

57°30'00" 9.495

29.905 184°30'30"

29.875 187°57'00"

CH 185° 04' 40" 26.090 RADIUS 880.26 ARC 26.090

3°31'10" 30.250

21°05'40" 3.180

10°41'40" 2.015

24°37' 2.015

NOTES :

* BOUNDARIES HAVE NOT BEEN DEFINED BY SURVEY AND ARE DIAGRAMMATIC ONLY
* LAND DIMENSIONS AND AREAS HAVE BEEN COMPILED FROM PLANS OBTAINED FROM LPMA
* BEARINGS RELATE TO MGA NORTH ORIGINATING FROM DP 1180959
* LEVEL DATUM IS AHD ORIGINATING FROM SSM 180033 RL 85.032.
* VISIBLE, ACCESSIBLE SERVICES ONLY HAVE BEEN LOCATED. THIS PLAN DOES NOT PURPORT TO SHOW UNDERGROUND SERVICES.
* THE EXISTENCE OF UNDERGROUND SERVICES HAS NOT BEEN ESTABLISHED.
* EXISTENCE OF SERVICES MUST BE VERIFIED BY CONTACTING DIAL BEFORE YOU DIG (DBYD) 1100.COM.AU CRITICAL SERVICES MUST BE EXPOSED AND LOCATED.
* NEIGHBOURING HOUSES, WINDOWS AND ROOF POSITIONS ARE APPROXIMATELY ONLY.
* FLOOR LEVELS GENERALLY SURVEYED AT DOOR THRESHOLDS. INTERNAL ROOMS NOT SURVEYED.
* CONTOURS SHOWN ARE INDICATIVE OF LAND FORM. SPOT LEVELS SHOULD TAKE PRECEDENCE.
* REFER TO FACE OF PLAN FOR SUBJECT TITLE NOTATIONS.
* THIS TITLEBLOCK IS AN INTEGRAL PART OF THIS DRAWING AND SHOULD NOT BE REMOVED.

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LEGEND

ELP - ELECTRIC LIGHT POLE
HYD - HYDRANT
TW - TOP WALL
TK - TOP KERB
TG - TOP GUTTER
PP - POWER POLE
SMH - SEWER MANHOLE
SP - SIGN POST
SV - STOP VALVE
TEL - TELSTRA PIT
VC - VEHICLE CROSSING
TB - TOP OF BANK
BB - BOTTOM OF BANK

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REV		DATE
C	TRUE NORTH ORIENTATION	07.09.2017
B	FINAL	04.09.2017
A	AMENDMENTS	31.08.2017
REV	AMENDMENTS	DATE

SCALE 1:250
0 5 10 15 20

SHEET 1 0F 2 - DETAIL SURVEY

CLIENT : URBAN GROWTH NSW

SURVEYOR :	EDYTA K
DATUM :	AUSTRALIAN HEIGHT DATUM
ORIGIN :	SSM 180033 RL85.032
JOB REF. :	B03846
DRAWING No.	B03846-1
CHECKED :	SCOTT D
DATE OF SURVEY:	24.08-2017
REDUCTION RATIO :	1:250

PLAN OF: RAY ROAD, EPPING (SMNUTP) 50545
BEING: LOT 22 IN DP 1180959
SHOWING: GENERAL DETAIL AND SITE LEVELS
PURPOSE: ARCHITECTURAL DESIGN COUNCIL SUBMISSION

BELLA VISTA
ABN 20 068 433 974
PHONE : 9056 1900
email: office@projectsurveyors.com.au
PO Box 7419
BAULKHAM HILLS NSW 2153
SUITE 405, LEVEL 4
14 LEXINGTON DRIVE
BELLA VISTA NSW 2153
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NOTES :

* BOUNDARIES HAVE NOT BEEN DEFINED BY SURVEY AND ARE DIAGRAMMATIC ONLY
* LAND DIMENSIONS AND AREAS HAVE BEEN COMPILED FROM PLANS OBTAINED FROM LPMA
* BEARINGS RELATE TO MGA NORTH ORIGINATING FROM DP 1180959
* LEVEL DATUM IS AHD ORIGINATING FROM SSM 180033 RL 85.032.
* VISIBLE, ACCESSIBLE SERVICES ONLY HAVE BEEN LOCATED. THIS PLAN DOES NOT PURPORT TO SHOW UNDERGROUND SERVICES.
* THE EXISTENCE OF UNDERGROUND SERVICES HAS NOT BEEN ESTABLISHED.
* EXISTENCE OF SERVICES MUST BE VERIFIED BY CONTACTING DIAL BEFORE YOU DIG (DBYD) 1100.COM.AU CRITICAL SERVICES MUST BE EXPOSED AND LOCATED.
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* REFER TO FACE OF PLAN FOR SUBJECT TITLE NOTATIONS.
* THIS TITLEBLOCK IS AN INTEGRAL PART OF THIS DRAWING AND SHOULD NOT BE REMOVED.

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LEGEND

ELP - ELECTRIC LIGHT POLE
HYD - HYDRANT
TW - TOP WALL
TK - TOP KERB
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TEL - TELSTRA PIT
VC - VEHICLE CROSSING
TB - TOP OF BANK
BB - BOTTOM OF BANK

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C	TRUE NORTH ORIENTATION	07.09.2017
B	FINAL	04.09.2017
A	AMENDMENTS	31.08.2017
REV	AMENDMENTS	DATE

SCALE 1:250

0 5 10 15 20

SHEET 2 0F 2 - DETAIL SURVEY

CLIENT : URBAN GROWTH NSW

SURVEYOR :	EDYTA K
DATUM :	AUSTRALIAN HEIGHT DATUM
ORIGIN :	SSM 180033 RL85.032
JOB REF. :	B03846
DRAWING No.	B03846–2
CHECKED :	SCOTT D
DATE OF SURVEY:	24.08–2017
REDUCTION RATIO :	1:250

PLAN OF: RAY ROAD, EPPING (SMNUTP) 50545

BEING: LOT 22 IN DP 1180959

SHOWING: GENERAL DETAIL AND SITE LEVELS

PURPOSE: ARCHITECTURAL DESIGN COUNCIL SUBMISSION

BELLA VISTA
ABN 20 068 433 974
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SUITE 405, LEVEL 4
14 LEXINGTON DRIVE
BELLA VISTA NSW 2153
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(R) RESERVATIONS AND CONDITIONS CONTAINED IN THE CROWN GRANTS
(T) RESTRICTION ON THE USE OF LAND (DP617935)
(W) LAND EXCLUDES MINERALS (S7000000A)
(X) COVENANT (H153743)
(Y) LAND EXCLUDES LAND BELOW 20m FROM SURFACE SEE CROWN GRANTS

A1

Appendix C Coffee Geotechnics Draft Diagrammatic Geotechnical Long Section

INDEX AND GEOTECHNICAL LEGEND

INDEX

FIGURE NO.	TITLE
B1	INDEX AND GEOTECHNICAL LEGEND
B2	SHEET 1 OF 9
B3	SHEET 2 OF 9
B4	SHEET 3 OF 9
B5	SHEET 4 OF 9
B6	SHEET 5 OF 9
B7	SHEET 6 OF 9
B8	SHEET 7 OF 9
B9	SHEET 8 OF 9
B10	SHEET 9 OF 9

SOIL & ROCK KEY

- TOPSOIL
- FILL
- ASPHALT
- CONCRETE
- SILTY GRAVEL
- CLAY
- SILTY CLAY
- SANDY CLAY
- CLAYEY SAND

SOIL & ROCK KEY (CONTINUE)

- COBBLES
- CLAYEY SILT
- SAND
- SILTY SAND
- GRAVELLY CLAY
- GRAVELLY SANDY CLAY
- SANDY CLAYEY SILT
- SANDY SILT
- SANDY SILTY CLAY
- SILT
- CLAYEY GRAVEL
- GRAVELLY SANDY SILT
- GRAVELLY SAND
- SILTY CLAYEY GRAVEL
- SILTY SANDSTONE
- CONGLOMERATE
- SHALE
- MUDSTONE
- SANDSTONE
- SILTSTONE
- CLAYSTONE
- INTERLAMINATED SILTSTONE & SANDSTONE
- INTERBEDDED SILTSTONE & SANDSTONE
- INTERLAMINATED CLAYSTONE & SILTSTONE
- INTERBEDDED SHALE & SANDSTONE
- INTERBEDDED SHALE & SILTSTONE
- NO CORE

SOIL CONSISTENCY/RELATIVE DENSITY

VS	VERY SOFT
S	SOFT
F	FIRM
ST	STIFF
VST	VERY STIFF
H	HARD
Fb	FRIABLE
VL	VERY LOOSE
L	LOOSE
MD	MEDIUM DENSE
D	DENSE
VD	VERY DENSE

ROCK STRENGTH

EL	EXTREMELY LOW
VL	VERY LOW
L	LOW
M	MEDIUM
H	HIGH
VH	VERY HIGH
EH	EXTREMELY HIGH

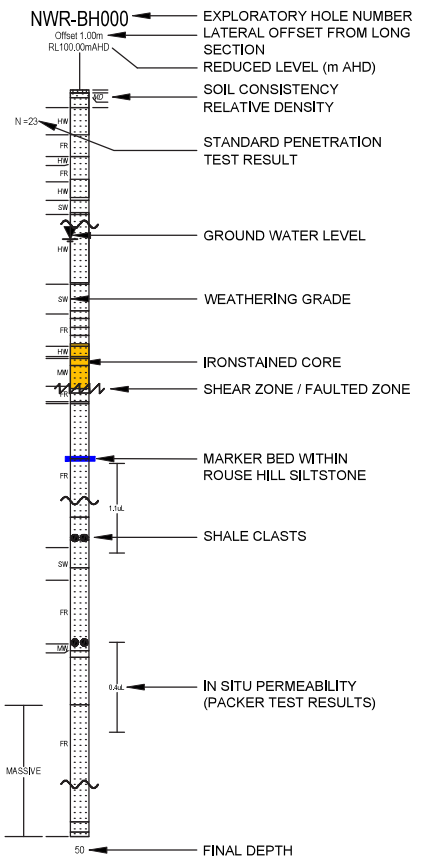
WEATHERING GRADE

EW	EXTREMELY WEATHERED
HW	HIGHLY WEATHERED
MW	MODERATELY WEATHERED
SW	SLIGHTLY WEATHERED
FR	FRESH

GEOLOGICAL MATERIAL

- FILL
- FILL / RESIDUAL SOIL / EW SHALE
- ALLUVIUM
- ASHFIELD SHALE
- MITTAGONG FORMATION
- SILTSTONE OR SILTSTONE & SANDSTONE INTERBEDDED UNIT
- HAWKESBURY SANDSTONE
- BRINGELLY SHALE
- MINCHINBURY SANDSTONE
- VOLCANIC ASH CORRELATION LAYER
- POSSIBLE FAULT DISPLACEMENT

TYPICAL BOREHOLE / TESTPIT DETAILS



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NOTES:

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2. ONLY ABOUT 50% OF BOREHOLE LOGS REPRESENTED ON LONG SECTION
3. ALIGNMENT BASED ON SUPPLIED DRAFT CONCEPT DESIGN DATED 23RD DECEMBER 2011
4. SECTION VERTICALLY EXAGGERATED 20 TIMES (NOT TO SCALE)
5. TUNNEL CROWN AND INVERT LEVELS SHOWN ARE APPROXIMATE ONLY

LONGITUDINAL SECTION

HEIGHT DATUM: A.H.D.

drawn	MG / MH
approved	CJP
date	29 / 02 / 12
scale	NTS
original size	A4

client: NSW GOVERNMENT Transport for NSW

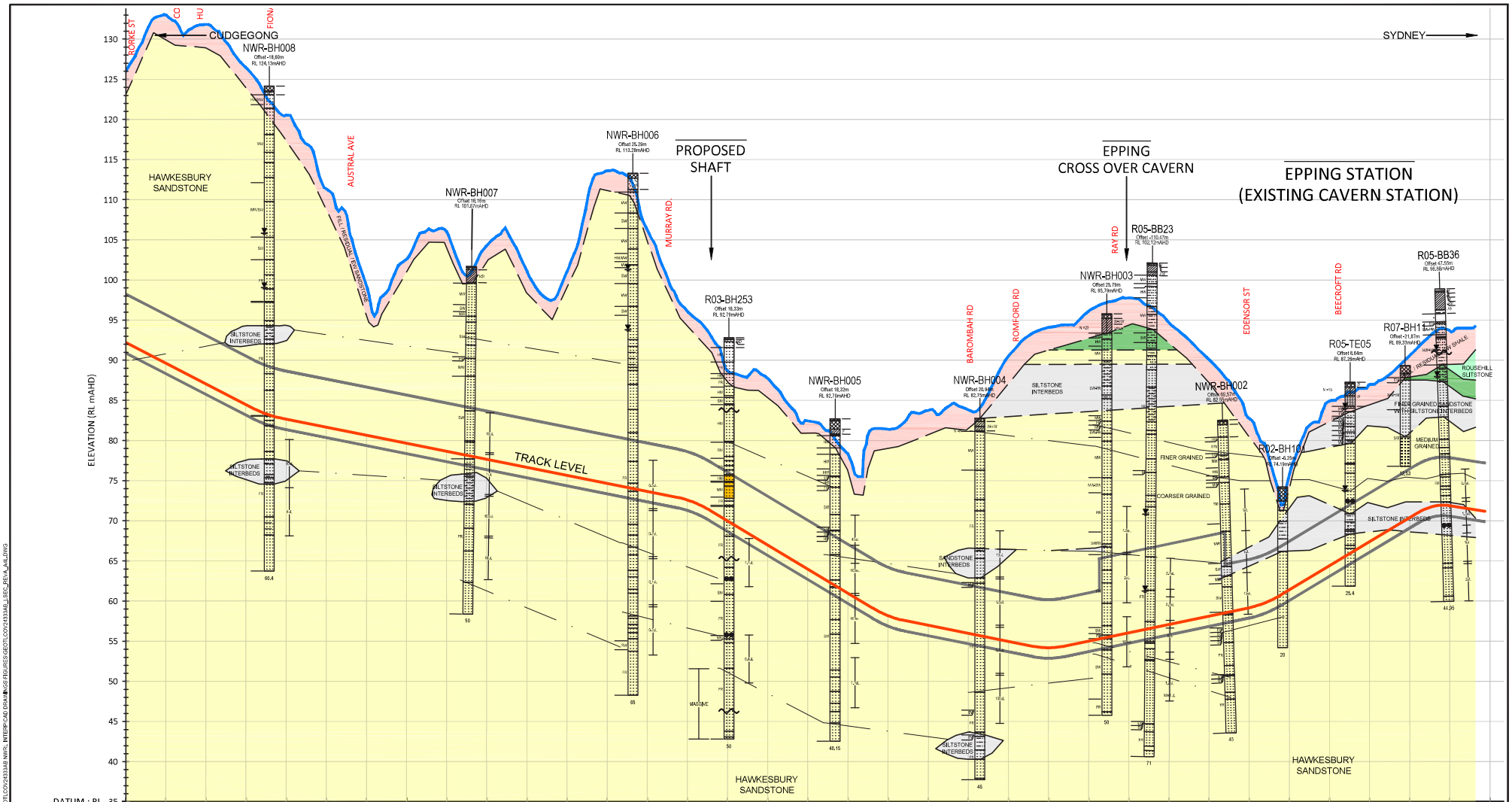
service provider: coffey geotechnics, AECOM

project: NORTH WEST RAIL LINK
GEOTECHNICAL SERVICES
DRAFT DIAGRAMMATIC GEOTECHNICAL LONG SECTION

title: INDEX AND GEOTECHNICAL LEGEND

figure no: FIGURE B1

PLOT DATE: 29/02/2012 11:40:39 AM DWG FILE: F:\GEOTECH\NSW\PROJECTS\GEOTLCOV2\493346\GEOTLCOV2493346 MWRL INTERFACE\DRAWINGS\FIGURES\GEOTLCOV2493346_SEC_BEW_A4LDWG



CHAINAGE (m)	PROPOSED TRACK LEVEL (mAHD)	EXISTING SURFACE LEVEL (mAHD)
28300	92.21	125.97
28200	89.63	133.02
28100	87.04	131.84
28000	84.46	126.45
27900	82.66	120.55
27800	81.66	111.36
27700	80.66	99.33
27600	79.66	102.59
27500	78.66	106.04
27400	77.66	104.28
27300	76.66	101.15
27200	75.66	101.07
27100	74.66	113.59
27000	73.66	106.23
26900	72.59	96.09
26800	69.98	88.68
26700	66.98	87.72
26600	63.98	82.44
26500	60.98	78.36
26400	58.18	81.42
26300	56.98	83.75
26200	55.98	83.83
26100	54.98	90.51
26000	54.18	94.09
25900	55.01	96.12
25800	56.06	97.76
25700	57.10	94.70
25600	58.14	90.08
25500	59.18	82.75
25400	61.39	75.72
25300	64.39	84.93
25200	67.39	86.96
25100	70.39	90.59
25000	71.87	93.66
24900		

NOTES:

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5. TUNNEL CROWN AND INVERT LEVELS SHOWN ARE APPROXIMATE ONLY

LONGITUDINAL SECTION

HEIGHT DATUM: A.H.D.

drawn	MG / MH
approved	CJP
date	29 / 02 / 12
scale	NTS
original size	A4

client: NSW GOVERNMENT Transport for NSW

service provider: coffey geotechnics AECOM

project: NORTH WEST RAIL LINK GEOTECHNICAL SERVICES DRAFT DIAGRAMMATIC GEOTECHNICAL LONG SECTION

title: SHEET 1 OF 9

figure no: FIGURE B2

PLOT DATE: 29/02/2012 11:25:16 AM DWG FILE: F:\GEOTECHNICS\1.PROJECTS\GEOTLCOV2\9\GEOTLCOV24333AB NWRL INTERP\CAD DRAWINGS\FIGURES\GEOTLCOV24333AB_LSEC_REVA_A4L.DWG

Appendix D Field Borehole Installation Logs

BH01

Project Number: 54111
Client: UrbanGrowth NSW
Project Name: NWUT Epping
Site Address: 240-244 Beecroft Rd

Date: 27-Sep-17
Logged By: RH
Contractor: Terratest
Total Hole Depth (mbgs): 6
Bore Diameter (mm): 125

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

Water Level Initial (mbgs): 2
Surface Finish: Gatic
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 1
Screen Bottom Depth (mbgs): 6

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Core						Fill	Surface - Concrete		
Push Tube				0.20		Fill	[FILL] - Gravelly Sand - Black-brown, heterogeneous, dry, well graded, fine sand - cobbles, angular, loose, inclusion of timber and sandstone cobbles.	BH01_0.2-0.3 PID = 0 ppm BH01_0.4-0.5 PID = 0.7 ppm	10L AQ [0.2-0.5] - No odours, ACM or staining.
Solid Flight Auger				0.50		SC	Clayey Sand - White-orange, stratified, dry, inclusion of weathered sandstone.		
			1					BH01_0.9-1.0 PID = 0 ppm	
				1.20		SANDSTONE	Sandstone - White/pink/brown-yellow, stratified, dry		Grades to hard sandstone.
Air Hammer								BH01_1.4-1.5 PID = 0 ppm	
	▶		2	2.00		SANDSTONE	Sandstone - White/pink/brown-yellow, stratified, moist		
			3						
			4						
			5						
			6						
				6.00			Borehole BH01 terminated at 6m		End of Hole at 6m bgs - programmed depth.

BH02

Project Number: 54111
Client: UrbanGrowth NSW
Project Name: NWUT Epping
Site Address: 240-244 Beecroft Rd

Date: 25-Sep-17
Logged By: RH
Contractor: PSM
Total Hole Depth (mbgs): 1.7
Bore Diameter (mm): 200

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Hand Auger				Fill	Surface - Asphalt		
		0.10		Fill	[FILL] - Gravelly Sand - Black-brown, heterogeneous, dry, well graded, coarse sand - cobbles, angular, loose, inclusion of bitument.	BH02_0.1-0.2 PID = 0 ppm	
		0.20		Fill	[FILL] - Sandy Clay - Multicoloured, heterogeneous, dry, low plasticity, soft, inclusion of bricks and sandstone.	BH02_0.4-0.5 PID = 0 ppm	10L AQ [0.1-1.0] - No odours, ACM or staining.
	1					BH02_0.9-1.0 PID = 0 ppm	
						BH02_1.4-1.5 PID = 0 ppm	10L AQ [1.0-1.7] - No odours, ACM or staining.
		1.70			Borehole BH02 terminated at 1.7m		End of Hole at 1.7m bgs - refusal on natural sandstone.
	2						
	3						
	4						
	5						
	6						

BH03

Project Number: 54111
Client: UrbanGrowth NSW
Project Name: NWUT Epping
Site Address: 240-244 Beecroft Rd

Date: 25-Sep-17
Logged By: RH
Contractor: PSM
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 200

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger		0.00		Fill	Surface - Garden Vegetation	BH03_0.0-0.1 PID = 0 ppm	10L AQ [0.1-0.3] - No odours, ACM or staining. End of Hole at 0.3m bgs - refusal on fill/subgrade obstruction.
				Fill	[FILL] - Sand - Brown, heterogeneous, dry, poorly graded, fine - medium sand, sub-angular, loose, inclusion of leaves, rootlets, blue metal gravels and organics.		
		0.30			Borehole BH03 terminated at 0.3m		
	1						
	2						
	3						
	4						
	5						
	6						

BH04

Project Number: 54111
Client: UrbanGrowth NSW
Project Name: NWUT Epping
Site Address: 240-244 Beecroft Rd

Date: 27-Sep-17
Logged By: RH
Contractor: Terratest
Total Hole Depth (mbgs): 6.1
Bore Diameter (mm): 200

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

Water Level Initial (mbgs): 1.8
Surface Finish: Gatic
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 1
Screen Bottom Depth (mbgs): 6

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Core						Fill	Surface - Concrete		
Push Tube				0.12		Fill	[FILL] - Clayey Sand - Orange, homogeneous, dry, poorly graded, fine - coarse sand, rounded, dense.	BH04_0.1-0.2 PID = 0.1 ppm	
				0.30		Fill	[FILL] - Clayey Sand - Grey, homogeneous, dry, poorly graded, fine - coarse sand, rounded, dense.	BH04_0.4-0.5 PID = 0 ppm	10L AQ [0.12-0.5] - No odours, ACM or staining.
				0.50		SANDSTONE	[WEATHERED] Sandstone - Orange and white, dry, soft, inclusions of clayey sand.		
Solid Flight Auger			1					BH04_0.9-1.0 PID = 0 ppm BH04_1.0-1.2 PID = 0 ppm	
								BH04_1.4-1.6 PID = 0 ppm	
			2					BH04_1.9-2.0 PID = 0 ppm	Increase in clay content 1.8-2.3 m bgl, becomes moist to wet
				2.30		SANDSTONE	Sandstone - Pink, hard, low clay content.	BH04_2.4-2.5 PID = 0 ppm	
Air Hammer			3					BH04_2.8-3.0 PID = 0 ppm	
			4						
			5						
			6	6.00					End of Hole at 6m bgs - programmed depth.
							Borehole BH04 terminated at 6.1m		

BH05

Project Number: 54111
Client: UrbanGrowth NSW
Project Name: NWUT Epping
Site Address: 240-244 Beecroft Rd

Date: 27-Sep-17
Logged By: RH
Contractor: Terratest
Total Hole Depth (mbgs): 6
Bore Diameter (mm): 125

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

Water Level Initial (mbgs):
Surface Finish: Gatic
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 1
Screen Bottom Depth (mbgs): 6

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Core						Fill	Surface - Concrete		
PT				0.20		Fill	[FILL] - Gravelly Sand - Black-brown, heterogeneous, dry, well graded, fine sand - coarse gravels, angular, loose, inclusion of igneous and blue metal gravels.	BH05_0.2-0.3 PID = 1.3 ppm	
FA				0.30		Fill	[FILL] - Silty Sandy Clay - Brown/orange/grey, heterogeneous, dry, low plasticity, soft, loose, inclusion of ingeous and blue metal gravels.	BH05_0.3-0.4 PID = 0.9 ppm	
Air Hammer				0.50		SANDSTONE	Sandstone - White/orange/pink, stratified, hard.		
			1						
			2						
			3						
			4						
			5						
			6						End of Hole at 6m bgs - programmed depth.
				6.00			Borehole BH05 terminated at 6m		

WELL_JBSG WELL - 2017.GPJ GINT STD AUSTRALIA.GDT 18-10-17

BH06

Project Number: 54111
Client: UrbanGrowth NSW
Project Name: NWUT Epping
Site Address: 240-244 Beecroft Rd

Date: 25-Sep-17
Logged By: RH
Contractor: PSM
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 50

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger		0.00		Fill	Surface - Garden Mulch	BH06_0.0-0.1 PID = 0 ppm	10L AQ [0.0-0.3] - No odours, ACM or staining. PSM DCP test to 2.5m bgs before refusing. End of Hole at 0.3m bgs - refusal on fill/subgrade obstruction.
				Fill	[FILL] - Sand - Brown, heterogeneous, dry, well graded, fine - coarse sand, rounded, loose, inclusion of organics.		
		0.30			Borehole BH06 terminated at 0.3m		
	1						
	2						
	3						
	4						
	5						
	6						

BH07

Project Number: 54111
Client: UrbanGrowth NSW
Project Name: NWUT Epping
Site Address: 240-244 Beecroft Rd

Date: 25-Sep-17
Logged By: RH
Contractor: PSM
Total Hole Depth (mbgs): 1
Bore Diameter (mm): 200

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Surface - Concrete		
		0.15		Fill	[FILL] - Sand - Orange-yellow, heterogeneous, dry, well graded, coarse sand - cobbles, medium dense, inclusions of sandstone cobbles.	BH07_0.2-0.2 PID = 0.7 ppm	
		0.30		Fill	[FILL] - Sandy Clay - Brown, heterogeneous, dry, low plasticity, soft, inclusions of bricks, timber, terracotta, metal fragments.	BH07_0.4-0.5 PID = 0.1 ppm	10L AQ [0.15-1.0] - No odours, ACM or staining.
	1					BH07_0.9-1.0 PID = 0.9 ppm	
		1.00			Borehole BH07 terminated at 1m		End of Hole at 1m bgs - concrete.
	2						
	3						
	4						
	5						
	6						

BH08

Project Number: 54111
Client: UrbanGrowth NSW
Project Name: NWUT Epping
Site Address: 240-244 Beecroft Rd

Date: 25-Sep-17
Logged By: RH
Contractor: PSM
Total Hole Depth (mbgs): 0.95
Bore Diameter (mm): 200

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Surface - Concrete		
		0.10		SANDSTONE	[WEATHERED] Sandstone - Orange-pink, inclusions of clayey sand and less weathered boulders.	BH08_0.1-0.2 PID = 0 ppm	
						BH08_0.4-0.5 PID = 0 ppm	10L AQ [0.10-0.9] - No odours, ACM or staining.
						BH08_0.8-0.9 PID = 0 ppm	
	1	0.90		SANDSTONE	Sandstone - White/orange/pink, stratified, hard.		End of Hole at 0.95m bgs - bedrock.
		0.95			Borehole BH08 terminated at 0.95m		
	2						
	3						
	4						
	5						
	6						

BH09

Project Number: 54111
Client: UrbanGrowth NSW
Project Name: NWUT Epping
Site Address: 240-244 Beecroft Rd

Date: 25-Sep-17
Logged By: RH
Contractor: PSM
Total Hole Depth (mbgs): 1
Bore Diameter (mm): 200

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Surface - Concrete		
		0.14		CL-SC	Sandy Clay - Orange, homogeneous, damp, low plasticity, soft, loose.	BH09_0.2-0.2 PID = 0 ppm BH09_0.4-0.5 PID = 0 ppm	10L AQ [0.15-1.0] - No odours, ACM or staining.
	1	0.70		SANDSTONE	[WEATHERED] Sandstone - Yellow to beige, dry, hard.	BH09_0.9-1.0 PID = 0 ppm	
		1.00			Borehole BH09 terminated at 1m		End of Hole at 1m bgs - bedrock.
	2						
	3						
	4						
	5						
	6						

BH10

Project Number: 54111
Client: UrbanGrowth NSW
Project Name: NWUT Epping
Site Address: 240-244 Beecroft Rd

Date: 25-Sep-17
Logged By: RH
Contractor: PSM
Total Hole Depth (mbgs): 0.7
Bore Diameter (mm): 200

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Surface - Concrete		
		0.12		Fill	[FILL] - Gravelly Sand - Orange, heterogeneous, dry, well graded, corase sand - cobbles, angular, loose, inclusion of sandstone cobbles.	BH10_0.1-0.2 PID = 0.3 ppm	
						BH10_0.4-0.5 PID = 0.1 ppm	10L AQ [0.12-0.7] - No odours, ACM or staining.
						BH10_0.6-0.2 PID = 0.2 ppm	
		0.70			Borehole BH10 terminated at 0.7m		End of Hole at 0.7m bgs - refusal on sandstone.

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 18-10-17

BH11

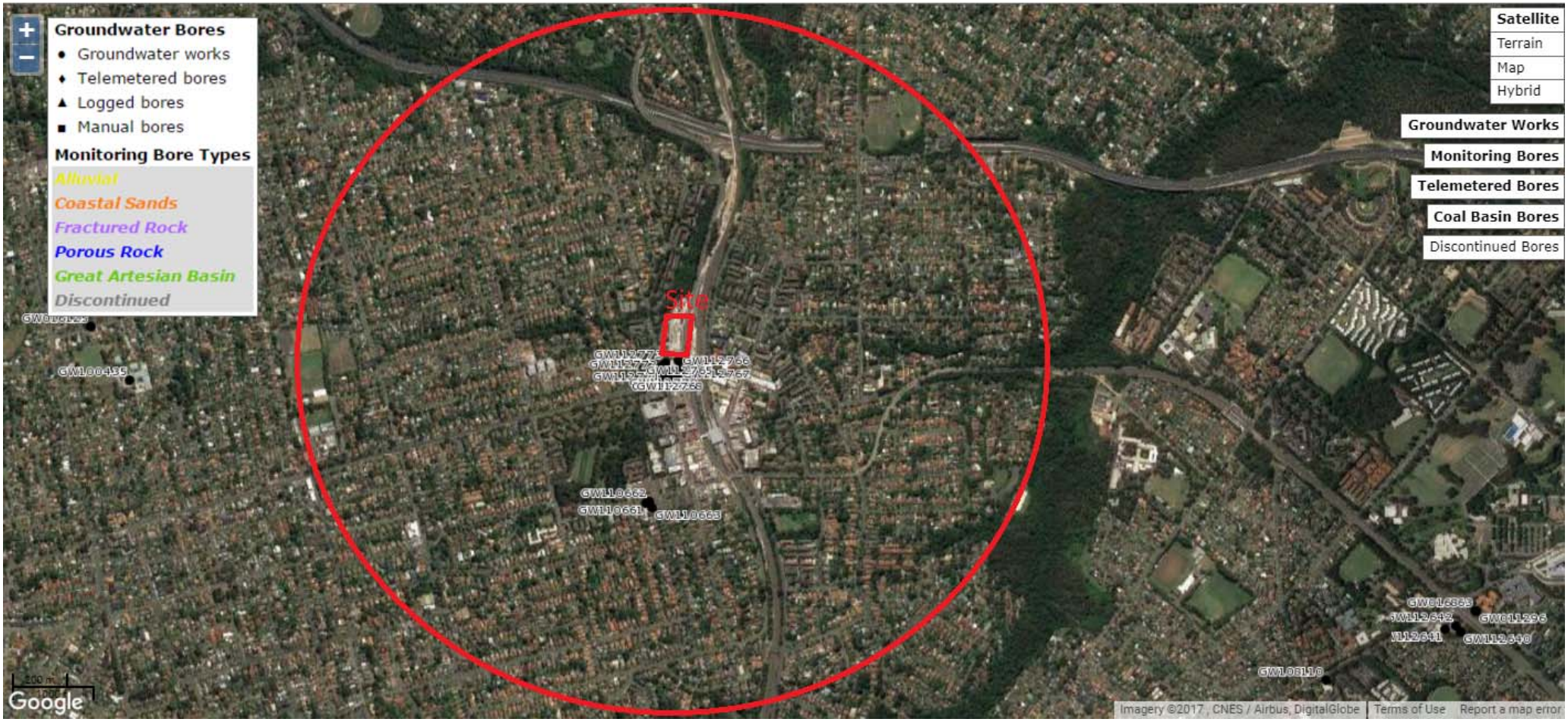
Project Number: 54111
Client: UrbanGrowth NSW
Project Name: NWUT Epping
Site Address: 240-244 Beecroft Rd

Date: 25-Sep-17
Logged By: RH
Contractor: PSM
Total Hole Depth (mbgs): 3
Bore Diameter (mm): 200

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger		0.00		Fill	Surface - Geofabric		
				Fill	[FILL] - Gravelly Sand - Yellow, heterogeneous, dry, well graded, coarse sand - cobbles, angular, loose, inclusion of metal fragments.	BH11_0.0-0.3 PID = 0.7 ppm	
		0.30		Fill	[FILL] - Sandy Clay - Orange, heterogeneous, moist, well graded, low plasticity, coarse sand, rounded, dense, inclusions of metal fragments.	BH11_0.4-0.5 PID = 0.9 ppm	10L AQ [0.0-1.0] - No odours, ACM or staining.
	1					BH11_0.9-1.0 PID = 0.5 ppm	
		1.00		Fill	[FILL] - Clayey Sand - Orange, heterogeneous, damp, well graded, coarse sand, rounded, dense, inclusions of metal fragments.	BH11_1.4-1.5 PID = 1.1 ppm	10L AQ [1.0-2.0] - No odours, ACM or staining.
	2					BH11_1.9-2.0 PID = 1.3 ppm	
						BH11_2.4-2.5 PID = 1 ppm	10L AQ [2.0-3.0] - No odours, ACM or staining.
	3					BH11_2.9-3.0 PID = 0.3 ppm	
		3.00			Borehole BH11 terminated at 3m		End of Hole at 3m bgs - auger extent.
	4						
	5						
	6						

Appendix E Registered Groundwater Bores


Groundwater Bores
Groundwater works
Telemetered bores
Logged bores
Manual bores
Monitoring Bore Types
Alluvial
Coastal Sands
Fractured Rock
Porous Rock
Great Artesian Basin
Discontinued
Site
GW100435
GW110662
GW110661
GW110663
GW112766
GW112767
GW112768
GW112642
GW112641
GW112640
GW611296
GW108110
Satellite
Terrain
Map
Hybrid
Groundwater Works
Monitoring Bores
Telemetered Bores
Coal Basin Bores
Discontinued Bores
Google
Imagery ©2017 , CNES / Airbus, DigitalGlobe
Terms of Use
Report a map error

NSW Office of Water
Work Summary

GW110661

Licence: 10BL603238 **Licence Status:** ACTIVE

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

Work Type: Well
Work Status:
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 20/08/2009
Final Depth: 10.00 m
Drilled Depth: 10.00 m

Contractor Name: Numac Drilling Services Pty Ltd
Driller: Simon Benjamin Tant
Assistant Driller:

Property: PETER HAIG 30 BRIDGE STREET EPPING 2121 NSW
GWMA:
GW Zone:
Standing Water Level:
Salinity:
Yield:

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.18	1//224056
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: 6261168.0
Easting: 322183.0
Latitude: 33°46'28.9"S
Longitude: 151°04'46.8"E

GS Map: -
MGA Zone: 0
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	10.00	150			Unknown
1		Annulus	Waterworn/Rounded	0.00	0.00				Graded
1	1	Casing	P.V.C.	0.00	4.00	60			Seated on Bottom
1	1	Opening	Screen	4.00	10.00	60		1	PVC, Other, A: 0.50mm

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)
7.50	10.00	2.50	Unknown						

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.15	0.15	CEMENT	Calcarenite	
0.15	0.50	0.35	FILL	Fill	
0.50	3.00	2.50	CLAY YELLOW WHITE LENSES	Clay Loam	
3.00	7.00	4.00	SANDSTONE,ORANGE,YELLOW,WEATHERED	Sandstone	
7.00	10.00	3.00	SHALE WEATHERED WITH BROWN CLAY	Shale	

Remarks

***** End of GW110661 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

NSW Office of Water
Work Summary

GW110662

Licence: 10BL603238 **Licence Status:** ACTIVE

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

Work Type: Well
Work Status:
Construct.Method: Other
Owner Type: Private

Commenced Date: **Final Depth:** 10.00 m
Completion Date: 20/08/2009 **Drilled Depth:** 10.00 m

Contractor Name: Numac Drilling Services Pty Ltd
Driller: Simon Benjamin Tant
Assistant Driller:

Property: PETER HAIG 30 BRIDGE STREET EPPING 2121 NSW **Standing Water Level:**
GWMA: **Salinity:**
GW Zone: **Yield:**

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.18	1//224056
Licensed:			

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

Elevation: 0.00 m (A.H.D.) **Northing:** 6261171.0 **Latitude:** 33°46'28.8"S
Elevation Source: Unknown **Easting:** 322195.0 **Longitude:** 151°04'47.3"E

GS Map: - **MGA Zone:** 0 **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	10.00	150			Other
1		Annulus	Waterworn/Rounded	0.00	0.00				Graded
1	1	Casing	P.V.C.	0.00	4.00	60			Seated on Bottom, Other
1	1	Opening	Screen	4.00	10.00	60		1	PVC, Other, A: 0.50mm

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)
7.50	10.00	2.50	Unknown						

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.15	0.15	CEMENT	Calcarenite	
0.15	0.50	0.35	FILL	Fill	
0.50	3.00	2.50	CLAY YELLOW /WHITE LENSES	Clay Loam	
3.00	7.00	4.00	SANDSTONE ORANGE RED WEATHERED	Sandstone	
7.00	10.00	3.00	SHALE WEATHERED/BROWN CLAY	Shale	

Remarks

***** End of GW110662 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

NSW Office of Water
Work Summary

GW110663

Licence: 10BL603238 **Licence Status:** ACTIVE

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

Work Type: Well
Work Status:
Construct.Method: Other
Owner Type: Private

Commenced Date: **Final Depth:** 10.00 m
Completion Date: 20/08/2009 **Drilled Depth:** 10.00 m

Contractor Name: Numac Drilling Services Pty Ltd
Driller: Simon Benjamin Tant
Assistant Driller:

Property: PETER HAIG 30 BRIDGE STREET EPPING 2121 NSW **Standing Water Level:**
GWMA: **Salinity:**
GW Zone: **Yield:**

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.18	1//224056
Licensed:			

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

Elevation: 0.00 m (A.H.D.) **Northing:** 6261151.0 **Latitude:** 33°46'29.5"S
Elevation Source: Unknown **Easting:** 322203.0 **Longitude:** 151°04'47.6"E

GS Map: - **MGA Zone:** 0 **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	10.00	150			Other
1		Annulus	Waterworn/Rounded	0.00	0.00				Graded
1	1	Casing	P.V.C.	0.00	4.00	60			Seated, Other
1	1	Opening	Screen	4.00	10.00	60		1	PVC, Other, A: 0.50mm

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)
7.50	10.00	2.50	Unknown						

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.15	0.15	CEMENT	Calcarenite	
0.15	0.50	0.35	FILL	Fill	
0.50	3.00	2.50	CLAY YELLOW WITH WHITE LENSES	Clay Loam	
3.00	7.00	4.00	SANDSTONE ORANGE YELLOW,WEATHERED	Sandstone	
7.00	10.00	3.00	SHALE WEATHERED WITH BROWN CLAY	Shale	

Remarks

***** End of GW110663 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

NSW Office of Water
Work Summary

GW112765

Licence: 10BL602526 **Licence Status:** ACTIVE

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

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date: **Final Depth:**
Completion Date: 28/05/2008 **Drilled Depth:**

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller:

Property: MOBIL OIL AUSTRALIA LTD CNR BEECROFT & CARLINGFORD RD EPPING 2121 NSW **Standing Water Level:**
GWMA: **Salinity:**
GW Zone: **Yield:**

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.18	1//328586
Licensed:			

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

Elevation: 0.00 m (A.H.D.) **Northing:** 6261632.0 **Latitude:** 33°46'13.9"S
Elevation Source: Unknown **Easting:** 322279.0 **Longitude:** 151°04'50.9"E

GS Map: - **MGA Zone:** 0 **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

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)

Geologists Log

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

Remarks

23/07/2014: Nat Carling, 23-July-2014; Added status, drill method & depth.

***** End of GW112765 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

NSW Office of Water
Work Summary

GW112766

Licence: 10BL602526 **Licence Status:** ACTIVE

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

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date: **Final Depth:**
Completion Date: 28/05/2008 **Drilled Depth:**

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller:

Property: MOBIL OIL AUSTRALIA LTD CNR BEECROFT & CARLINGFORD RD EPPING 2121 NSW **Standing Water Level:**
GWMA: **Salinity:**
GW Zone: **Yield:**

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.18	1//1035227
Licensed:			

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

Elevation: 0.00 m (A.H.D.) **Northing:** 6261603.0 **Latitude:** 33°46'14.8"S
Elevation Source: Unknown **Easting:** 322284.0 **Longitude:** 151°04'51.1"E

GS Map: - **MGA Zone:** 0 **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

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)

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

Remarks

23/07/2014: Nat Carling, 23-July-2014; Added status, drill method & depth.

***** End of GW112766 *****

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NSW Office of Water
Work Summary

GW112767

Licence: 10BL602526 **Licence Status:** ACTIVE

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

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date: **Final Depth:**
Completion Date: 28/08/2013 **Drilled Depth:**

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller:

Property: MOBIL OIL AUSTRALIA LTD CNR BEECROFT & CARLINGFORD RD EPPING 2121 NSW **Standing Water Level:**
GWMA: **Salinity:**
GW Zone: **Yield:**

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.18	1//1035227
Licensed:			

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

Elevation: 0.00 m (A.H.D.) **Northing:** 6261587.0 **Latitude:** 33°46'15.4"S
Elevation Source: Unknown **Easting:** 322279.0 **Longitude:** 151°04'50.9"E

GS Map: - **MGA Zone:** 0 **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

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)

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

Remarks

23/07/2014: Nat Carling, 23-July-2014; Added status, drill method & depth.

***** End of GW112767 *****

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NSW Office of Water
Work Summary

GW112768

Licence: 10BL602526 **Licence Status:** ACTIVE

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

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date: **Final Depth:**
Completion Date: 28/05/2008 **Drilled Depth:**

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller:

Property: MOBIL OIL AUSTRALIA LTD CNR BEECROFT & CARLINGFORD RD EPPING 2121 NSW **Standing Water Level:**
GWMA: **Salinity:**
GW Zone: **Yield:**

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.18	1//1035227
Licensed:			

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

Elevation: 0.00 m (A.H.D.) **Northing:** 6261579.0 **Latitude:** 33°46'15.6"S
Elevation Source: Unknown **Easting:** 322249.0 **Longitude:** 151°04'49.7"E

GS Map: - **MGA Zone:** 0 **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

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)

Geologists Log

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

Remarks

23/07/2014: Nat Carling, 23-July-2014; Added status, drill method & depth.

***** End of GW112768 *****

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NSW Office of Water
Work Summary

GW112769

Licence: 10BL602526 **Licence Status:** ACTIVE

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

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date: **Final Depth:**
Completion Date: 28/05/2008 **Drilled Depth:**

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller:

Property: MOBIL OIL AUSTRALIA LTD CNR BEECROFT & CARLINGFORD RD EPPING 2121 NSW **Standing Water Level:**
GWMA: **Salinity:**
GW Zone: **Yield:**

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.18	19//3105
Licensed:			

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

Elevation: 0.00 m (A.H.D.) **Northing:** 6261581.0 **Latitude:** 33°46'15.5"S
Elevation Source: Unknown **Easting:** 322239.0 **Longitude:** 151°04'49.3"E

GS Map: - **MGA Zone:** 0 **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

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)

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

Remarks

23/07/2014: Nat Carling, 23-July-2014; Added status, drill method & depth.

***** End of GW112769 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

NSW Office of Water
Work Summary

GW112770

Licence: 10BL602526 **Licence Status:** ACTIVE

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

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date: **Final Depth:**
Completion Date: 28/05/2008 **Drilled Depth:**

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller:

Property: MOBIL OIL AUSTRALIA LTD CNR BEECROFT & CARLINGFORD RD EPPING 2121 NSW **Standing Water Level:**
GWMA: **Salinity:**
GW Zone: **Yield:**

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.18	19//3105
Licensed:			

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

Elevation: 0.00 m (A.H.D.) **Northing:** 6261592.0 **Latitude:** 33°46'15.2"S
Elevation Source: Unknown **Easting:** 322233.0 **Longitude:** 151°04'49.1"E

GS Map: - **MGA Zone:** 0 **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

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)

Geologists Log

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

Remarks

23/07/2014: Nat Carling, 23-July-2014; Added status, drill method & depth.

***** End of GW112770 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

NSW Office of Water
Work Summary

GW112771

Licence: 10BL602526 **Licence Status:** ACTIVE

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

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date: **Final Depth:**
Completion Date: 28/05/2008 **Drilled Depth:**

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller:

Property: MOBIL OIL AUSTRALIA LTD CNR BEECROFT & CARLINGFORD RD EPPING 2121 NSW **Standing Water Level:**
GWMA: **Salinity:**
GW Zone: **Yield:**

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.18	19//3105
Licensed:			

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

Elevation: 0.00 m (A.H.D.) **Northing:** 6261602.0 **Latitude:** 33°46'14.8"S
Elevation Source: Unknown **Easting:** 322231.0 **Longitude:** 151°04'49.0"E

GS Map: - **MGA Zone:** 0 **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

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)

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

Remarks

23/07/2014: Nat Carling, 23-July-2014; Added status, drill method & depth.

***** End of GW112771 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

NSW Office of Water
Work Summary

GW112772

Licence: 10BL602526 **Licence Status:** ACTIVE

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

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date: **Final Depth:**
Completion Date: 28/05/2008 **Drilled Depth:**

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller:

Property: MOBIL OIL AUSTRALIA LTD CNR BEECROFT & CARLINGFORD RD EPPING 2121 NSW **Standing Water Level:**
GWMA: **Salinity:**
GW Zone: **Yield:**

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.18	19//3105
Licensed:			

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

Elevation: 0.00 m (A.H.D.) **Northing:** 6261615.0 **Latitude:** 33°46'14.4"S
Elevation Source: Unknown **Easting:** 322229.0 **Longitude:** 151°04'49.0"E

GS Map: - **MGA Zone:** 0 **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

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)

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

Remarks

23/07/2014: Nat Carling, 23-July-2014; Added status, drill method & depth.

***** End of GW112772 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

NSW Office of Water
Work Summary

GW112773

Licence: 10BL602526 **Licence Status:** ACTIVE

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

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date: **Final Depth:**
Completion Date: 28/05/2008 **Drilled Depth:**

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller:

Property: MOBIL OIL AUSTRALIA LTD CNR BEECROFT & CARLINGFORD RD EPPING 2121 NSW **Standing Water Level:**
GWMA: **Salinity:**
GW Zone: **Yield:**

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.18	19//3105
Licensed:			

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

Elevation: 0.00 m (A.H.D.) **Northing:** 6261624.0 **Latitude:** 33°46'14.1"S
Elevation Source: Unknown **Easting:** 322236.0 **Longitude:** 151°04'49.2"E

GS Map: - **MGA Zone:** 0 **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

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)

Geologists Log

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

Remarks

23/07/2014: Nat Carling, 23-July-2014; Added status, drill method & depth.

***** End of GW112773 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

Appendix F Section 149 (2&5)

PLANNING CERTIFICATE

CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979 as amended

Certificate No: 2017/5036

Fee: $133.00

Issue Date: 30 August 2017

Receipt No: 6130910

Applicant Ref: 54111 NWUT:67388

DESCRIPTION OF LAND

Address: 240-244 Beecroft Road
EPPING NSW 2121

Lot Details: Lot 22 DP 1180959

PLANNING CERTIFICATE UNDER SECTION 149 (2)
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 AS AMENDED

The land is zoned: R4 High Density Residential

The information contained in this certificate needs to be read in conjunction with the provisions of the Environmental Planning and Assessment Regulation 2000.

City of Parramatta Council ABN 49 907 174 773
126 Church Street, Parramatta PO Box 32, Parramatta NSW 2124
P 02 9806 5050 F 02 9806 5917 www.cityofparramatta.nsw.gov.au

THIS CERTIFICATE IS DIRECTED TO THE FOLLOWING MATTERS PRESCRIBED UNDER SECTION 149 (2) OF THE ABOVE ACT.

1. Names of relevant planning instruments and DCPs

(1) The name of each environmental planning instrument that applies to the carrying out of development on the land.

(A) **Local Environmental Plans**

The Hornsby Local Environmental Plan (HLEP) 2013, as amended, applies to the land unless otherwise stated in this certificate.

Refer to www.legislation.nsw.gov.au to view the HLEP.

State Environmental Planning Policies

SEPP No. 1 - Development Standards
SEPP No. 19 - Bushland in Urban Areas
SEPP No. 21 - Caravan Parks
SEPP No. 30 - Intensive Agriculture
SEPP No. 33 - Hazardous and Offensive Development
SEPP No. 44 - Koala Habitat Protection
SEPP No. 50 - Canal Estate Development
SEPP No. 55 - Remediation of Land
SEPP No. 62 – Sustainable Aquaculture
SEPP No. 64 – Advertising and Signage
SEPP No. 65 – Design Quality of Residential Apartment Development
SEPP No. 70 – Affordable Housing (Revised Schemes)
SEPP No. 71 – Coastal Protection
SEPP (Building Sustainability Index: BASIX) 2004
SEPP (Housing for Seniors or People with a Disability) 2004
SEPP (State Significant Precincts) 2005
SEPP (Mining, Petroleum Production and Extractive Industries) 2007
SEPP (Miscellaneous Consent Provisions) 2007
SEPP (Infrastructure) 2007
SEPP (Exempt and Complying Development Codes) 2008

SEPP (Affordable Rental Housing) 2009
SEPP (State and Regional Development) 2011
SEPP (Vegetation in Non-Rural Areas) 2017

Deemed State Environmental Planning Policies

SREP (Sydney Harbour Catchment) 2005

(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 (unless the Director-General has notified the Hornsby Shire Council that the making of the proposed instrument has been deferred indefinitely or has not been approved).

(A) **Proposed Local Environmental Plans**

YES

Hornsby Shire Council has re-exhibited a Housekeeping Planning Proposal that seeks to amend the *HLEP 2013* to resolve some of the identified issues raised during the exhibition period which were outside the scope of a translation. The *Planning Proposal* also seeks to rectify a number of anomalies and mapping issues that have been identified since the Plan came into force in October 2013. The *Planning Proposal* has been re-exhibited due to a number of post-exhibition amendments.

(B) **Proposed State Environmental Planning Policies**

YES

Draft *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 (draft SEPP)* applies to the land. The *draft SEPP* provides controls for child care facilities, schools, universities and TAFEs. It consolidates national and state requirements for child care facilities, and expands exempt and complying development provisions for schools and tertiary

institutions. The *draft SEPP* can be viewed on the Department of Planning and Environment's website.

YES

Draft *State Environmental Planning Policy (Vegetation) 2017 (Vegetation SEPP)* has been exhibited. The *Vegetation SEPP* is proposed to safeguard native vegetation in by providing a consistent approach to land clearing in NSW. The *Vegetation SEPP* will also ensure the biodiversity offset scheme will apply to all clearing of native vegetation that exceeds the offset thresholds and does not require development consent. Further information on the *Vegetation SEPP* can be obtained by viewing the proposal http://planspolicies.planning.nsw.gov.au

(3) The name of each development control plan that applies to the carrying out of development on the land.

Hornsby Development Control Plan (HDCP) 2013

(4) In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or a draft environmental planning instrument.

2. Zoning of 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).

(A) The HLEP 2013 applies to the land unless otherwise stated in this certificate and identifies the land to be:

R4 High Density Residential

(B) The purpose for which the instrument provides that development may be carried out within the zone without the need for development consent:

Refer to Attachment

Note: Also refer to the applicable SEPP instrument for provisions regarding Development without Consent and Exempt Development

(C) The purposes for which the instrument provides that development may not be carried out within the zone except the development consent:

Refer to Attachment

Note: Also refer to the applicable SEPP instrument for provisions regarding Development with Consent.

(D) The purposes for which the instrument provides that development is prohibited within the zone:

Refer to Attachment

(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?

NO

(F) Whether the land includes or comprises critical habitat?

NO

(G) Whether the land is in a conservation area (however described)?

NO

(H) Whether an item of environmental heritage (however described) is situated on the land?

NO

2A. Zoning and land use under State Environmental Planning Policy (Sydney Region Growth Centres) 2006

To the extent that the land is within any zone (however described) under:

(a) Part 3 of the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006 and (the 2006 SEPP), or*
(b) a Precinct Plan (within the meaning of the 2006 SEPP), or
(c) a proposed Precinct Plan that is or has been the subject of community consultation or on public exhibition under the ACT.

NO

3. Complying Development

Whether or not the land is land on which complying development may be carried out under each of the codes for complying development because of the provisions of clauses 1.17A(1)(c) to (e), (2), (3) and (4), 1.18(1)(c3) and 1.19 of *State Environmental Planning Policy (Exempt and Complying Developments Code) 2008*. If complying development may not be carried out on that land because of the provisions of clauses 1.17A(c) and (d) and 1.19 of that policy, the reasons why it may not be carried out under that clause.

General Housing Code and Rural Housing Code

Complying Development under the General Housing Code or Rural Housing Code **may be** carried out on the land.

Commercial and Industrial (New Buildings and Additions) Code

Complying Development under the Commercial and Industrial (New Buildings and Additions) Code **may be** carried out on the land.

Housing Alterations, General Development, Commercial and Industrial Alterations, Container Recycling Facilities, Subdivisions, Demolition and Fire Safety Codes (Other Codes)

Complying Development under the Housing Alterations Code, General Development Code, Commercial and Industrial Alterations Code, Container Recycling Facilities, Subdivisions Code, Demolition Code or Fire Safety Code **may be** carried out on the land.

4. Coastal Protection

Whether or not the land is affected by the operation of Section 38 or 39 of the *Coastal Protection Act 1979*, but only to the extent that the council has been so notified by the Department of Services, Technology and Administration.

NO

4A. Certain information relating to beaches and coasts

(1) In relation to a coastal council – whether an order has been made under Part 4D of the *Coastal Protection Act 1979* in relation to temporary coastal protection works (within the meaning of the Act) on the land (or on public land adjacent to that land), except where the council is satisfied that such an order has been fully complied with.

NO

(2) In relation to a coastal council:

(a) whether the council has been notified under Section 55X of the *Coastal Protection Act 1979*, that temporary coastal protection works (within the meaning of that Act) have been placed on the land (or on public land adjacent to that land), and

(b) if works have been so placed – whether the council is satisfied that the works have been removed and the land restored in accordance with that Act.

NO

4B. Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works

Whether the owner (or previous owner) of the land has been consented in writing to the land being subject to annual charges under Section 496B of the *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works (within the meaning of Section 553B of that Act).

NO

Note: "Existing coastal protection works" are works to reduce the impact of coastal hazards on land (such as seawalls, revetments, groynes and beach nourishment) that existed before the commencement of Section 553B of the *Local Government Act 1993*.

5. Mine subsidence

Whether or not the land is proclaimed to be a mine subsidence district within the meaning of section 15 of the *Mine Subsidence Compensation Act 1961*?

NO

6. Road widening and road realignment

Whether or not the land is affected by any road widening or road alignment under –

(A) Division 2 of Part 3 of the *Roads Act 1993*; or

NO

(B) any environmental planning instrument; or

NO

(C) any resolution of council?

NO

7. Council and other public authority policies on hazard risk restrictions

Whether or not the land is affected by a policy:

(a) adopted by council, or
(b) 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, bushfire, tidal inundation, subsidence, acid sulfate soils or any other risk (other than flooding)?

Council's and other public authorities' policies on hazard risk restrictions are as follows:

(A) **Landslip**

YES

All or part of the land has a gradient in excess of 20%. Section 1C.1.4 Earthworks and Slope of the *Hornsby DCP 2013* contains provisions that restrict development on land with the potential for landslip. Specifically, the provisions require certification from a geotechnical engineer as to the stability of the slope in regards to the proposed design of development on sloping sites with a gradient in excess of 20%.

Note: This is a statement of Council and/or Public Authority Policy as the land has a landslip risk but NOT a statement on whether or not the property is or has been affected by landslip.

(B) **Bushfire**

YES

All or part of the land is identified as bushfire prone land on the Bushfire Prone Land Map for Hornsby Shire certified by the NSW Rural Fire Service. Section 1C.3.1 Bushfire of the *Hornsby DCP 2013* and the NSW Rural Fire Service publication *Planning for Bushfire Protection 2006* contain bushfire protection provisions that restrict the development of bushfire prone land.

Note: This is a statement of Council and/or Public Authority Policy as the land has a bushfire risk but NOT a statement on whether or not the property is or has been affected by bushfire.

(C) **Tidal inundation**

NO

(D) **Subsidence**

NO

(E) **Acid Sulfate Soils**

NO

(F) **Land contamination**

NO

Council's electronic property records do not identify the land to be contaminated, being contaminated, as having been remediated or being remediated. Notwithstanding, consideration of Council's policy and the application of provisions under relevant State legislation may still be warranted if upon further evaluation the land is found to be contaminated or potentially contaminated.

Section 1.C.3.4 Land Contamination of the *Hornsby DCP 2013* contains provisions that restrict the development of land affected by contamination or that is potentially contaminated. Specifically, the

provisions may require preliminary contamination assessments, detailed investigations, remedial action plans, validation reports and site audit statements to be undertaken pursuant to *SEPP No. 55 Remediation of Land* before a site is suitable for certain development.

Notes: Council undertakes a thorough review of all relevant records (including hard copy property files) for land within zones with a higher propensity for potentially contaminating land uses (i.e. non-residential zoned land) to identify previously approved land uses which have the potential to cause contamination in accordance with the *Managing Land Contamination - Planning Guidelines*. The result of this review is provided on Certificates issued under Section 149(5) of the *EP&A Act 1979*.

If you have any queries regarding a landowner's obligations in relation to contamination issues, it is recommended that you seek your own independent professional advice.

(G) **Any other risk**

NO

7A. Flood related development controls information

(1) Whether or not development on that 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) is subject to flood related development controls?

YES

The land is subject to "current" exposure to flood hazard risk. Accordingly, flood related development controls apply to the land. Please refer to Section 1C.3.2 Flooding of the *Hornsby DCP 2013* for further information.

Notes: This is a statement that flood related development controls apply to the land as the land has a "current" exposure to flood hazard but is NOT a statement on whether or not the property is subject to flooding.

"Current" exposure to flood hazard risk for urban, river settlement and riverside rural lands is based on the 1 in 100 year ARI storm event flowpath identified by the *Hornsby Overland Flow Study (2010).* "Current" exposure to flood hazard risk for the balance of the rural lands is based on the property being traversed by a natural watercourse/creek as identified by the Department of Land and Property Information in 2011.

Land within river settlement and riverside rural lands may also be subject to "future" exposure to flood hazard risk – see Clause 7(C) – Tidal Inundation of this Certificate to determine this risk.

(2) Whether or not development on that land or part of the land for any other purpose is subject to flood related development controls?

YES

The land is subject to "current" exposure to flood hazard risk. Accordingly, flood related development controls apply to the land. Please refer to Section 1C.3.2 Flooding of the *Hornsby DCP 2013* for further information.

Notes: This is a statement that flood related development controls apply to the land as the land has a "current" exposure to flood hazard but is NOT a statement on whether or not the property is subject to flooding.

"Current" exposure to flood hazard risk for urban, river settlement and riverside rural lands is based on the 1 in 100 year ARI storm event flowpath identified by the *Hornsby Overland Flow Study (2010).* "Current" exposure to flood hazard risk for the balance of the rural lands is based on the property being traversed by a natural watercourse/creek as identified by the Department of Land and Property Information in 2011.

Land within river settlement and riverside rural lands may also be subject to "future" exposure to flood hazard risk – see Clause 7(C) – Tidal Inundation of this Certificate to determine this risk.

(3) Word and expressions in this clause have the same meaning as in the instrument set out in the Schedule to the *Standard Instrument (Local Environmental Plans) Order 2006*.

8. Land reserved for acquisition

Whether or not any 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 27 of the Act.

(A) **State Environmental Planning Policy?**

NO

(B) **Hornsby Local Environmental Plan 2013?**

NO

(C) **Planning Proposal?**

NO

9. Contribution plans

The name of each contribution plan applying to the land:

Hornsby Section 94 Development Contributions Plan 2014 – 2024
Hornsby Section 94A Development Contributions Plan 2014 – 2024

On 9 August 2017, the City of Parramatta Council placed on public exhibition the:

- Draft City of Parramatta Council Section 94 Development Contributions Plan (Former Hornsby LGA and Epping Town Centre);
- Draft City of Parramatta Council Section 94A Development Contributions Plan (Former Hornsby LGA and Epping Town Centre); and
- Draft City of Parramatta Council Section 94A Development Contributions Plan (Amendment 5).

It is intended that the first two abovementioned Plans will repeal the existing Hornsby Section 94 Development Contributions Plan 2014-2024 and Hornsby Section 94A Development Contributions Plan 2014-2024 as they relate to former Hornsby LGA land, the subject of the *Local Government (City of Parramatta and Cumberland) Proclamation 2016.*

9A. Biodiversity certified land

Whether the land is biodiversity certified land under Part 8 of the *Biodiversity Conservation Act 2016*?

NO

10. Biodiversity stewardship sites

Whether the land is land to which a biodiversity stewardship site agreement under Part 5 of the *Biodiversity Conservation Act 2016* relates, (but only if the council has been notified of the existence of the agreement by the Chief Executive of the Office of the Environment and Heritage)?

NO

10A. Native vegetation clearing set asides

Whether the land contains a set aside area under Section 60ZC of the *Local Land Services Act 2013*, (but only if the council has been

notified of the existence of the set aside by Local Land Services or it is registered in the public register under that section)?

NO

11. Bush fire prone land

Has all or part of the land been identified as bush fire prone land?

YES

Note. All or part of the land is identified as bushfire prone land on the Bushfire Prone Land Map for Hornsby Shire Certified by the NSW Rural Fire Service. The land that comprises Bush Fire Prone Land is shown coloured in Hornsby Council's web-based Mapping Application by ticking the "Bushfire Prone Areas" map layer. The Mapping Application can be accessed on desktop computers, tablets or mobile phones by clicking on the relevant link on Hornsby Shire Council's HLEP webpage www.hornsby.nsw.gov.au/hlep

12. Property vegetation plans

Has the council been notified that a property vegetation plan under Part 4 of the *Native Vegetation Act 2003* (and that continues in force) applies to this land?

NO

13. Orders under Trees (Disputes Between Neighbours) Act 2006

Whether an order has been made under the *Trees (Disputes Between Neighbours) Act 2006* to carry out work in relation to a tree on this land (but only if the council has been notified of the order)?

NO

14. Directions under Part 3A

Whether there is a direction by the Minister in force under Section 75P_(2)(c1) of the Act that a provision of an environmental planning instrument prohibiting or restricting the carrying out of project or a stage of a project on the land under Part 4 of the Act does not have effect?

NO

15. Site compatibility certificates and conditions for seniors housing

(a) Whether there is a current site compatibility certificate (seniors housing) of which council is aware, issued under *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004* in respect of proposed development on this land?

NO

(b) Whether there are 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* that have imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land?

NO

16. Site compatibility certificates for infrastructure

Whether there is a valid site compatibility certificate (infrastructure), issued in respect of proposed development on this land?

NO

17. Site compatibility certificates and conditions for affordable rental housing

(1) Whether there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land?

NO

(2) Whether there are any terms of a kind referred to in clause 17(1) or 38(1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 that have been imposed as a condition of consent to a development application in respect of the land?

NO

18. Paper subdivision information

(1) The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.

NO DEVELOPMENT PLAN APPLIES

(2) The date of any subdivision order that applied to the land.

NO SUBDIVISION ORDER APPLIES

(3) Words and expressions used in this clause have the same meaning as they have in Part 16C of this Regulation.

19. Site verification certificates

Whether there is a current site verification certificate, of which the council is aware, in respect of the land?

NO

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) that the land to which the certificate relates is significantly contaminated land within the meaning of the Act - if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,

NO

(b) that the land to which the certificate relates is subject to a management order within the meaning of the Act – if it is subject to such an order at the date when the certificate is issued,

NO

(c) that the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of that Act – if it is the subject of such an approved proposal at the date when the certificate is issued,

NO

(d) that the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of the Act – if it is subject to such an order at the date when the certificate is used,

NO

(e) that the land to which the certificate relates is the subject of a site audit statement within the meaning of the Act – if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

NO

Note: Section 26 of the *Nation Building and Jobs Plan (State Infrastructure Delivery) Act 2009* provides that a planning certificate must include advice about any exemption under section 23 or authorisation under section 24 of that Act if the council is provided with a copy of the exemption or authorisation by the Co-ordinator General under that Act.

NO

The NSW Infrastructure Co-ordinator General **has not** issued an order under Section 23 or an authorisation under Section 24 of the Nation Building and Jobs Plan (State Infrastructure Delivery) Act 2009.

20. Loose-fill asbestos insulation

Whether the land includes any residential premises (within the meaning of Division 1A of
Part 8 of the *Home Building Act 1989*) that are listed on the register that is required to be maintained under that Division?

NO

THIS PART IS DIRECTED TO THE FOLLOWING MATTERS PRESCRIBED UNDER SECTION 149 (5) OF THE ABOVE ACT

NOTE: "When information pursuant to Section 149 (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 149 (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."

A. Whether a resolution to prepare a Planning Proposal applies to the land?

NO

B. Whether there are draft amendments to the Hornsby Development Control Plan that are on exhibition, have been exhibited or have been adopted by Council for exhibition applying to the land?

NO

C. Whether there are any provisions applying to the land that control the management of trees and vegetation?

YES

Tree and Vegetation Preservation Provisions contained within Hornsby DCP apply to the land.

D. Whether there are any provisions within the Hornsby LEP applying to the land that controls the management of biodiversity?

NO

E. Whether there are any provisions applying to the land within the Hornsby Local Environmental Plan or Hornsby Development Control Plan that control development within a foreshore area?

NO

F. Whether the Hornsby Shire Council has adopted a Voluntary Planning Agreement within the meaning of S93F of the Environmental Planning and Assessment Act, 1979, as amended, in relation to the land?

NO

G. Whether the land is within or adjacent to the North West Rail Link as identified on the maps provided by Transport NSW?

YES

Note: Any enquiries on the NWRL should be directed to Transport NSW.

H. Whether the land is subject to the North West Rail Link Corridor Strategy prepared by the Department of Planning and Infrastructure?

NO

I. Whether the land is within or adjacent to an existing rail corridor?

YES

Note: Clauses 85 and 86 of State Environmental Planning Policy (Infrastructure) 2007 requires Council to notify the rail authority of development on land in, above or immediately adjacent to a rail corridor if it is likely to impact on the rail corridor or penetrate 2 metres or more below ground level.

J. Whether the land is in a rural area or located adjacent to a rural area in which agriculture occurs?

NO

K. Whether Council's records show a history of potentially contaminating land use and the land is zoned:

- Business, Industrial and/or SP2 Infrastructure; or

NO

- RU1 Primary Production, RU2 Rural Landscape, RU4 Primary Production Small Lots or E3 Environmental Management.

NO

- Any other risk

NO

Note: This is NOT a statement on whether or not the property is affected by contamination. Council has a policy on contaminated land which may restrict the development of the land. This policy is implemented when zoning, land use changes or further development is proposed on lands which are contaminated, or have previously been used for certain purposes and the contamination status of the land is uncertain. Accordingly, consideration of Council's policy and the application of provisions under relevant State legislation is warranted. If you have any queries regarding a landowner's obligations in relation to contamination issues, it is recommended that you seek your own independent professional advice.

L. Whether the land is subject to risk of "future" exposure to tidal inundation?

NO

M. Whether the land is within or adjacent to the NorthConnex motorway link corridor as identified on the maps provided by the NorthConnex project team?

NO

N. Whether there is potential for loose-fill asbestos insulation to be found on properties that are not listed on the NSW Department of Fair Trading's Loose-Fill Asbestos Public Register

YES

Note: Some residential homes located in the City of Parramatta have been identified as containing loose-fill asbestos insulation in the roof space. The NSW Department of Fair Trading maintains a Public Register of homes that are affected by loose-fill asbestos insulation.

You should make your own enquiries as to the age of the buildings on the land to which this certificate relates, and if it contains a building construction prior to 1980, it is recommended that any potential purchaser obtain advice from a licensed asbestos assessor to determine whether loose-fill asbestos is present in any building on the land and, if so, the risk (if any) this may pose for the building's occupants.

Further information can be obtained by contacting the NSW Department of Fair Trading and viewing the Department's website.

Greg Dyer
Chief Executive Officer

per



dated 30 August 2017

PLEASE NOTE: COUNCIL RETAINS THE ELECTRONIC ORIGINAL OF THIS CERTIFICATE.

WHERE THIS CERTIFICATE REFERS TO INFORMATION DISPLAYED ON COUNCIL'S WEBSITE OR TO ANY EXTERNAL WEBSITE, IT REFERS TO INFORMATION DISPLAYED ON THE WEBSITE ON THE DATE THIS CERTIFICATE IS ISSUED.

ATTACHMENT

Hornsby Local Environmental Plan 2013 - Land Use Table

Zone R4 High Density Residential

1 Objectives of zone

- To provide for the housing needs of the community within a high density residential environment.
- To provide a variety of housing types within a high density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.

2 Permitted without consent

Environmental protection works

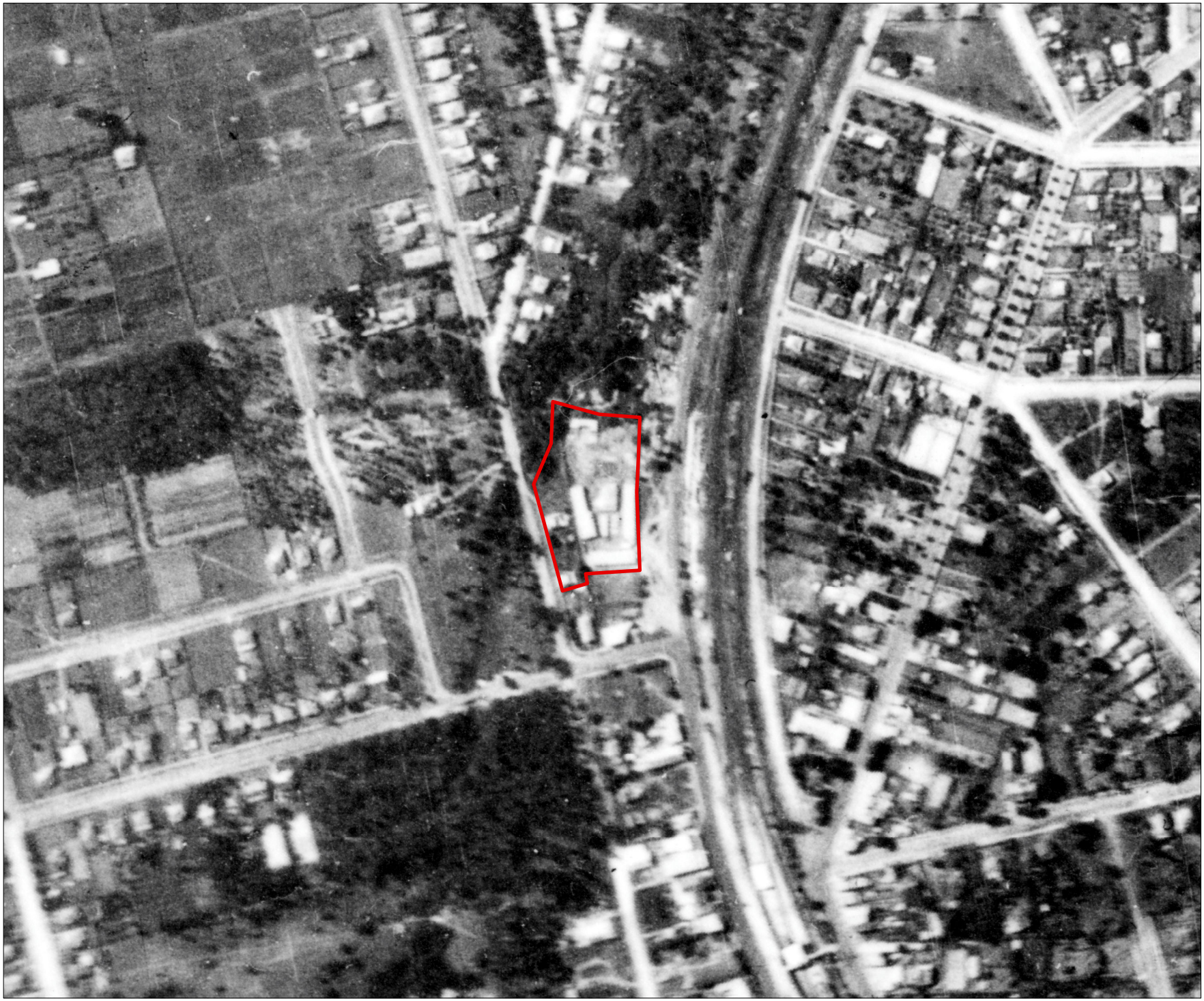
3 Permitted with consent

Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dwelling houses; Emergency services facilities; Flood mitigation works; Home-based child care; Home occupations; Neighbourhood shops; Places of public worship; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); Residential flat buildings; Respite day care centres; Roads; Shop top housing; Water reticulation systems

4 Prohibited

Any development not specified in item 2 or 3

Appendix G Aerial Photographs



Legend:

Approximate Site Boundary

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev0	Date: 05-Sep-2017
Drawn By: AV	Checked By: RH

Scale 1:4,000

0 40 80

metres

Coor. Sys. GDA 1994 MGA Zone 56

240-244 Beecroft Road
Epping, NSW

HISTORICAL AERIAL PHOTOGRAPH- 1930

FIGURE: 1930

File Name: 1930
Reference: Land and Property Information, NSW



Legend:

Approximate Site Boundary

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev0	Date: 05-Sep-2017
Drawn By: AV	Checked By: RH

Scale 1:4,000

0 40 80

metres

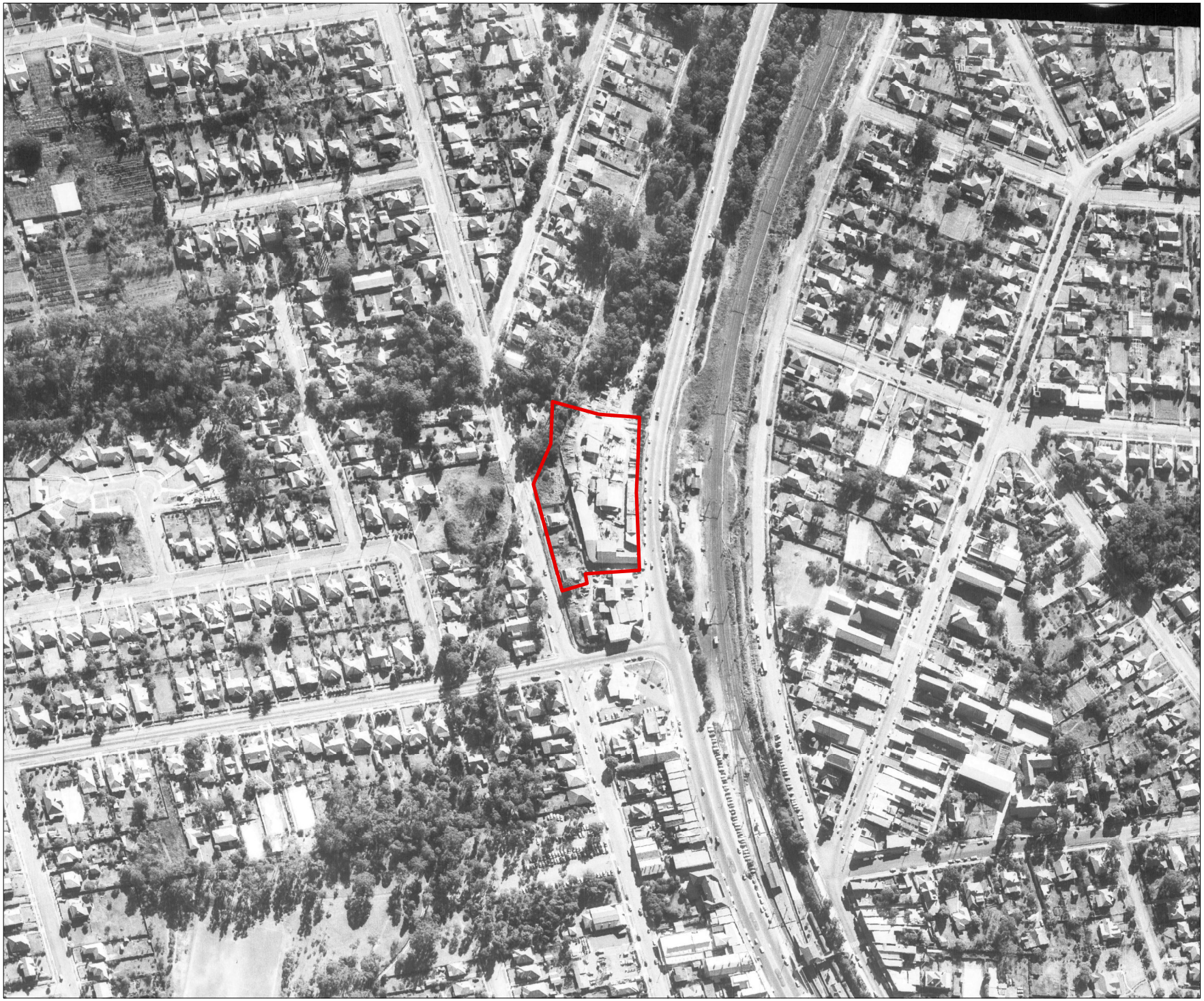
Coor. Sys. GDA 1994 MGA Zone 56

240-244 Beecroft Road
Epping, NSW

HISTORICAL AERIAL PHOTOGRAPH- 1947

FIGURE: 1947

File Name: 1947
Reference: Land and Property Information, NSW



Legend:

Approximate Site Boundary

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev0	Date: 05-Sep-2017
Drawn By: AV	Checked By: RH

Scale 1:4,000

0 40 80

metres

Coor. Sys. GDA 1994 MGA Zone 56

240-244 Beecroft Road
Epping, NSW

HISTORICAL AERIAL PHOTOGRAPH- 1961

FIGURE: 1961

File Name: 1961
Reference: Land and Property Information, NSW



Legend:

Approximate Site Boundary

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev0	Date: 05-Sep-2017
Drawn By: AV	Checked By: RH

Scale 1:4,000

0 40 80

metres

Coor. Sys. GDA 1994 MGA Zone 56

240-244 Beecroft Road
Epping, NSW

HISTORICAL AERIAL PHOTOGRAPH- 1970

FIGURE: 1970

File Name: 1970
Reference: Land and Property Information, NSW



Legend:

Approximate Site Boundary

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev0	Date: 05-Sep-2017
Drawn By: AV	Checked By: RH

Scale 1:4,000

0 40 80

metres

Coor. Sys. GDA 1994 MGA Zone 56

240-244 Beecroft Road
Epping, NSW

HISTORICAL AERIAL PHOTOGRAPH- 1982

FIGURE: 1982

File Name: 1982
Reference: Land and Property Information, NSW



Legend:

Approximate Site Boundary

JBS&G

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev0	Date: 05-Sep-2017
Drawn By: AV	Checked By: RH

Scale 1:4,000

0 40 80

metres

Coor. Sys. GDA 1994 MGA Zone 56

240-244 Beecroft Road
Epping, NSW

HISTORICAL AERIAL PHOTOGRAPH- 1991

FIGURE: 1991

File Name: 1991
Reference: Land and Property Information, NSW



Legend:

Approximate Site Boundary

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev0	Date: 05-Sep-2017
Drawn By: AV	Checked By: RH

Scale 1:4,000

0 40 80

metres

Coor. Sys. GDA 1994 MGA Zone 56

240-244 Beecroft Road
Epping, NSW

HISTORICAL AERIAL PHOTOGRAPH- 1998

FIGURE: 1998

File Name: 1998
Reference: Land and Property Information, NSW



Legend:

Approximate Site Boundary

JBS&G

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev0	Date: 05-Sep-2017
Drawn By: AV	Checked By: RH

Scale 1:4,000

0 40 80

metres

Coor. Sys. GDA 1994 MGA Zone 56

240-244 Beecroft Road
Epping, NSW

HISTORICAL AERIAL PHOTOGRAPH- 2007

FIGURE: 2007

File Name: 2007
Reference: Google Earth

Appendix H EPA Records

Healthy Environment, Healthy Community, Healthy Business

Search results

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

Suburb - EPPING

returned 13 results

Export to excel 1 of 1 Pages Search Again

Number	Name	Location	Type	Status	Issued date
2915	CHANNEL SEVEN SYDNEY PTY LIMITED	MOBBS LANE, EPPING, NSW 2121	POEO licence	Surrendered	28 Dec 2000
1005131	CHANNEL SEVEN SYDNEY PTY LIMITED	MOBBS LANE, EPPING, NSW 2121	s.58 Licence Variation	Issued	05 Apr 2002
10986	EPPING PRIVATE HOSPITAL PTY. LIMITED	66 NORFOLK ROAD, EPPING, NSW 2121	POEO licence	Surrendered	12 Jul 2000
1011932	EPPING PRIVATE HOSPITAL PTY. LIMITED	66 NORFOLK ROAD, EPPING, NSW 2121	s.58 Licence Variation	Issued	04 Oct 2001
1034937	EPPING PRIVATE HOSPITAL PTY. LIMITED	66 NORFOLK ROAD, EPPING, NSW 2121	s.58 Licence Variation	Issued	27 Feb 2004
185	HORNSBY SHIRE COUNCIL	26A STANLEY ROAD, EPPING, NSW 2121	POEO licence	Surrendered	27 Sep 1999
1007684	HORNSBY SHIRE COUNCIL	26A STANLEY ROAD, EPPING, NSW 2121	s.58 Licence Variation	Issued	25 Oct 2002
1047075	HORNSBY SHIRE COUNCIL	26A STANLEY ROAD, EPPING, NSW 2121	s.58 Licence Variation	Issued	23 Jun 2005
20198	LENDLEASE ENGINEERING PTY LIMITED	Between Tallawong Road Maintenance Facility and Epping Station, EPPING, NSW 2121	POEO licence	Surrendered	08 Mar 2013
1513998	LENDLEASE ENGINEERING PTY LIMITED	Between Tallawong Road Maintenance Facility and Epping Station, EPPING, NSW 2121	s.58 Licence Variation	Issued	14 May 2013
1517714	LENDLEASE ENGINEERING PTY LIMITED	Between Tallawong Road Maintenance Facility and Epping Station, EPPING, NSW 2121	s.58 Licence Variation	Issued	17 Oct 2013
1517970	LENDLEASE ENGINEERING PTY LIMITED	Between Tallawong Road Maintenance Facility and Epping Station, EPPING, NSW 2121	s.58 Licence Variation	Issued	31 Oct 2013
1518597	LENDLEASE ENGINEERING PTY LIMITED	Between Tallawong Road Maintenance Facility and Epping Station, EPPING, NSW 2121	s.58 Licence Variation	Issued	17 Dec 2013

Connect Fee

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Pub

05 September 2017

Healthy Environment, Healthy Community, Healthy Business

Home Contaminated land Record of notices

Search results

Your search for:Suburb: EPPING

Search Again
Refine Search

did not find any records in our database.

Search TIP

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

... more search tips

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.

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

5 September 2017

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We
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List of NSW Contaminated Sites Notified to EPA as of 10 August 2017

Background

A strategy to systematically assess, prioritise 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.

For some notifications, the information indicates the contamination is securely immobilised within the site, such as under a building or carpark, and is not currently causing any offsite consequences to the community or environment. Such sites would still need to be cleaned up, but this could be done in conjunction with any subsequent building or redevelopment of the land. These sites may not require intervention under the CLM Act, but could be dealt with through the planning and development consent process.

Where indications are that the nominated site is causing actual harm to the environment or an unacceptable offsite impact (i.e. it is a "significantly contaminated site"), the EPA would apply the regulatory provisions of the CLM Act to have the responsible polluter and/or landowner investigate and remediate the site.

As such, the sites notified to the EPA and presented in the following table are at various stages of the assessment and/or 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 tables provide 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 responsible landowner.

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

Frequently asked questions

What is the difference between the "List of NSW Contaminated Sites Notified to the EPA" and the "Contaminated Land: Record of Notices"?

A site will be on the Contaminated Land: Record of Notices only if the EPA has issued a regulatory notice in relation to the site under the *Contaminated Land Management Act 1997*.

The sites appearing on this "List of NSW contaminated sites notified to the EPA" indicate that the notifiers consider that the sites are contaminated and warrant reporting to the EPA. However, the contamination may or may not be significant enough to warrant regulation by the EPA. The EPA needs to review and, if necessary, obtain more information before it can make a determination as to whether the site warrants regulation.

Why my site appears on the list?

Your site appears on the list because of one or more of the following reasons:

- The site owner and/or the person partly or fully responsible for causing the contamination notified to the EPA about the contamination under Section 60 of the *Contaminated Land Management Act 1997*. In other words, the site owner or the "polluter" believes the site is contaminated.
- The EPA has been notified via other means and is satisfied that the site is or was contaminated.

Does the list contain all contaminated sites in NSW?

No. The list only contains contaminated sites that the EPA is aware of, with regard to its regulatory role under the CLM Act. An absence of a site from the list does not necessarily imply the site is not contaminated.

The EPA relies upon responsible parties to notify contaminated sites.

How are these notified contaminated sites managed by the EPA?

There are different ways that the EPA manages these notified contaminated sites. First, an initial assessment is carried out by the EPA. At the completion of the initial assessment, the EPA may take one or more than one of the following management approaches:

- The contamination warrants the EPA's direct regulatory intervention either under the *Contaminated Land Management Act 1997* or the *Protection of the Environment Operations Act 1997* (POEO Act), or both. Information about current or past regulatory action on this site can be found on EPA website.
- The contamination with respect to the current use or approved use of the site, as defined under the *Contaminated Land Management Act 1997,* is not significant enough that it warrants EPA regulation.
- The contamination does not require EPA regulation and can be managed by a planning approval process.
- The contamination is related to an operational Underground Petroleum Storage System, such as a service station or fuel depot. The contamination may be managed under the POEO Act and the Protection of the Environment Operation (Underground Petroleum Storage Systems) Regulation 2008.
- The contamination is being managed under a specifically tailored program operated by another agency (for example the Department of Industry and Investment's *Derelict Mines Program*).

I am the owner of a site that appears on the list. What should I do?

First of all, you should ensure the current use of the site is compatible with the site contamination. Secondly, if the site is the subject of EPA regulation, make sure you comply with the regulatory requirements, and you have considered your obligations to notify other parties who may be affected.

If you have any concerns, contact us and we may be able to offer you general advice, or direct you to accredited professionals who can assist with specific issues.

I am a prospective buyer of a site that appears on the list. What should I do?

You should seek advice from the vendor to put the contamination issue into perspective. You may need to seek independent expert advice.

The information provided in the list is meant to be indicative only, and a starting point for your own assessment. Site contamination as a legacy of past site uses is not uncommon,

particularly in an urbanised environment. If the contamination on a site is properly remediated or managed, it may not materially impact upon the intended future use of the site. However, each site needs to be considered in context.

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*. Alternatively, the EPA may require information via a notice issued under s77 of the *Contaminated Land Management Act 1997* or issue a Preliminary Investigation Order.
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	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the *Protection of the Environment Operations Act 1997* (POEO Act). The EPA's regulatory actions under the POEO Act 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	Site Name	Site Address	Contamination Activity Type	EPA Management Class	Latitude	Longitude
EASTERN CREEK	Caltex Service Station M4 Motorway Westbound	M4 (Westbound) MOTORWAY	Service Station	Regulation under CLM Act not required	-33.80255701	150.8829211
EASTERN CREEK	Pioneer Road Services	Old Walgrove ROAD	Other Industry	Under assessment	-33.81190491	150.8392181
EASTLAKES	Budget Petroleum Eastlakes	102 Maloney STREET	Service Station	Regulation being finalised	-33.9316936	151.2093135
EASTLAKES	Former Shell Rosebery service station and adjacent land	275-279 Gardeners ROAD	Service Station	Contamination formerly regulated under the CLM Act	-33.92470279	151.2100722
EASTLAKES	73 Gardeners Road	73 Gardeners ROAD	Unclassified	Regulation under CLM Act not required	-33.92541594	151.2182856
EASTLAKES	Eastlakes Reserve	Evans AVENUE	Service Station	Contamination formerly regulated under the CLM Act	-33.92497291	151.2102725
EASTWOOD	Former Mobil Service Station Eastwood	3-5 Trelawney (Cnr Rutledge St) STREET	Service Station	Regulation under CLM Act not required	-33.79273381	151.079584
EDEN	Caltex Service Station	159 Imlay STREET	Service Station	Under assessment	-37.06324099	149.9044022
EDEN	Caltex Service Station	80-86 Imlay STREET	Service Station	Under assessment	-37.0570984	149.9038538
EDENSOR PARK	7-Eleven (former Mobil) Service Station	615-621 Cowpasture Road (Cnr Elizabeth) DRIVE	Service Station	Regulation under CLM Act not required	-33.88326139	150.865591
EDGECLIFF	BP-branded (former Coles Express) Service Station	67 New South Head ROAD	Service Station	Under assessment	-33.8769602	151.2311617
EDGEWORTH	Caltex Service Station	662 Main ROAD	Service Station	Regulation under CLM Act not required	-32.92566329	151.6278888
EMERALD BEACH	Shell Coles Express Woolgoolga Service Station	1850 Pacific HIGHWAY	Service Station	Regulation under CLM Act not required	-30.16450856	153.1826673
EMERTON	7-Eleven Emerton	135-137 Popondetta ROAD	Service Station	Regulation under CLM Act not required	-33.74463908	150.8102251
EMU HEIGHTS	7-Eleven Service Station	126 Old Bathurst ROAD	Service Station	Regulation under CLM Act not required	-33.74299098	150.6547098
EMU HEIGHTS	Woolworths Service Station	132 Old Bathurst ROAD	Service Station	Regulation under CLM Act not required	-33.7429739	150.6559655
EMU PLAINS	Woolworths Service Station	283 Great Western HIGHWAY	Service Station	Regulation under CLM Act not required	-33.75371349	150.6530165
ENGADINE	BP Service Station	1234 Princes HIGHWAY	Service Station	Contamination currently regulated under CLM Act	-34.07735416	151.01121
ENGADINE	BP Branded Service Station	963 Old Princes HIGHWAY	Service Station	Contamination currently regulated under CLM Act	-34.06428454	151.0167121
ENGADINE	Former Caltex Service Station	995 Old Princes HIGHWAY	Service Station	Regulation under CLM Act not required	-34.06413459	151.0155734
EPPING	7-Eleven (former Mobil) Service Station	246 Beecroft ROAD	Service Station	Regulation under CLM Act not required	-33.77073552	151.080581
ERINA	Former Frozen Food Distribution Depot	1 Aston ROAD	Other Petroleum	Contamination currently regulated under CLM Act	-33.434878	151.3845431
ERINA	Caltex Service Station	155 The Entrance ROAD	Service Station	Under assessment	-33.43824871	151.3801096
ERINA	Coles Express Service Station Erina	211 The Entrance ROAD	Service Station	Regulation under CLM Act not required	-33.43547804	151.3850522
ERINA	7-Eleven Erina	214 The Entrance ROAD	Service Station	Regulation under CLM Act not required	-33.43494257	151.3879511
ERINA	7-Eleven Service Station	96 The Entrance ROAD	Service Station	Regulation under CLM Act not required	-33.43786868	151.3729331

Appendix I Australian and NSW Heritage Data Base Searches

Search Results

1 result found.

Brigadoon 2 Brigg Rd	Epping, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)

Report Produced: Wed Sep 6 07:48:20 2017

Accessibility | Disclaimer | Privacy | © Commonwealth of Australia

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 the Heritage Division.
- **Section 2** - contains heritage items listed by the **Heritage Council of NSW** under the NSW Heritage Act. This includes listing on the State Heritage Register, an Interim Heritage Order or protected under section 136 of the NSW Heritage Act. This information is provided by the Heritage Division.
- **Section 3** - contains items listed by **local councils** on Local Environmental Plans under the Environmental Planning and Assessment Act, 1979 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 NSW Heritage Act.

Your search returned 1 record.

Item name	Address	Suburb	LGA	SHR
Upper Canal System (Pheasants Nest Weir to Prospect Reservoir)		Prospect	Blacktown	01373

Section 3. Items listed by Local Government and State Agencies.

Your search returned 92 records.

Item name	Address	Suburb	LGA	Information source
Araluen	2-4 Brigadoon Court	Epping	Hornsby	LGOV
Armagh	82 Carlingford Road	Epping West	Hornsby	LGOV
Asheldom	47 Essex Street	Epping	Hornsby	LGOV
Brown Memorial and Water Trough	145 Bringelly Road	Leppington	Liverpool	LGOV
Bushland	Beecroft Road (btw	Epping	Hor	LGOV

	Carlingford Road and Kandy Ave)		nsby	
Bushland in Vimiera and Forrester Parks	Albuera Road	Epping	Hornsby	LGOV
Chester Street Uniting Church and grounds	4A Chester Street	Epping	Hornsby	LGOV
Church of Christ	31 Bridge Street	Epping	Parramatta	LGOV
Cottage	40 Surrey Street	Epping	Hornsby	LGOV
Cottage	70 Chester Street	Epping	Hornsby	LGOV
Cottage	78 Kent Road	Epping	Hornsby	LGOV
Croquet Lawn and Pavilion	43A and 47 Kent (Cnr)	Epping	Parramatta	LGOV
Dence Park	Stanley Road	Epping	Hornsby	LGOV
Devlins Creek Bridge	Beecroft Road	Epping	Hornsby	SGOV
Dwelling and Rural Lot - Pinewood	1720 Camden Valley Way	Leppington	Liverpool	LGOV
Edna Hunt Reserve	10a Hillside Crescent	Epping	Parramatta	LGOV
Emmaus Bible College	23-27 Ray Road	Epping	Hornsby	LGOV
Epping Park	66X Norfolk Road	Epping	Hornsby	LGOV
Epping Public School	2-16 Norfolk Road	Epping	Hornsby	LGOV
Epping Railway Station Group	Beecroft Road	Epping	Hornsby	SGOV
Epping Railway Substation	High Street	Epping	Parramatta	SGOV

Epping West Public School (excl. other buildings and grounds)	96-104 Carlingford Road	Epping West	Hornsby	LGOV
Epping/Eastwood Conservation Area	Refer To Map	Epping / Eastwood	Parramatta	LGOV
Fibro House	43 Willoughby Street	Epping	Parramatta	LGOV
Folkestone	87 Oxford Street	Epping	Hornsby	LGOV
Forest Park	Blaxland Road	Epping	Hornsby	LGOV
Garden	27A Chester Street	Epping	Hornsby	LGOV
Garden	132 Midson Road	Epping	Hornsby	LGOV
Garden	93 Oxford Street	Epping	Hornsby	LGOV
Garden	16 Abuklea Road	Epping	Hornsby	LGOV
Garden - The Poplars	64-66 Norfolk Road	Epping	Hornsby	LGOV
Garden Trees	5-7 Essex Street	Epping	Hornsby	LGOV
Glenorie	44 Norfolk Road	Epping	Hornsby	LGOV
Group of Shops	10-16 Oxford Street	Epping	Hornsby	LGOV
Gwydir	40 Norfolk Road	Epping	Hornsby	LGOV
House	88 Carlingford Road	Epping	Hornsby	LGOV
House	48 Oxford Street	Epping	Hornsby	LGOV
House	72 Carlingford Raod	Epping	Hor	LGOV

			nsby	
House	10 Rosebank Avenue	Epping	Hornsby	LGOV
House	9 Rosebank Avenue	Epping	Hornsby	LGOV
House	33 Norfolk Road	Epping	Hornsby	LGOV
House	32 Abuklea Road	Epping	Hornsby	LGOV
House	21-23 Abuklea Road	Epping	Hornsby	LGOV
House	100 Midson Road	Epping	Parramatta	LGOV
House	5 Dorset Street	Epping	Hornsby	LGOV
House	108 Pennant Parade	Epping	Hornsby	LGOV
House	17 Grandview Parade	Epping	Parramatta	LGOV
House	70 Norfolk Road	Epping	Hornsby	LGOV
House	73A Oxford Street	Epping	Hornsby	LGOV
House	76 Essex Street	Epping	Hornsby	LGOV
House	84 Essex Street	Epping	Hornsby	LGOV
House	34 Carlingford Road	Epping	Hornsby	LGOV
House	184 Ray Road	Epping	Hornsby	LGOV
House	80 Ray Road	Epping	Hornsby	LGOV

House	140 Ray Road	Epping	Hornsby	LGOV
House	15 Dorset Street	Epping	Hornsby	LGOV
House	61 Norfolk Road	Epping	Hornsby	LGOV
House	309 Malton Road	Epping North	Hornsby	LGOV
House	57 Chester Street	Epping	Hornsby	LGOV
House	67 Midson Road	Epping	Hornsby	LGOV
House	20 York Street	Epping	Hornsby	LGOV
House	33 Dorset Street	Epping	Hornsby	LGOV
House and Garden	9 Norfolk Road	Epping	Hornsby	LGOV
House and Garden	93 Oxford Street	Epping	Hornsby	LGOV
House and Garden	23 Chester Street	Epping	Hornsby	LGOV
House and Garden	21 Chester Street	Epping	Hornsby	LGOV
Houses	14 and 16 Grandview Parade	Epping	Parramatta	LGOV
Kooringa and Garden	8 Abuklea Road	Epping	Hornsby	LGOV
Kooringa Garden	8 Abuklea Road	Epping	Hornsby	LGOV
Mount Epping	15 Willoughby Street	Epping	Parramatta	LGOV
Our Lady Help of Christians	33 Oxford Street	Epping	Hor	LGOV

Church			nsby	
Ray Park	Plympton Road	North Epping	Hornsby	LGOV
Roadside Trees	Epping Road (b/w Terrys Creek and Pembroke Road)	Epping	Hornsby	LGOV
Rosslyn Hill	166 Ray Road	Epping	Hornsby	LGOV
Row of Bunya Pines	Bringelly Road	Leppington	Liverpool	LGOV
Row of houses	9, 11 and 15 Sussex Street	Epping	Hornsby	LGOV
School of Arts and garden	11-13 Oxford Street	Epping	Hornsby	LGOV
Snaresbrook	45 Chester Street	Epping	Hornsby	LGOV
St Albans Anglican Church and Grounds	3 Pembroke Street	Epping	Hornsby	LGOV
Stanley House	58 Pembroke Street	Epping	Hornsby	LGOV
Stone causeway over Devlin's Creek	Beecroft Road	Epping	Hornsby	LGOV
Street Trees	Chester Street (east of Norfolk Street)	Epping	Hornsby	LGOV
Street Trees	Dorset Street	Epping	Hornsby	LGOV
Street Trees	Sutherland Road (south end)	Epping	Hornsby	LGOV
Street Trees	York Street	Epping	Hornsby	LGOV
Street Trees	Plympton Road	North Epping	Hornsby	LGOV
Terrys Creek Bridge	Epping Road	Epping	Ryde	SGOV

Terrys Crossing in Vimiera Park	121X Essex Street	Epping	Hornsby	LGOV
Timber Cottage	24 Angus Avenue	Epping	Parramatta	LGOV
Uniting Church Grounds	4A Chester Street	Epping	Hornsby	LGOV
Upper Canal System		Mt. Annan/Currans Hill/Catherine Field/Leppington	Camden	LGOV
Wyralla Avenue Conservation Area	Refer To Map	Epping	Parramatta	LGOV

There was a total of 93 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 the Heritage Division 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 SafeWork NSW Records

NSW GOVERNMENT | SafeWork NSW

Locked Bag 2906, Lisarow NSW 2252
Customer Experience 13 10 50
ABN 81 913 830 179 | www.safework.nsw.gov.au

Our Ref: D17/208553
Your Ref: Rohan Hammond

11 September 2017

Attention: Rohan Hammond
JBS & G Australia Pty Ltd
Level 1
50 Margaret St
Sydney NSW 2000

Dear Mr Hammond

RE SITE: 240-244 Beecroft St Epping NSW

I refer to your site search request received by SafeWork NSW on 5 September 2017 requesting information on Storage of Hazardous Chemicals for the above site.

A search of the records held by SafeWork NSW has not located any records pertaining to the above mentioned premises.

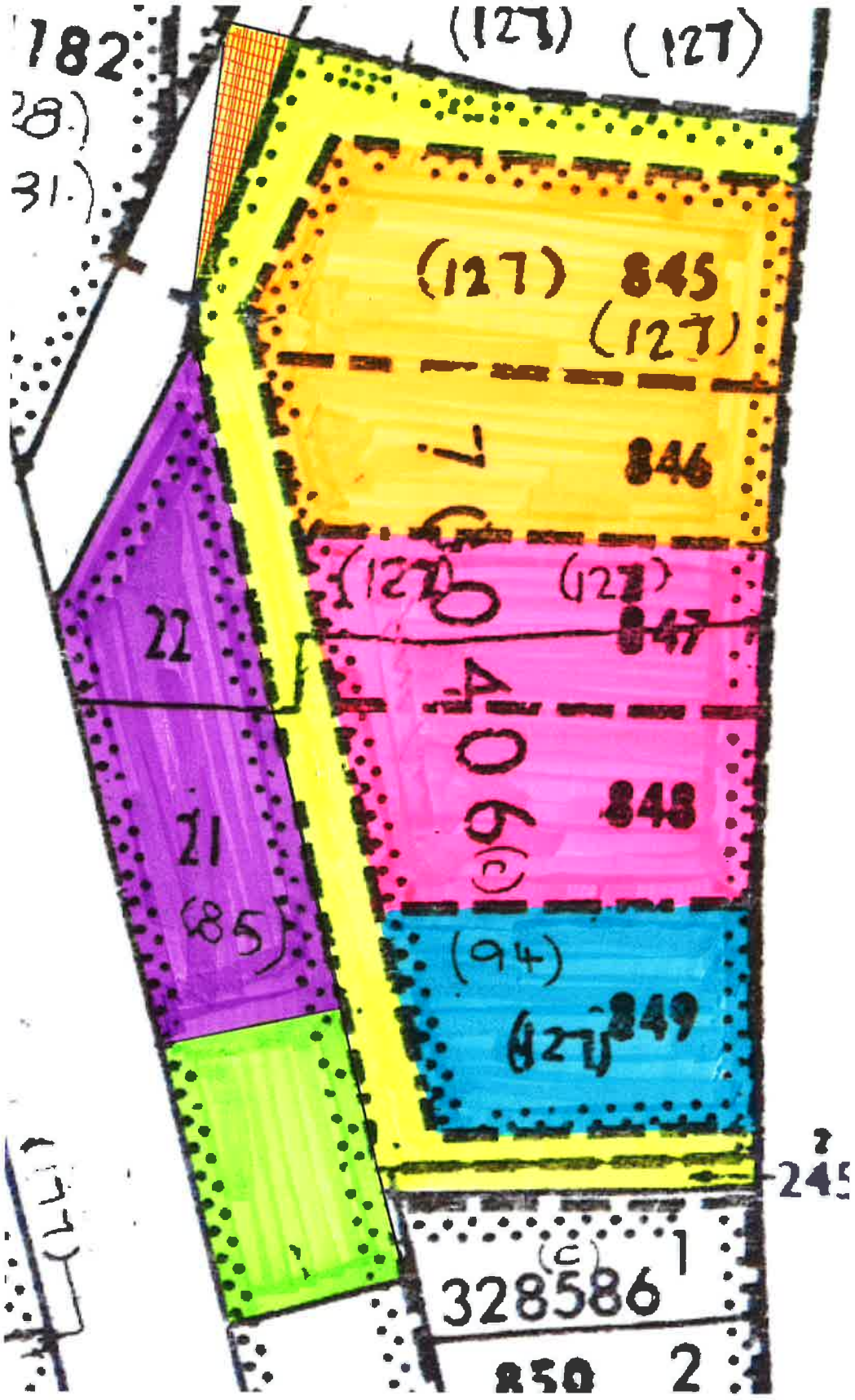
For further information or if you have any questions, please call us on 13 10 50 or email licensing@safework.nsw.gov.au

Yours sincerely

Customer Service Officer
Customer Experience - Operations
SafeWork NSW

Appendix K Current & Historical Land Title Records

CMA V0060-91

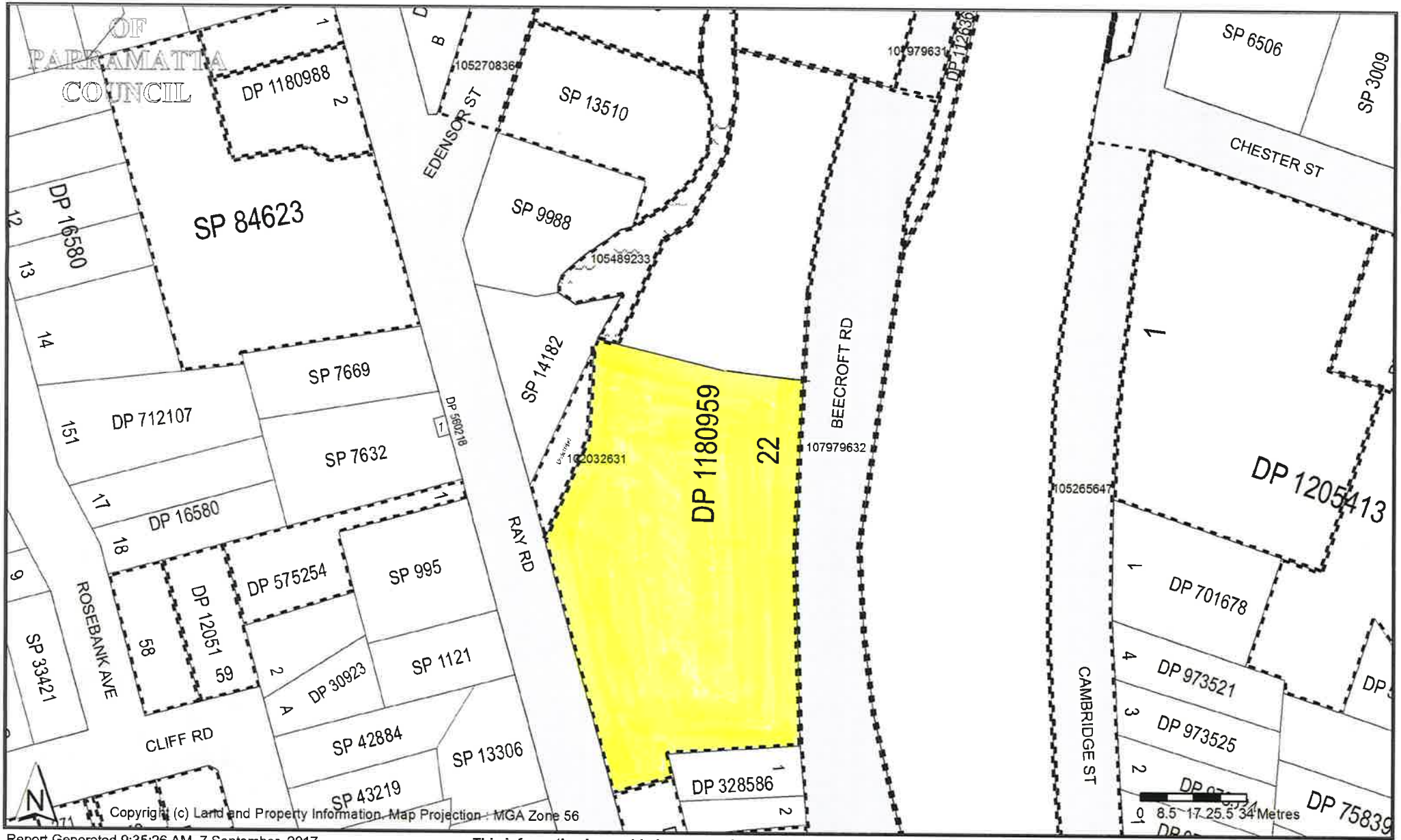

182
(28)
31)
(127)
(127)
(127)
845
(127)
846
(127)
(127)
847
22
904
(c)
848
21
(85)
(94)
(127)
849
245
(c)
1
328586
850
2

NSW Land & Property Information

Cadastral Records Enquiry Report

Requested Parcel : Lot 22 DP 1180959 **Identified Parcel** : Lot 22 DP 1180959

Locality : EPPING **LGA** : PARRAMATTA **Parish** : FIELD OF MARS **County** : CUMBERLAND

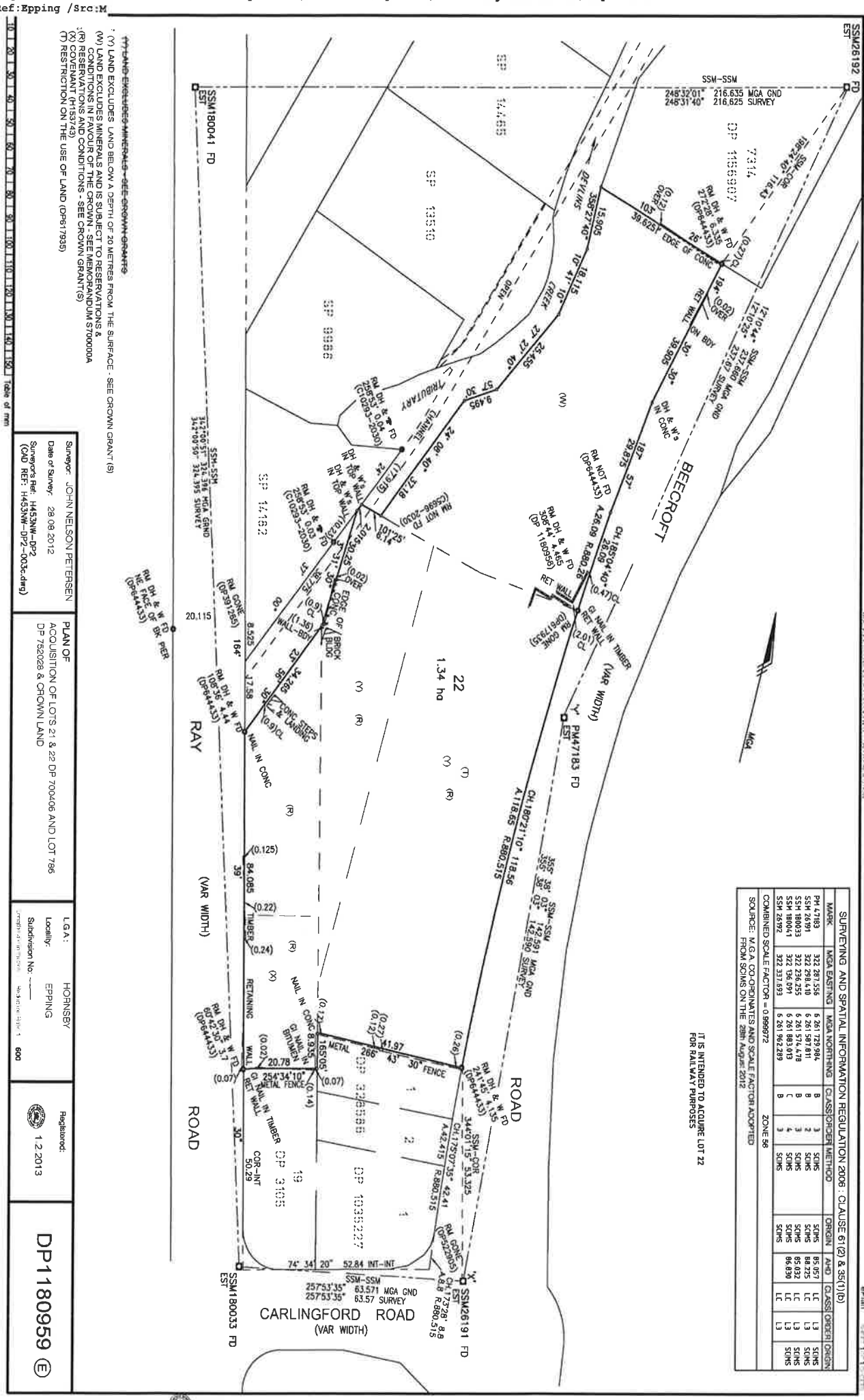


Report Generated 9:35:26 AM, 7 September, 2017

Copyright © Land and Property Information ABN: 23 519 493 925

This information is provided as a searching aid only. While every endeavour is made to ensure the current cadastral pattern is accurately reflected, the Registrar General cannot guarantee the information provided. For all ACTIVITY PRIOR to SEPT 2002 you must refer to the RGs Charting and Reference Maps.

Req:R272114 /Doc:DP 1180959 P /Rev:10-Apr-2015 /Sts:SC.OK /Pgs:ALL /Prt:29-Aug-2017 14:24 /Seq:1 of 2
Ref:Epping /Src:M



SURVEYING AND SPATIAL INFORMATION REGULATION 2006 : CLAUSE 61(2) & 35(1)(b)

MARK	MGA EASTING	MGA NORTHING	CLASS	ORDER	METHOD	ORIGIN	AHD	CLASS	ORDER	ORIGIN
PM 47183	322 287.556	6 261 729.984	B	3	SCIMS	SCIMS	85.057	LC	L3	SCIMS
SSM 26191	322 298.410	6 261 587.811	B	2	SCIMS	SCIMS	88.325	LC	L3	SCIMS
SSM 180033	322 236.255	6 261 574.478	B	3	SCIMS	SCIMS	85.032	LC	L3	SCIMS
SSM 180041	322 196.091	6 261 883.913	C	4	SCIMS	SCIMS	86.030	LC	L3	SCIMS
SSM 26192	322 337.693	6 261 962.289	B	3	SCIMS	SCIMS	86.939	LC	L3	SCIMS
COMBINED SCALE FACTOR = 0.999972		ZONE 56								
SOURCE: M.G.A. CO-ORDINATES AND SCALE FACTOR ADOPTED FROM SCIMS ON THE 28th August 2012										

Surveyor: JOHN NELSON PETERSEN
Date of Survey: 28 08 2012
Surveyor's Ref: H453NW-DP2 (CAD REF: H453NW-DP2-003c.dwg)

PLAN OF
ACQUISITION OF LOTS 21 & 22 DP 700406 AND LOT 786 DP 752028 & CROWN LAND

L.G.A.: HORNSBY
Locality: EPPING
Subdivision No: ——
Scale: 1:600

Registered: 1.2.2013

DP1180959 (E)

NOTATION (Y) AMENDED VIDE 2015-373 9.4.2015

(Y) LAND EXCLUDES LAND BELOW A DEPTH OF 20 METRES FROM THE SURFACE - SEE CROWN GRANT (S)
(W) LAND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS & CONDITIONS IN FAVOUR OF THE CROWN - SEE MEMORANDUM S700000A
(R) RESERVATIONS AND CONDITIONS - SEE CROWN GRANT(S)
(X) COVENANT (H153743)
(T) RESTRICTION ON THE USE OF LAND (DP617935)

~~(Y) LAND EXCLUDES MINERALS - SEE CROWN GRANT(S)~~

ePlan

DP1180959

PLAN FORM 6 WARNING : Creasing or folding will lead to rejection ePlan

DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 1 of 1 Sheet(s)

* OFFICE USE ONLY

SIGNATURES, SEALS and STATEMENTS of intention to dedicate public roads, to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

IT IS INTENDED TO ACQUIRE LOT 22 FOR RAILWAY PURPOSES

Rodd Staples

If space is insufficient use PLAN FORM 6A annexure sheet

DP1180959

Registered : 1.2.2013

Title System : TORRENS

Purpose : ACQUISITION

PLAN OF

ACQUISITION OF LOTS 21 & 22 DP 700406, LOT 786 DP 752028 AND CROWN LAND

LGA : HORNSBY

Locality : EPPING

Parish : FIELD OF MARS

County : CUMBERLAND

Crown Lands NSW / Western Lands Office Approval

I, ... in approving this plan certify
(Authorised Officer)
that all necessary approvals in regard to the allocation of the land shown herein has been given.

Signature: .....

Date: .....

File Number: .....

Office: .....

Subdivision Certificate

I certify that the provisions of s.109J of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to :

the proposed..... set out herein
(insert 'subdivision' or 'new road')

.....
*Authorised Person/*General Manager/*Accredited Certifier

Consent Authority: .....

Date of Endorsement: .....

Accreditation no: .....

Subdivision Certificate no: .....

File no: .....

* Strike through inapplicable parts.

Survey Certificate

I, JOHN NELSON PETERSEN

of WHELANS INSITES DX 288 SYDNEY

a surveyor registered under the *Surveying & Spatial Information Act 2002*, certify that the survey represented in this plan is accurate, has been made in accordance with the *Surveying & Spatial Information Regulation, 2006* and was completed on: ~~17 SEPTEMBER 2012~~ 28 AUGUST 2012

The survey relates to LOT 22

.....

(specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey)

Signature John N Petersen *Dated :* 13/11/2012

Surveyor registered under the Surveying & Spatial Information Act 2002

Datum Line: 'X' - 'Y'

Type: Urban / ~~Rural~~

Plans used in the preparation of survey / ~~compilation~~

DP 644433 C10293-1203 DP 522905 DP 328586
DP 1035227 DP 3105 DP 1156907

If space is insufficient use PLAN FORM 6A annexure sheet

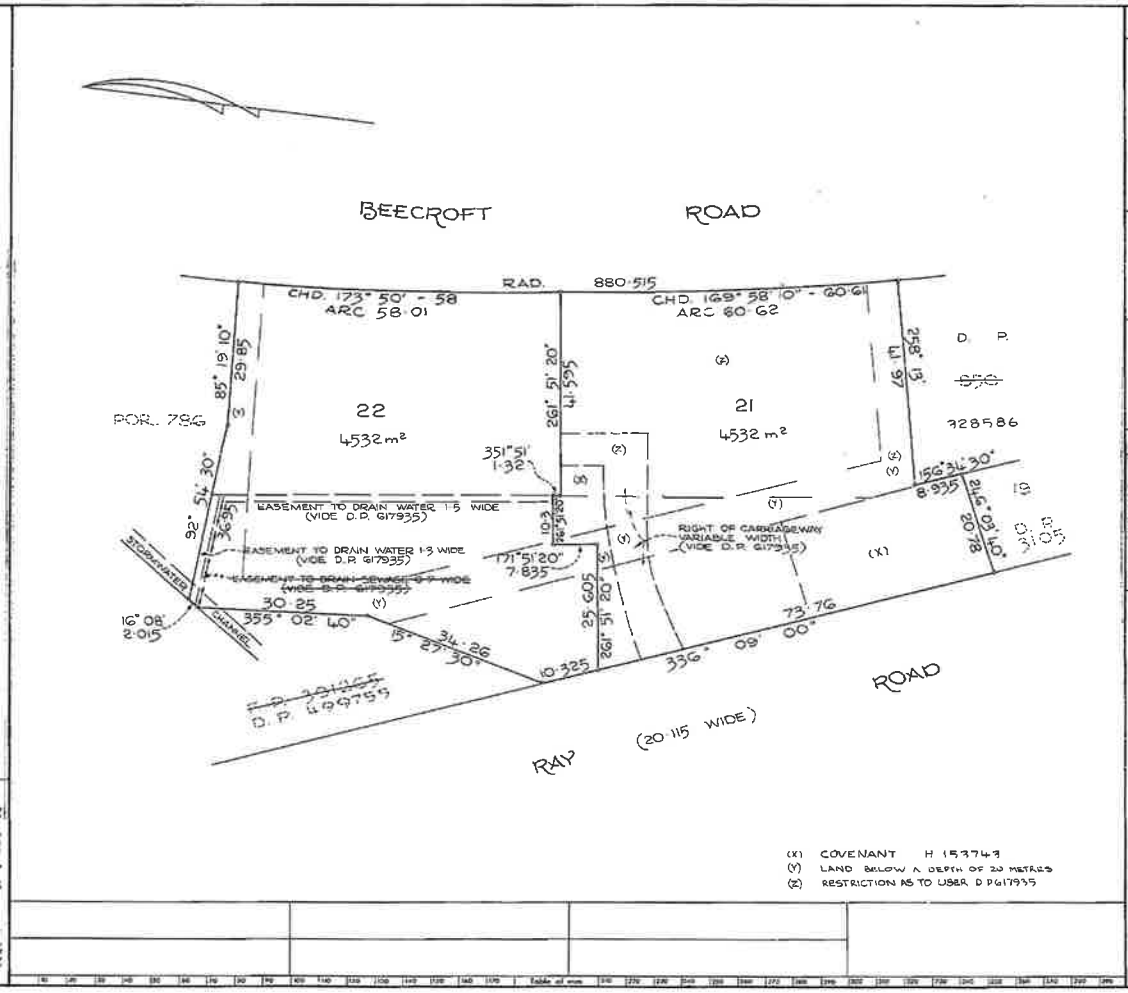
SURVEYOR'S REFERENCE : H453NW-DP2

PLAN FORM 2

Plan Drawing only to appear in this space

OFFICE USE ONLY

Signatures and seals only



D. P. 700406

Registered: 6-3-1984

C.A.: Nº 8474 OF 3·11·1983

Title System: TORRENS

Purpose: SUBDIVISION

Ref. Map: U0060 - 91

Last Plan: D.P. 617935

PLAN OF SUBDIVISION OF LOTS 1,2,3 & 4 IN D.P. 617935

Reduction Ratio 1: 500
Lengths are in metres.

Shire / City: HORNSBY

Locality: EPPING

Parish: FIELD OF MARS

County: CUMBERLAND

This is sheet 1 of my plan in sheets.
(Delete if inapplicable)

I, KEVIN FRANCIS BROWN
of KEVIN F. BROWN & ASSOC'S.
a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan is COMPILED FROM D.P. 617935

20TH JULY, 1983

Signature: Kevin F. Brown

Surveyor registered under Surveyors Act, 1929, as amended.

Pinned for use only for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements or restrictions as to user.

Council Clerk's Certificate

I hereby certify that —

(a) the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans), and

(b) the requirements of section 349 of the Metropolitan Water, Sewerage and Drainage Act, 1924, as amended, (Hunter District Water, Sewerage, and Drainage Act, 1938, as amended)

have been complied with by the applicant in relation to the proposed Subdivision

Subdivision No. 8474

Date 3.11.1983

Signature: Council Clerk

*This part of certificate to be deleted where the application is only for a consolidated lot or the opening of a new road or where the land to be subdivided is wholly outside the area of operation of the Metropolitan Water Sewerage and Drainage Board and the Hunter District Water Board.

(Delete if inapplicable)

M. P. D

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

SURVEYOR'S REFERENCE: 6853X(5957)P2121

I, Bruce Richard Davies, Under Secretary for Lands and 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 day.

2nd April, 1984

Req:R319474 /Doc:DP 0700406 P /Rev:22-Jun-1992 /Sts:OK.OK /Pgs:ALL /Prt:06-Sep-2017 15:49 /Seq:1 of 1
Ref:Epping /Src:M

Req:R319495 /Doc:DP 0617935 P /Rev:25-Nov-1992 /Sts:OK.OK /Pgs:ALL /Prt:06-Sep-2017 15:51 /Seq:1 of 1
Ref:Epping /Src:M

PLAN FORM 2

Plan Drawing only to appear in this space

D.P. 617935

OFFICE USE ONLY

Signatures and seals only.

DIRECTOR

SECRETARY

Council Clerk's Certificate

I hereby certify that –

(a) the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans), and

(b) the requirements of section 348 of the Metropolitan Water, Sewerage and Drainage Act, 1924, as amended, (Hunter District Water, Sewerage, and Drainage Act, 1928, as amended)

have been complied with by the applicant in relation to the proposed SUBDIVISION (Insert "new road", "subdivision" or "consolidated lot") set out hereon.

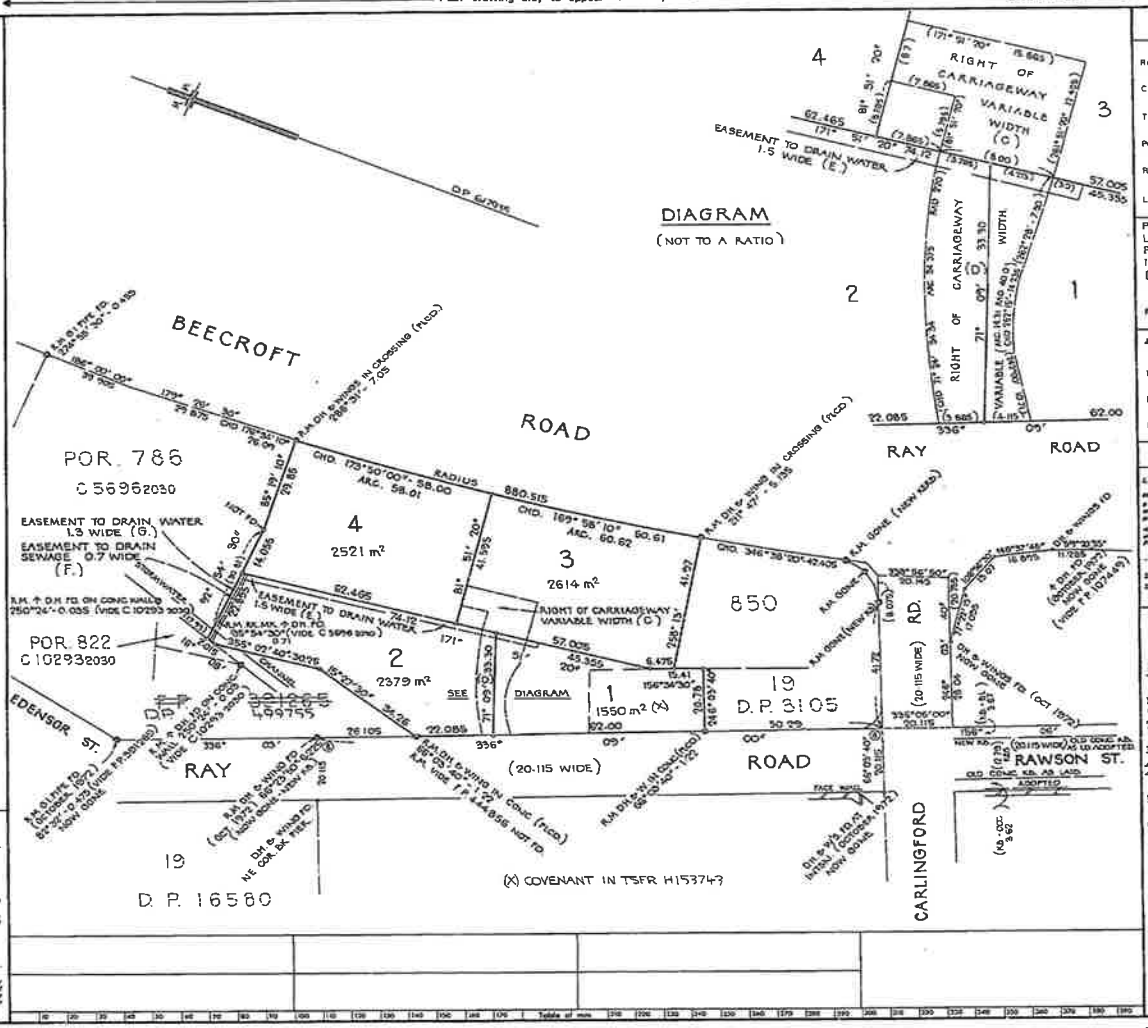
Subdivision No. 8214

Date 22-6-1981

(Signature) Council Clerk

*This part of certificate to be deleted where the application is only for a consolidated lot or the opening of a new road or where the land to be subdivided is wholly outside the areas of operations of the Metropolitan Water Sewerage and Drainage Board and the Hunter District Water Board.

†Delete if inapplicable



D.P. 617935

Registered: 6-8-1981

C.A. No 8214 OF 22-6-1981

Title System: TORRENS

Purpose: SUBDIVISION

Ref. Map: U0060-91#

Last Plan: DP 245352
DP 444856

PLAN OF SUBDIVISION OF LOTS A & B IN F.P. 444856, PORTIONS 845 TO 849 INCLUSIVE AND CLOSED LANE IN D.P. 245352.

Reduction Ratio 1: 800
Lengths are in metres.

Mun./Shire City: HORNSBY

Locality: EPPING

Parish: FIELD OF MARS

County: CUMBERLAND

This is sheet 1 of my plan in sheets.
(Delete if inapplicable)

I, Bryan Maxwell Mason
Frank M. Mason & Co.
of 2 Winslow Street, Milsons Point,
a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan is accurate and has been made in accordance with the Survey Practice Regulations, 1933, and was completed on 7 OCTOBER, 1972 & 15th MAY 1981.

Signature

Surveyor registered under Surveyors Act, 1929, as amended.
Delete one of Accounts "A"-"B"
*Strike out either (1) or (2). †Insert date of survey.

Panel for use only for state tests of intention to dedicate public roads or to create public reserves, drainage reserves, easements or restrictions as to user.

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT 1919, IT IS INTENDED TO CREATE:
1. RIGHT OF CARRIAGEWAY VARIABLE WIDTH (SHOWN C.)
2. RIGHT OF CARRIAGEWAY VARIABLE WIDTH (SHOWN D.)
3. EASEMENT TO DRAIN WATER 1.5 ~~METRES~~ WIDE (SHOWN E.)
4. EASEMENT TO DRAIN SEWAGE 0.7 WIDE (SHOWN F.)
5. EASEMENT TO DRAIN WATER 1.3 WIDE (SHOWN G.)
6. RESTRICTION AS TO USER.

AS SET OUT IN THE ACCOMPANYING INSTRUMENT, SIGNED BY THE COUNCIL CLERK.

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

SURVEYOR'S REFERENCE: 20-91-12

I, Bruce Richard Davies, Under Secretary for Lands and 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 day.

10th August, 1981

LAND ACQUISITION (JUST TERMS COMPENSATION) ACT 1991

Notice of Compulsory Acquisition of Land in the Local Government Areas of the Hills Shire and Hornsby

TRANSPORT FOR NEW SOUTH WALES declares, with the approval of Her Excellency the Governor that the land described in Item 1 of the Schedule below is acquired by compulsory process under the provisions of the Land Acquisition (Just Terms Compensation) Act 1991 as authorised by and for the purposes of the Transport Administration Act 1988.

Dated at Sydney this 21st day of December 2012.

By Her Excellency's Command

SCHEDULE

1. ALL THOSE PIECES OF LAND SITUATED IN THE FOLLOWING TABLE:

Lot in DP	*Local Governement Area*	*Parish*	*County*
LOT 11 in DP 1180958	HORNSBY	FIELD OF MARS	CUMBERLAND
LOT 22 in DP 1180959	HORNSBY	FIELD OF MARS	CUMBERLAND
LOT 31 in DP 1180960	HORNSBY	FIELD OF MARS	CUMBERLAND
LOT 41 in DP 1180962	HORNSBY	FIELD OF MARS	CUMBERLAND
LOT 51 in DP 1180952	HORNSBY	FIELD OF MARS & SOUTH COLAH	CUMBERLAND
LOT 61 in DP 1180953	THE HILLS SHIRE	SOUTH COLAH	CUMBERLAND
LOT 70 in DP 1180970	HORNSBY & THE HILLS SHIRE	FIELD OF MARS & SOUTH COLAH	CUMBERLAND
LOT 71 in DP 1180970	HORNSBY & THE HILLS SHIRE	FIELD OF MARS	CUMBERLAND
LOT 90 in DP 1180950	HORNSBY	FIELD OF MARS & SOUTH COLAH	CUMBERLAND
LOT 91 in DP 1180950	HORNSBY	FIELD OF MARS & SOUTH COLAH	CUMBERLAND
LOT 92 in DP 1180950	HORNSBY	FIELD OF MARS & SOUTH COLAH	CUMBERLAND
LOT 93 in DP 1180950	HORNSBY	FIELD OF MARS & SOUTH COLAH	CUMBERLAND
LOT 94 in DP 1180950	HORNSBY	FIELD OF MARS & SOUTH COLAH	CUMBERLAND
LOT 100 in DP 1180951	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 111 in DP 1180955	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 121 in DP 1180956	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 130 in DP 1180963	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 150 in DP 1180975	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 161 in DP 1180965	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 162 in DP 1180965	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 163 in DP 1180965	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 164 in DP 1180965	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 165 in DP 1180965	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 166 in DP 1180965	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 181 in DP 1180966	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 182 in DP 1180966	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 183 in DP 1180966	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 184 in DP 1180966	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 185 in DP 1180966	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 186 in DP 1180966	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 191 in DP 1180967	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 192 in DP 1180967	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND
LOT 193 in DP 1180967	THE HILLS SHIRE	CASTLE HILL	CUMBERLAND

Req:R272800 /Doc:CT 12342-107 CT /Rev:22-Oct-2012 /Sts:SC.OK /Pgs:ALL /Prt:29-Aug-2017 15:09 /Seq:1 of 2
Ref:Epping /Src:M

NEW SOUTH WALES
Seventy
five
cents
STAMP DUTY
SYDNEY, N.S.W.

No. 1973/2726

New South Wales

12342107

Vol. 12342 Fol. 107
Registered 13-2-1974

Registrar General.

(Page 1) Vol. 12342 Fol. 107

GRANT UPON PURCHASE OF UNNECESSARY ROAD

(UNDER THE PUBLIC ROADS ACT, 1902)

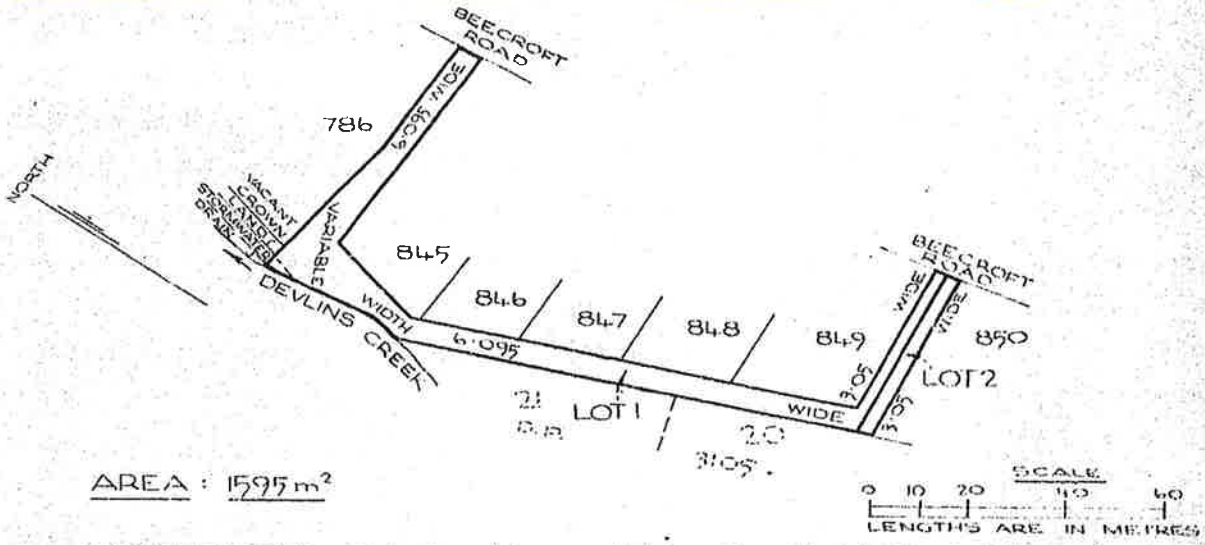
ELIZABETH the SECOND, by the Grace of God Queen of Australia and Her other Realms and Territories, Head of the Commonwealth:—

To All to whom these Presents shall come, Greeting:—

CANCELLED

Whereas REX BUILDING CO. PTY. LIMITED

hereinafter called the GRANTEE) being the owner of land adjoining the land hereinafter described and intended to be hereby granted limited to the surface thereof and to a depth of twenty metres below such surface (formerly road which was duly closed in accordance with the provisions of the Public Roads Act, 1902) agreed to have such land granted to it upon payment of the sum of one hundred and four thousand two hundred and fifty three dollars being the value thereof agreed upon between Our Minister for Lands and the GRANTEE AND WHEREAS the said sum has been duly paid and all things required by law to be done to entitle the GRANTEE to a Grant of the fee simple of the said land Subject to the Reservations Exceptions and Conditions hereinafter contained have been done and performed NOW THESE PRESENTS WITNESS That in consideration of the premises WE DO HEREBY GRANT unto the GRANTEE Subject to the Reservations Exceptions and Conditions hereinafter contained ALL THAT parcel of land containing by admeasurement one thousand five hundred and ninety five square metres be the same more or less situated in the County of Cumberland Parish of Field of Mars at Carlingford Being the closed road separating portions 845 to 849 inclusive from portion 786 vacant Crown land Devlins Creek Lots 20 and 21 in Deposited Plan No.3105 and portion 850 being Lots 1 and 2 in Deposited Plan No.245352



As per Plan hereon SAVING AND EXCEPTING unto Us Our Heirs and Successors all that part of the said land which lies at a depth greater than twenty metres below the surface thereof To Hold unto the GRANTEE in fee simple.
Provided Nevertheless AND WE DO ALSO HEREBY RESERVE AND EXCEPT unto Us Our Heirs and Successors all minerals which the land hereby granted contains with full power and authority for Us Our Heirs and Successors and such person or persons as shall from time to time be authorised by Us or Them to enter upon the land hereby granted and to search for mine dig and remove the said minerals And also all such parts and so much of the land hereby granted as may hereafter be required for public ways in over and through the same to be set out by Our Governor for the time being of Our said State or some person by him authorised in that respect with full power for Us Our Heirs and Successors and for Our Governor aforesaid by such person or persons as shall be by Us Them or him authorised in that behalf to make and conduct all such public ways And the right of full and free ingress egress and regress into out of and upon the land hereby granted for the several purposes aforesaid or any of them Provided Further AND IT IS EXPRESSLY DECLARED that mining operations may have been and may be carried on upon and in the land below the land hereby granted and the lands adjoining the land hereby granted and the land below the same and metals and minerals may have been and may be removed therefrom and that these presents are made upon and subject to the condition that neither the GRANTEE nor its sequels in title shall be entitled to make or prosecute any claim for damages or take any proceedings either by way of injunction or otherwise against Us Our Heirs or Successors or the Government of Our said State or any lessee or lessees under any Mining Act or Acts of Our said State or his or their executors administrators or assigns for or in respect of any damage or loss occasioned by the letting down subsidence or lateral movement of the land hereby granted or otherwise howsoever by reason of the following acts and matters that is to say by reason of Us Our Heirs or Successors or the Government of Our said State or any person on Our Their or its behalf or any lessee or lessees as aforesaid or his or their executors administrators or assigns having worked or now or hereafter working any mines or having carried on or now or hereafter carrying on mining operations or having searched for worked won or removed or now or hereafter searching for working winning or removing any metals or minerals under in or from the land below the land hereby granted or on in under or from any other lands situated laterally to the land hereby granted and the land below the same and whether on or below the surface of such other lands Provided Lastly AND WE DO HEREBY EXPRESSLY RESERVE unto Us Our Heirs and Successors the liberty and authority by reason of the acts and matters aforesaid or in the course thereof for Us Our Heirs and Successors and the Government of Our said State and any person on Our Their or its behalf and any lessee or lessees as aforesaid and his or their executors administrators and assigns to from time to time let down without payment of any compensation whatsoever any part of the land hereby granted and/or of the surface thereof In Testimony Whereof We have caused this Our Grant to be Sealed with the Seal of Our said State

Witness Our Governor of Our State of New South Wales and its Dependencies in the Commonwealth of Australia, at Sydney in Our said State, this sixth day of February in the twenty third year of Our Reign and in the year of Our Lord one Thousand nine hundred and seventy four

Governor

FOR ENDORSEMENTS SEE PAGE 2

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

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

Req:R272800 /Doc:CT 12342-107 CT /Rev:22-Oct-2012 /Sts:SC.OK /Pgs:ALL /Prt:29-Aug-2017 15:09 /Seq:2 of 2
Ref:Epping /Src:M

V. C. N. BLIGHT, GOVERNMENT PRINTER

R956922,
S245725
DP 617935

Vol. 12342 Fol 107

SCHEDULE OF REGISTERED PROPRIETORS

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
Capital & Counties (Australia) Pty. Limited.	Transfer	S245725	—	12-1-1981	

CERTIFICATE OF TITLE ISSUING ON DP 617935
NO DEALING TO BE REGISTERED WITHOUT REFERENCE TO SURVEY DRAFTING BRANCH

SCHEDULE OF ENCUMBRANCES ETC.

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		
~~Caveat~~	R956922	—	~~by Capital & Counties (Australia) Pty Limited~~ by Capital & Counties (Australia) Pty Limited	30-7-1980.		Lapsed	S245725.	
	D.P. 617935		Interests created pursuant to Section 888 Conveyancing Act, 1919, by the registration of Deposited Plan 617935	6-8-1981.				

This deed is cancelled as to Whole
New Certificates of Title have issued on 27.8.1981
for lots in ~~Deposited~~ Plan No. 617935 as follows:-
Lots 1-4 Vol. 14516 Fol. 106-109 respectively.

REGISTRAR GENERAL

(Page 2 of 2 pages)

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

Req:R316792 /Doc:CT 12220-041 CT /Rev:14-Jan-2011 /Sts:OK.SC /Pgs:ALL /Prt:06-Sep-2017 12:25 /Seq:1 of 2
Ref:Epping /Src:M

CERTIFICATE OF TITLE

NEW SOUTH WALES — REAL PROPERTY ACT, 1900

12220041

Vol. 12220 Fol. 41

Edition issued 17-9-1973.

N358429

Prior Title (Crown Grant) Vol. 2790 Fol. 4

(Page 1) Vol. 12220 Fol. 41

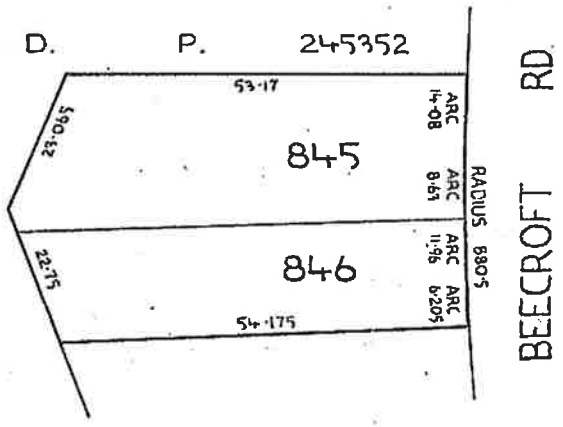
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Registrar General.

CANCELLED

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



AREA: 2409 m²
REDUCTION RATIO 1:800

N358429 S.G.

K.S.

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Portions 845 and 846 in the Shire of Hornsby Parish of Field of Mars and County of Cumberland. EXCEPTING THEREOUT the minerals reserved by the Crown Grant.

FIRST SCHEDULE

~~REX BUILDING CO. PTY. LIMITED.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
~~2. Mortgage No. N358429 to Interim Mortgage Finance Limited. Entered 10-8-1973.~~ Discharged P258196

Registrar General

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

WARNING THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE

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

Vol. 12220 Fol 41

(Page 2 of 2 pages)

V. C. N. BLIGHT, GOVERNMENT PRINTER

N358429

P288196

P—7

R956922pl

S245725

DP617935

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
Capital & Counties (Australia) Pty. Limited.	Transfer	S245725	—	12-1-1981.	[signature]

[illegible] DP617935
[illegible] TO BE REGISTERED WITHOUT REFERENCE TO [illegible]

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
~~Mortgage~~	~~N358429A~~	~~4-7-1973~~	~~to Angel Place Finance Limited~~	~~2-11-1973~~	[signature]	Discharged	P288197	[signature]
~~Caveat~~	~~R956922~~	—	~~by Capital & Counties (Australia) Pty Limited~~	~~30-7-1980~~	[signature]	Lapsed	S245725.	[signature]
	D.P. 617935		Interests created pursuant to Section 90B Conveyancing Act, 1919, by the registration of Deposited Plan 617935	6-8-1981	[signature]			

This deed is cancelled as to whole.
New Certificates of Title have issued on 27-8-1981
for lots in Deposited Plan No. 617935 as follows:-
Lots 1-4 Vol. 14516 Fol 106-109 respectively.

[signature]
REGISTRAR GENERAL

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

Req:R316792 /Doc:CT 12220-041 CT /Rev:14-Jan-2011 /Sts:OK.SC /Pgs:ALL /Prt:06-Sep-2017 12:25 /Seq:2 of 2
Ref:Epping /Src:M
RG 2/60A

Req:R316794 /Doc:CT 12220-042 CT /Rev:14-Jan-2011 /Sts:OK.SC /Pgs:ALL /Prt:06-Sep-2017 12:25 /Seq:1 of 2
Ref:Epping /Src:M

[redacted]

ICATE OF TITLE

NEW SOUTH WALES

PROPERTY ACT, 1900

12220042

Prior Title (Crown Grant)
Vol. 2790 Fol. 5

Vol. 12220 Fol. 42

Edition issued 17-9-1973.

N358429

(Page 1) Vol. 12220 Fol. 42

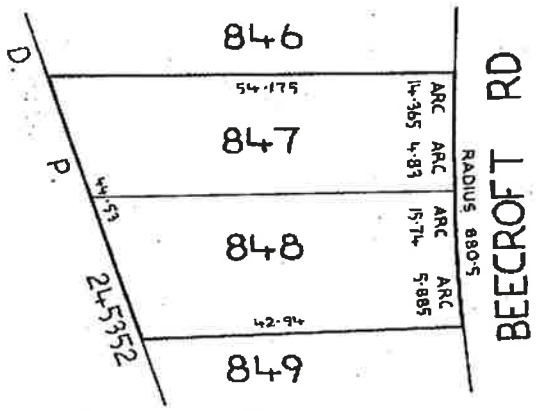
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Registrar General.

CANCELLED

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



AREA: 2023 m²
REDUCTION RATIO 1:800

N358429 S.G.
A.S.

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Portions 847 and 848 in the Shire of Hornsby Parish of Field of Mars and County of Cumberland. EXCEPTING THEREOUT the minerals reserved by the Crown Grant.

FIRST SCHEDULE

~~REX BUILDING CO. PTY. LIMITED.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
~~2. Mortgage No. N358429 to Interim Mortgage Finance Limited. Entered 10-8-1973.~~ Discharged P288196

Registrar General

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

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

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

Req:R316794 /Doc:CT 12220-042 CT /Rev:14-Jan-2011 /Sts:OK.SC /Pgs:ALL /Prt:06-Sep-2017 12:25 /Seq:2 of 2
Ref:Epping /Src:M

N3584/29AM

P288196(D)M
P 7(D)M

R956922 p&c
S245725TR

DP 617935

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
Capital & Counties (Australia) Pty. Limited.	Transfer	S245725	—	12-1-1981.	[signature]

NEW CERTIFICATE(S) OF TITLE ISSUING ON DP 617935
NO DEALING TO BE REGISTERED WITHOUT REFERENCE TO SURVEY & MAPPING BRANCH.

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
Mortgage	N3584 29"A"	4-7-1973	to Angel Place Finance Limited	2-11-1973	[signature]	Discharged	P288197	[signature]
Caveat	R956922	—	by Country Capital & Counties (Australia) Pty Limited	30-7-1980	[signature]	Lapsed	S245725	[signature]
	D.P. 617935		[illegible] created pursuant to Section 88B Conveyancing Act, 1919,					
			by the registration of Deposited Plan 617935	6-8-1981	[signature]			

This deed is cancelled as to Whole
New Certificates of Title have issued on 27.8.1981
for lots in Deposited Plan No. 617935 as follows:-
Lots 1-4 Vol. 14516 Fol. 106-109 respectively.

[signature]
REGISTRAR GENERAL

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

Req:R274787 /Doc:CT 12220-043 CT /Rev:14-Jan-2011 /Sts:OK.SC /Pgs:ALL /Prt:29-Aug-2017 19:57 /Seq:1 of 2
Ref:epping /Src:M

CERTIFICATE OF TITLE

NEW SOUTH WALES

PROPERTY ACT, 1900

12220043

(Page 1) Vol. 12220 Fol. 43

Prior Title (Crown Grant)
Vol. 2685 Fol. 66

Vol. 12220 Fol. 43

Edition issued 17-9-1973.

N358429

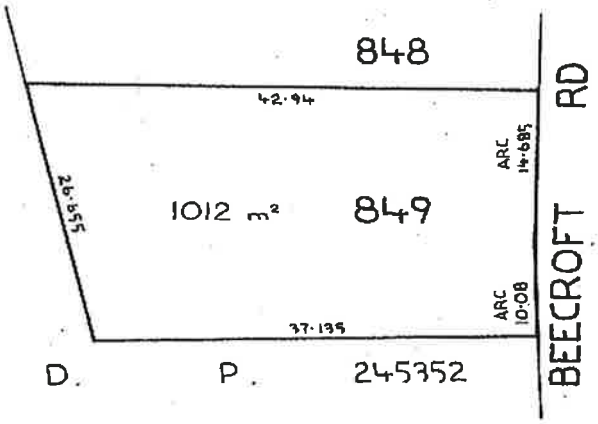
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Registrar General.

CANCELLED

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



N358429 S.G.

RS.

REDUCTION RATIO 1:500

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Portion 849 in the Shire of Hornsby Parish of Field of Mars and County of Cumberland. EXCEPTING THEREOUT the minerals reserved by the Crown Grant.

FIRST SCHEDULE

~~REX BUILDING CO. PTY. LIMITED.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
~~2. Mortgage No. N358429 to Interim Mortgage Finance Limited. Entered 10-8-1973. Discharged P 288196~~

Registrar General

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

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

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

Vol. 12220 Fol. 43

N358429AN
P288196D
P 7 M
R956922 pt
S245725TR
DP617935

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
Capital & Counties (Australia) Pty. Limited.	Transfer	S245725	—	12-1-1981	[signature]

NEW CERTIFICATE(S) OF TITLE ISSUING ON DP617935
NO DEALING TO BE REGISTERED WITHOUT REFERENCE TO SURVEY DRAFTING BRANCH.

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
~~Mortgage~~	~~N358429"A"~~	~~4-7-1973~~	~~to Angel Place Finance Limited~~	~~2-11-1973~~	[signature]	Discharged	P288197	[signature]
Caveat	A956922	—	by Capital & ~~Countries~~ Counties (Australia) Pty Limited	30-7-1980	[signature]	Lapsed	S245725	[signature]
	D.P.617935		[illegible] created pursuant to Section [illegible] Conveyancing Act, [illegible] by the registration of Deposited Plan 617935	6-8-1981	[signature]			

This deed is cancelled as to Whole
New Certificates of Title have Issued on 27.8.1981
for lots in Deposited Plan No. 617935 as follows:-
Lots 1-4 Vol. 14516 Fol. 106-09 respectively.

[signature]
REGISTRAR GENERAL

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

Req:R272359 /Doc:CT 14516-106 CT /Rev:22-Dec-2010 /Sts:OK.SC /Pgs:ALL /Prt:29-Aug-2017 14:41 /Seq:1 of 2
Ref:Epping /Src:M

[redacted]

IFICATE OF TITLE

REAL PROPERTY ACT, 1900

14516106

NEW SOUTH WALES

Appln. No.9195 (part)

Vol. 14516 Fol. 106

Prior Titles:
Vol. 7863 Fol.216 Vol.12220 Fol. 43
Vol. 7998 Fol.120 Vol.12342 Fol.107
Vol.12220 Fol. 42

EDITION ISSUED
27 8 1981

(Page 1) Vol. 14516 Fol. 106

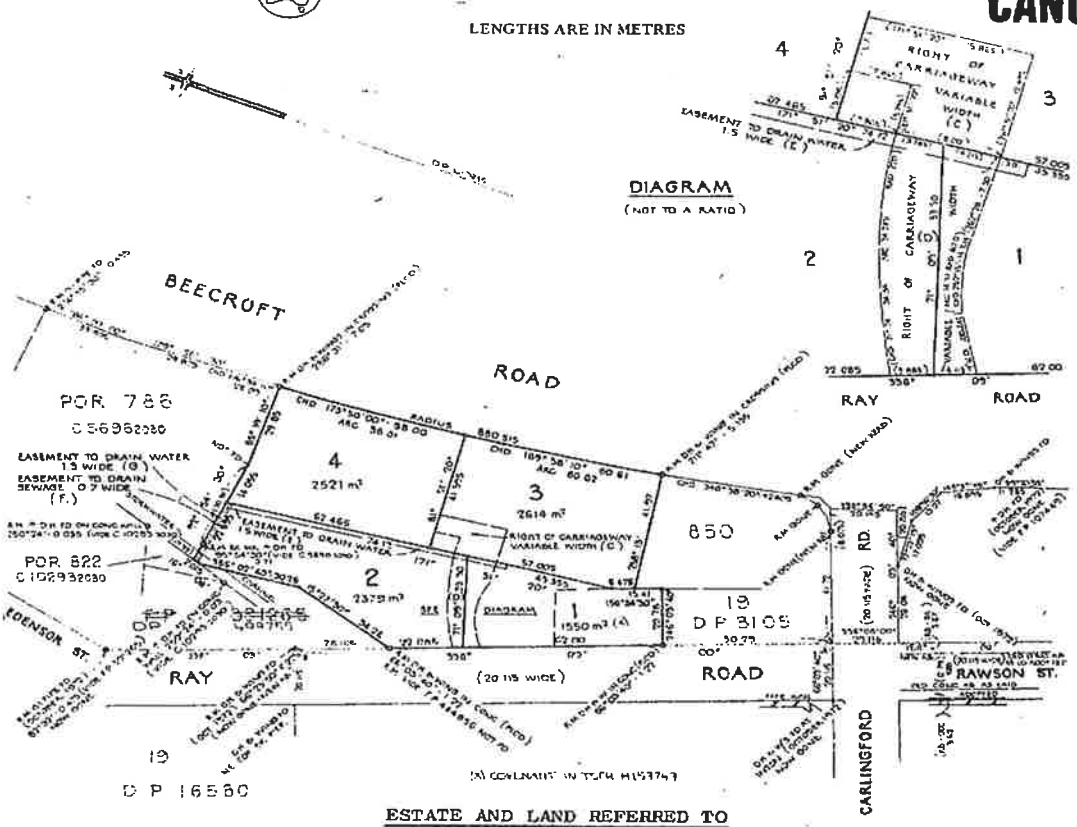
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Registrar General.

CANCELLED

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 1 in Deposited Plan 617935 at Epping in the Shire of Hornsby Parish of Field of Mars and County of Cumberland being part of Portion 16 granted to William Kent, Junior on 17-4-1803, part of Portion 849 granted by Crown Grant Volume 2685 Folio 66, part of Portions 847 and 848 granted by Crown Grant Volume 2790 Folio 5 and part of 1595 square metres granted by Crown Grant Volume 12342 Folio 107. EXCEPTING THEREOUT the land below a depth of 20 metres from the surface of the land reserved by Crown Grant Volume 12342 Folio 107 and the minerals reserved by Crown Grants Volume 2685 Folio 66, Volume 2790 Folio 5 and Volume 12342 Folio 107.

FIRST SCHEDULE

~~CAPITAL & COUNTIES (AUSTRALIA) PTY. LIMITED.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grants above referred to.
2. H153743 Covenant affecting the part of the land above described shown so burdened in Deposited Plan 617935.
3. DP617935 Right of Carriageway affecting the part of the land above described shown so burdened in Deposited Plan 617935.
4. DP617935 Right of Carriageway appurtenant to the land above described.
5. DP617935 Easement to drain water 1.5 wide affecting the part of the land above described shown so burdened in Deposited Plan 617935.
6. DP617935 Easement to drain water 1.5 wide appurtenant to the land above described.
7. DP617935 Easement to drain water 1.3 wide appurtenant to the land above described.

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

2/64

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

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE REGISTRAR GENERAL'S OFFICE.

Vol. 14516 Fol. 106

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	Registrar General
Pemta Pty Limited by Transfer T838236 Registered 30-12-1983	

SECOND SCHEDULE (continued)

PARTICULARS	Registrar General	CANCELLATION
T979268 Application - Easement to drain water 1.5 wide created by D.P.617935 is released insofar as it affects Lot 21 in D.P.700406. Registered 28-3-1984.		
T979271 Application - Right of Carriageway created by D.P.617935 is released insofar as it is appurtenant to Lot 21 in D.P.700406. Registered 28-3-1984.		

DP LSP 700406 Registered 30.3.1984
This folio is cancelled as to whole/~~part~~ upon creation of computer folios for lots 21 - 22 in the abovementioned plan.

Registrar General.

NOTATIONS AND UNREGISTERED DEALINGS

DP700406
T 838236 Tot
T979268 by
— 9 Ref
— 71 Ref

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

Req:R272773 /Doc:CT 14516-107 CT /Rev:22-Dec-2010 /Sts:OK.SC /Pgs:ALL /Prt:29-Aug-2017 15:07 /Seq:1 of 2
Ref:Epping /Src:M

[redacted]IFICATE OF TITLE

NEW SOUTH WALES

REAL PROPERTY ACT, 1900

14516/107

Vol. 14516 Fol. 107

EDITION ISSUED
27 8 1981

Appln. No.9195 (part)

Prior Titles Vol. 7998 Fol.130
Vol.12220 Fol. 41
Vol.12220 Fol. 42
Vol.12342 Fol.107

(Page 1) Vol. 14516 Fol. 107

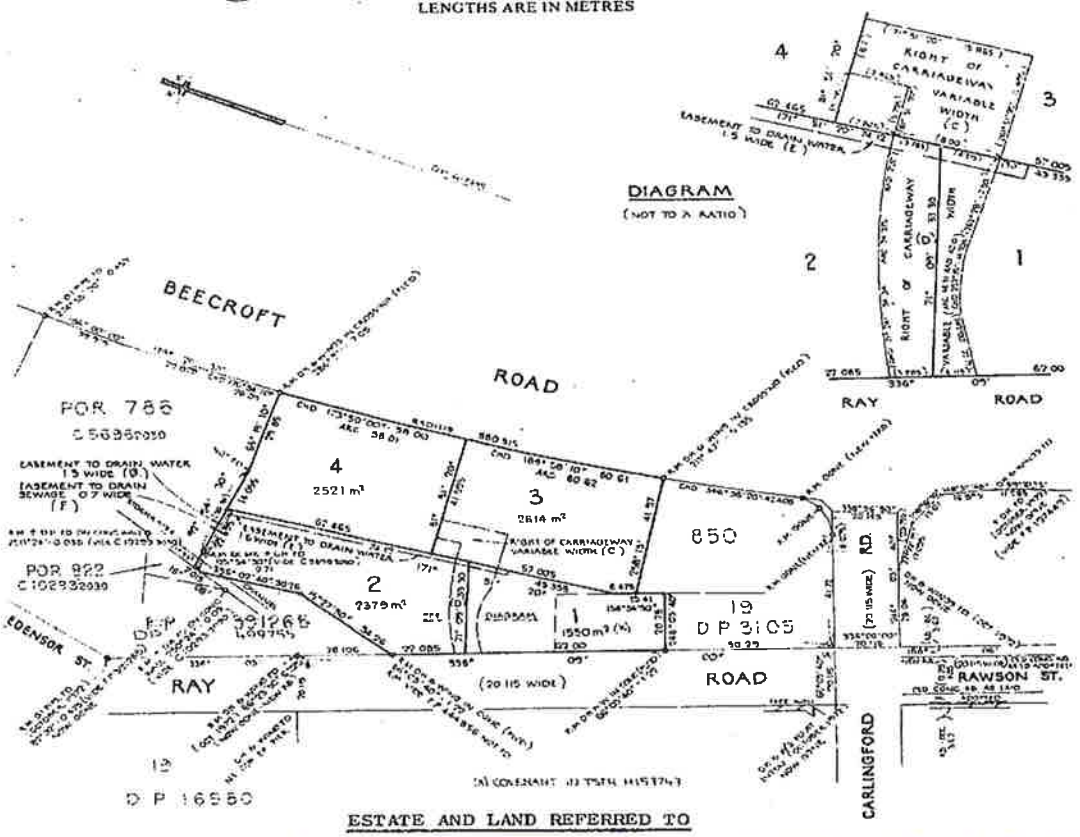
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Registrar General.

CANCELLED

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in Deposited Plan 617935 at Epping in the Shire of Hornsby Parish of Field of Mars and County of Cumberland being part of Portion 16 granted to William Kent, Junior on 17-4-1803, part of Portions 845 and 846 granted by Crown Grant Volume 2790 Folio 4, part of Portions 847 and 848 granted by Crown Grant Volume 2790 Folio 5 and part of 1595 square metres granted by Crown Grant Volume 12342 Folio 107. EXCEPTING THEREOUT the land below a depth of 20 metres from the surface of the land reserved by Crown Grant Volume 12342 Folio 107 and the minerals reserved by Crown Grants Volume 2790 Folios 4 and 5 and Volume 12342 Folio 107.

FIRST SCHEDULE

~~CAPITAL & COUNTIES (AUSTRALIA) PTY. LIMITED.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grants above referred to.
2. DP617935 Right of Carriageway affecting the part of the land above described shown so burdened in Deposited Plan 617935.
3. DP617935 Right of Carriageway appurtenant to the land above described.
4. DP617935 Easement to drain water 1.5 wide affecting the part of the land above described shown so burdened in Deposited Plan 617935.
5. ~~DP617935 Easement to drain sewage 0.7 wide affecting the part of the land above described shown so burdened in Deposited Plan 617935.~~ T979270
6. DP617935 Easement to drain water 1.3 wide affecting the part of the land above described shown so burdened in Deposited Plan 617935.

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

2/64

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

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE REGISTRAR GENERAL'S OFFICE.

Vol. 14516 Fol. 107

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	Registrar General
Pemta Pty Limited by Transfer T838236 Registered 30-12-1983	[signature]

SECOND SCHEDULE (continued)

PARTICULARS	Registrar General	CANCELLATION
T979268 Application - Easement to drain water 1.5 wide created by D.P.617935 is released insofar as it affects Lot 21 in D.P.700406. Registered 28-3-1984.	[signature]	
T979269 Application - Easement to drain water 1.3 wide created by D.P.617935 is released insofar as it is appurtenant to Lot 22 in D.P.700406. Registered 28-3-1984.	[signature]	
T979271 Application - Right of Carriageway created by D.P.617935 is released insofar as it is appurtenant to Lot 21 in D.P.700406. Registered 28-3-1984.	[signature]	

DP/~~SP~~ 700406 Registered 30·3·1984
This folio is cancelled as to whole/~~part~~ upon creation of computer folios for lots 21 – 22 in the abovementioned plan.

[signature]

Registrar General.

NOTATIONS AND UNREGISTERED DEALINGS

DP700406
T838236 Tr
T979268 Ref
— 9 Ref
— 70 Ref
— 1 Ref

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

Req:R272774 /Doc:CT 14516-108 CT /Rev:22-Dec-2010 /Sts:OK.SC /Pgs:ALL /Prt:29-Aug-2017 15:07 /Seq:1 of 2
Ref:Epping /Src:M

14516108

[redacted]IFICATE OF TITLE

NEW SOUTH WALES 66 [redacted]REAL PROPERTY ACT, 1900

Crown Grants Vol. 2685 Fol. 6
Vol. 2790 Fol.
Vol.12342 Fol.107 5

Prior Titles Vol.12220 Fol. 42
Vol.12220 Fol. 43
Vol.12342 Fol.107

Vol. 14516 Fol. 108

CANCELLED

EDITION ISSUED
27 8 1981

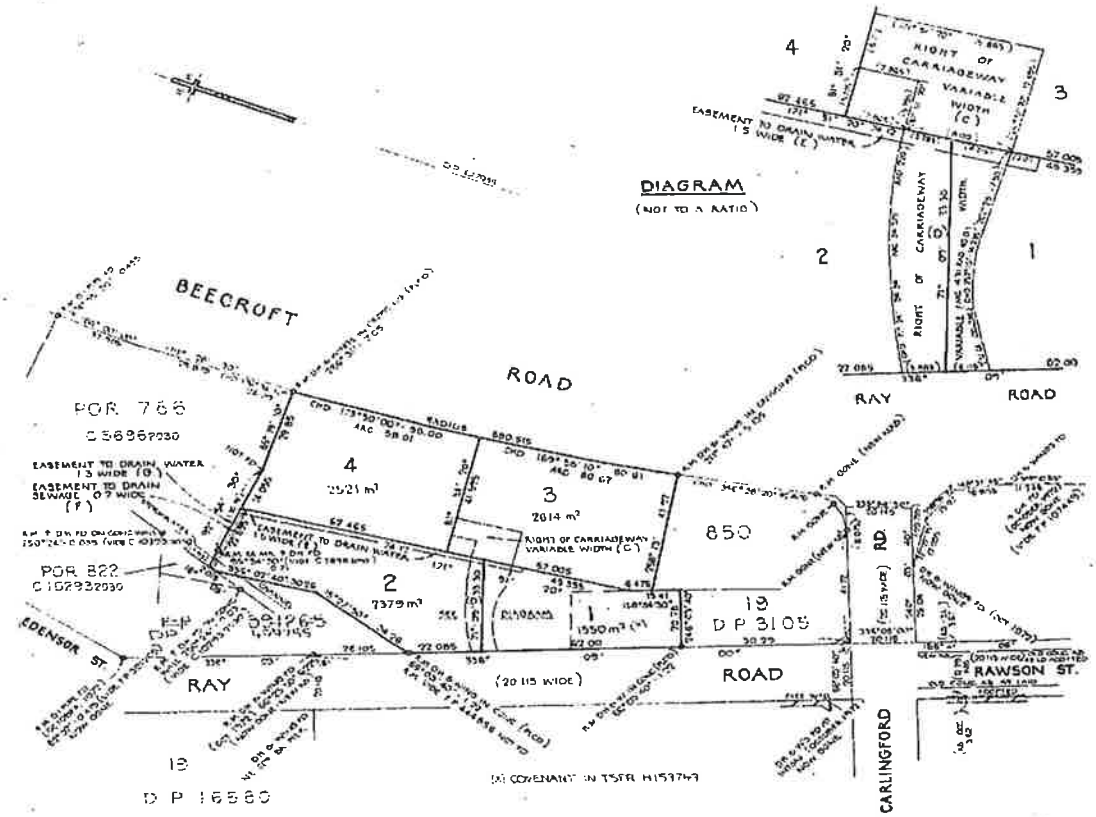
(Page 1) Vol. 14516 Fol. 108

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 3 in Deposited Plan 617935 at Epping in the Shire of Hornsby Parish of Field of Mars and County of Cumberland. EXCEPTING THEREOUT the land below a depth of 20 metres from the surface reserved by Crown Grant Volume 12342 Folio 107 and the minerals reserved by the Crown Grant.

FIRST SCHEDULE

~~CAPITAL & COUNTIES (AUSTRALIA) PTY. LIMITED.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grants above referred to.
2. DP617935 Right of Carriageway affecting the part of the land above described shown so burdened in Deposited Plan 617935.
3. DP617935 Right of Carriageway appurtenant to the land above described.
4. DP617935 Easement to drain water 1.5 wide appurtenant to the land above described.
5. DP617935 Easement to drain water 1.3 wide appurtenant to the land above described.
6. DP617935 Restriction as to user.

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

2/64

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

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE REGISTRAR GENERAL'S OFFICE.

Vol. 14516 Fol. 108

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	Registrar General
Pemta Pty. Limited by Transfer S885450. Registered 29-1-1982.	

SECOND SCHEDULE (continued)

PARTICULARS	Registrar General	CANCELLATION
T800468 Lease to Philip Morris Limited of premises known as Suite 4.01, Level 4 Building A, 244 Beecroft Road, Epping, together with option of renewal. Expires 31-7-1988. Registered 31-10-1983.		
T853110 Lease to Shaklee Australia Pty. Limited of premises being Suite 4.02, Level 4, Building A, 244 Beecroft Road, Epping with option of Renewal, Expires 31-7-1987. Registered 16-12-1983.		
T979268 Application - Easement to drain water 1.5 wide created by D.P.617935 is released insofar as it affects the site comprised in Lot 21 in D.P.700406. Registered 28-3-1984.		
T979271 Application - Right of Carriageway created by D.P.617935 is released insofar as it is appurtenant to Lot 21 in D.P.700406. Registered 28-3-1984.		

DP/SP 700406 Registered 30.3.1984
This folio is cancelled as to whole/~~part~~ upon creation of computer folios for lots 21-22 in the abovementioned plan.

Registrar General.

NOTATIONS AND UNREGISTERED DEALINGS

S885450 Tex
T800468 Lea
DP700406
T853110 L (premises)
T979268 Ley
— 9 Ley
— 71 Ley

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

Req:R272775 /Doc:CT 14516-109 CT /Rev:22-Dec-2010 /Sts:OK.SC /Pgs:ALL /Prt:29-Aug-2017 15:07 /Seq:1 of 2
Ref:Epping /Src:M

[redacted]

IFICATE OF TITLE

NEW SOUTH WALES

REAL PROPERTY ACT, 1900

14516/109

Vol. 14516 Fol. 109

EDITION ISSUED

27 8 1981

Crown Grants Vol. 2790 Fol. 4
Vol. 2790 Fol. 5
Vol.12342 Fol.107

Prior Titles Vol.12220 Fol. 41
Vol.12220 Fol. 42
Vol.12342 Fol.107

(Page 1) Vol. 14516 Fol. 109

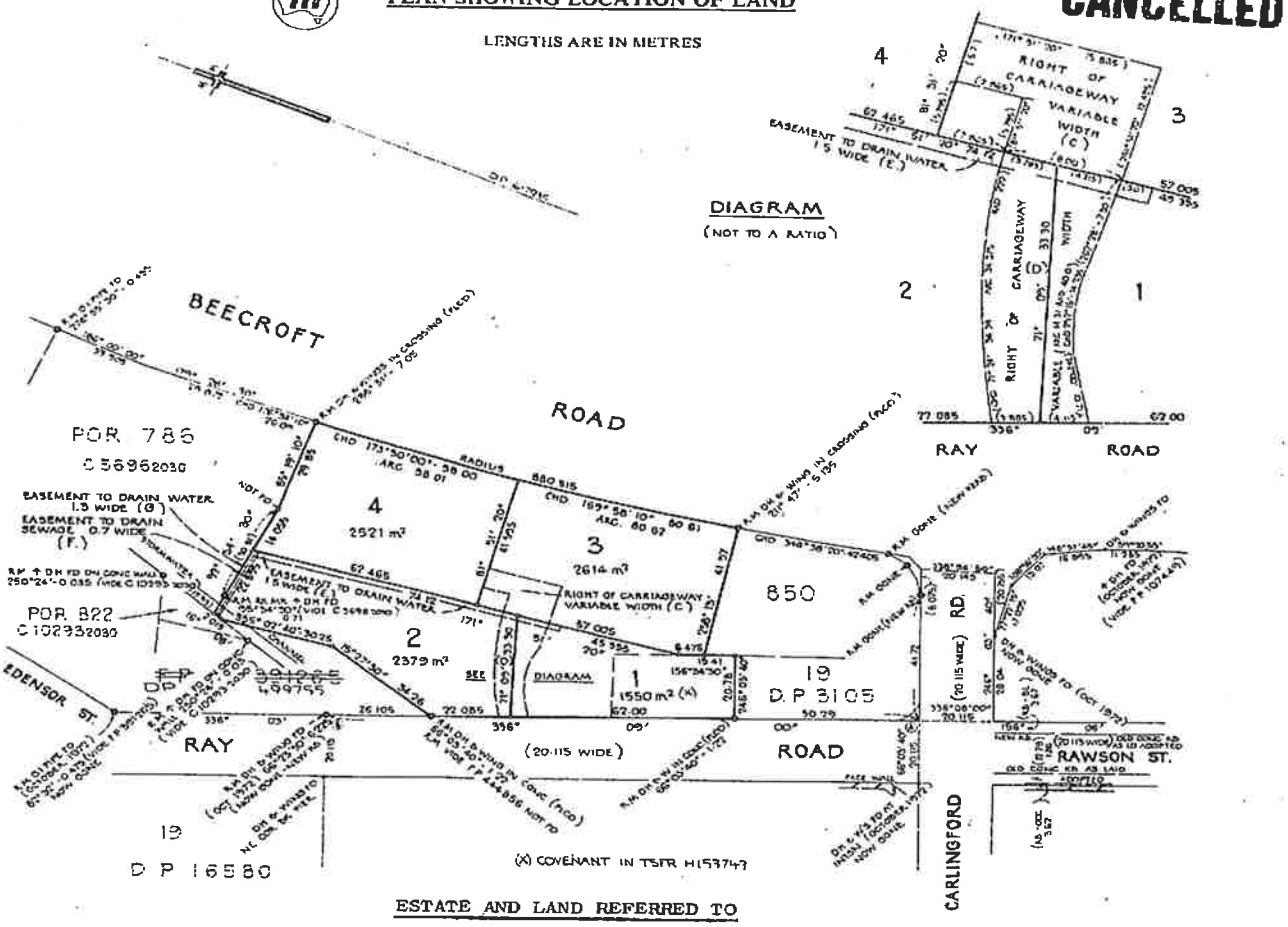
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Registrar General.

CANCELLED

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 4 in Deposited Plan 617935 at Epping in the Shire of Hornsby Parish of Field of Mars and County of Cumberland. EXCEPTING THEREOUT the land below a depth of 20 metres from the surface reserved by Crown Grant Volume 12342 Folio 107 and the minerals reserved by the Crown Grants.

FIRST SCHEDULE

~~CAPITAL & COUNTIES (AUSTRALIA) PTY. LIMITED.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grants above referred to.
2. DP617935 Right of Carriageway appurtenant to the land above described.
3. DP617935 Right of Carriageway appurtenant to the land above described.
4. DP617935 Easement to drain water 1.5 wide appurtenant to the land above described. T979268
5. ~~DP617935 Easement to drain sewage 0.7 wide appurtenant to the land above described.~~ T979270
6. ~~DP617935 Easement to drain water 1.3 wide appurtenant to the land above described.~~ T979269
7. DP617935 Restriction as to user.

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

2.64

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

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE REGISTRAR GENERAL'S OFFICE.

Vol. 14516 Fol. 109

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR | Registrar General

Pemta Pty. Limited by Transfer S885450. Registered 29-1-1982.

SECOND SCHEDULE (continued)

PARTICULARS | Registrar General | CANCELLATION

Desmond

T423929 Lease to Convoy Insurance Management Pty. Limited of premises known as Lot 3.01, Level 3 of building B, 246 Beecroft Road, Epping. Expires 30-11-1987. Registered 28-2-1983

T594464 Lease to Pepsi-Cola Company of Australia Pty. Limited and Arnotts Biscuits Pty. Limited, as joint tenants, of premises known as Suite 4.01 on Level 4, Building B, 246 Beecroft Road, Epping, together with an option of renewal. Expires 29-2-1988. Registered 20-6-1983.

T718536 Lease to Line Analytics Pty. Limited of premises known as Suite 2.05 on level 2 of building B known as 242 Beecroft Road, Epping together with and reserving rights and an option of renewal. Expires 30-6-1985. Registered 15-9-1983.

T813767 Lease to G.E. Crane & Sons Limited of premises being Suite 4.02, Level 4, Building B, known as 242 Beecroft Road, Epping with option of Renewal, Expires 31-7-1989. Registered 3-11-1983.

T946555 Lease to BDH Chemicals Australia Pty. Limited of premises being Suite 2.04 on Level 2 of Building B known as 242 Beecroft Road, Epping with an option of renewal. Expires 30-4-1986. Registered 22-2-1984.

DP/~~SP~~ 700406 Registered 30-3-1984
This folio is cancelled as to whole/~~part~~ upon creation of computer folios for lots 21 – 22 in the abovementioned plan.

Registrar General.

NOTATIONS AND UNREGISTERED DEALINGS

T423929 lapsed 28-2-1988 S
T594464 (mort) lapsed 20-6-1988 S
T718536 (caveat) withdrawn S
T813767 withdrawn S
DP700406
T946555 (caveat) withdrawn 8 May 1984 S
— 9 May 1984 S
— 10 May 1984 S
— 11 May 1984 S

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

Req:R727775 /Doc:CT 14516-109 CT /Rev:22-Dec-2010 /Sts:OK.SC /Pgs:ALL /Prt:29-Aug-2017 15:07 /Seq:2 of 2 /Ref:Epping

InfoTrack
An Approved LPI NSW
Information Broker

Historical Title

Information Provided Through
John McLaren & Co (NSW)
Ph. 02 9231 4872 Fax. 02 9233 6557

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
29/8/2017 2:29PM

FOLIO: 21/700406

First Title(s): OLD SYSTEM VOL 2790 FOL 5
VOL 2685 FOL 66 VOL 12342 FOL 107
Prior Title(s): VOL 14516 FOLS 106-108

Recorded	Number	Type of Instrument	C.T. Issue
30/3/1984	DP700406	DEPOSITED PLAN	FOLIO CREATED EDITION 1
28/6/1984	V215389	LEASE	EDITION 2
6/11/1984	V434404	LEASE	EDITION 3
22/1/1985	V552757	LEASE	EDITION 4
9/5/1985	V696015	LEASE	EDITION 5
4/9/1985	V870527	LEASE	EDITION 6
12/9/1985	V941830	SUB-LEASE	EDITION 7
28/8/1986	W437192	LEASE	EDITION 8
29/4/1987	W858352	LEASE	EDITION 9
27/8/1987	X59242	SURRENDER OF LEASE	EDITION 10
22/1/1988	X289939	LEASE	EDITION 11
12/1/1989	X718917	TRANSFER	EDITION 12
15/2/1989	Y24212	SURRENDER OF LEASE	
15/2/1989	Y132302	LEASE	
15/2/1989	Y24213	LEASE	EDITION 13
18/5/1989	Y361318	LEASE	EDITION 14
7/9/1989	Y572620	LEASE	EDITION 15
6/11/1989	Y671727	SURRENDER OF LEASE	
6/11/1989	Y671728	LEASE	EDITION 16
25/3/1991	Z494381	APPLICATION	
25/3/1991	Z494382	TRANSFER	EDITION 17

END OF PAGE 1 - CONTINUED OVER

SEARCH DATE
29/8/2017 2:29PM

FOLIO: 21/700406

Recorded	Number	Type of Instrument	C.T. Issue
4/6/1991	Z647836	LEASE	
4/6/1991	Z647837	SUB-LEASE	
4/6/1991	DP644433	DEPOSITED PLAN	EDITION 18
14/10/1991	Z984263	LEASE	EDITION 19
15/4/1992	E393693	TRANSFER OF LEASE	
25/10/1993	I742434	SURRENDER OF LEASE	EDITION 20
2/5/1994	U225384	SURRENDER OF LEASE	
2/5/1994	U225385	LEASE	EDITION 21
1/6/1995	O277278	LEASE	EDITION 22
23/8/1995	O480543	SURRENDER OF LEASE	
23/8/1995	O480544	LEASE	EDITION 23
29/3/1996	2052332	SURRENDER OF LEASE	
29/3/1996	2052333	LEASE	EDITION 24
10/10/1996	2524478	LEASE	EDITION 25
29/11/1996	2653957	LEASE	EDITION 26
8/5/1997	3038080	TRANSFER OF LEASE	
8/5/1997	3038081	LEASE	
8/5/1997	3038084	TRANSFER	EDITION 27
9/5/1997	3038085	MORTGAGE	EDITION 28
3/7/2000	6913520	DISCHARGE OF MORTGAGE	
3/7/2000	6913525	LEASE	
3/7/2000	6913526	LEASE	
3/7/2000	6913527	LEASE	
3/7/2000	6913528	TRANSFER	
3/7/2000	6913529	MORTGAGE	EDITION 29
6/7/2001	7512632	REJECTED - LEASE	
31/7/2001	7786376	LEASE	EDITION 30
4/10/2001	7826819	REJECTED - TRANSFER OF LEASE	

END OF PAGE 2 - CONTINUED OVER

SEARCH DATE
29/8/2017 2:29PM

FOLIO: 21/700406 PAGE 3

Recorded	Number	Type of Instrument	C.T. Issue
9/5/2002	8581287	DEPARTMENTAL DEALING TO UPLIFT CT	EDITION 31
20/5/2002	8273477	REJECTED - LEASE	
23/7/2002	8412393	REJECTED - LEASE	
23/7/2002	8454761	REJECTED - TRANSFER OF LEASE	
23/7/2002	8701919	DISCHARGE OF MORTGAGE	
23/7/2002	8701920	MORTGAGE	EDITION 32
18/2/2003	9384336	LEASE	EDITION 33
30/7/2003	9832475	LEASE	EDITION 34
15/8/2003	9883707	LEASE	EDITION 35
12/9/2003	9958244	LEASE	
3/10/2003	AA33305	LEASE	
21/11/2003	AA175293	LEASE	EDITION 36
27/11/2003	AA199652	DEPARTMENTAL DEALING	
12/1/2004	AA315636	LEASE	
25/6/2004	AA745951	LEASE	
19/7/2004	AA804558	LEASE	
27/7/2004	AA829665	MORTGAGE	
24/8/2004	AA899856	LEASE	
15/6/2005	AB547692	MORTGAGE	
17/8/2005	AB698108	SURRENDER OF LEASE	
17/8/2005	AB698109	LEASE	
19/10/2005	AB846169	LEASE	
22/8/2006	AC539276	LEASE	

END OF PAGE 3 - CONTINUED OVER

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
29/8/2017 2:29PM

FOLIO: 21/700406 PAGE 4

Recorded	Number	Type of Instrument	C.T. Issue
16/5/2007	AD122918	LEASE	
19/6/2007	AD198312	DEPARTMENTAL DEALING	EDITION 37
4/7/2007	AD247739	MORTGAGE	EDITION 38
14/12/2007	AD559751	SURRENDER OF LEASE	EDITION 39
17/4/2008	AD896223	DISCHARGE OF MORTGAGE	
17/4/2008	AD896224	DISCHARGE OF MORTGAGE	
17/4/2008	AD896225	DISCHARGE OF MORTGAGE	
17/4/2008	AD896226	DISCHARGE OF MORTGAGE	
17/4/2008	AD896227	MORTGAGE	EDITION 40
7/8/2008	AE107481	LEASE	EDITION 41
20/11/2008	AE271436	LEASE	EDITION 42
14/9/2009	AE973619	LEASE	EDITION 43
30/9/2009	AE980279	LEASE	EDITION 44
26/10/2010	AF626386	LEASE	
26/10/2010	AF751524	VARIATION OF MORTGAGE	EDITION 45
31/8/2011	AG467120	LEASE	EDITION 46
25/6/2012	AH59487	DISCHARGE OF MORTGAGE	
25/6/2012	AH59488	TRANSFER	EDITION 47
6/9/2012	AH221642	DEPARTMENTAL DEALING	
1/2/2013	DP1180959	DEPOSITED PLAN	
7/5/2013	AH714590	DEPARTMENTAL DEALING	
8/8/2013	AH936024	DEPARTMENTAL DEALING	
8/8/2013	AH936070	DEPARTMENTAL DEALING	
5/5/2015	AJ455989	DEPARTMENTAL DEALING	
30/6/2015	AI902548	REQUEST	FOLIO CANCELLED
30/6/2015	AJ612795	DEPARTMENTAL DEALING	

END OF PAGE 4 - CONTINUED OVER

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
29/8/2017 2:29PM

FOLIO: 21/700406 PAGE 5

Recorded	Number	Type of Instrument	C.T. Issue

*** END OF SEARCH ***

Epping PRINTED ON 29/8/2017

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Historical Title

Information Provided Through
John McLaren & Co (NSW)
Ph. 02 9231 4872 Fax. 02 9233 6557

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
29/8/2017 2:29PM

FOLIO: 22/700406

First Title(s): OLD SYSTEM VOL 2790 FOL 4
VOL 2790 FOL 5 VOL 12342 FOL 107
Prior Title(s): VOL 14516 FOL 107 VOL 14516 FOL 109

Recorded	Number	Type of Instrument	C.T. Issue
30/3/1984	DP700406	DEPOSITED PLAN	FOLIO CREATED EDITION 1
8/5/1984	V113405	LEASE	EDITION 2
17/5/1984	V138002	LEASE	EDITION 3
3/8/1984	V282133	DEPARTMENTAL DEALING	
5/12/1984	V482164	LEASE	EDITION 4
30/5/1985	V740871	SURRENDER OF LEASE	
30/5/1985	V740872	REQUEST	
30/5/1985	V740873	LEASE	EDITION 5
27/11/1985	W77394	LEASE	
27/11/1985	W77395	LEASE	EDITION 6
13/5/1986	W328214	LEASE	EDITION 7
23/9/1986	W470968	LEASE	
23/9/1986	W470969	LEASE	EDITION 8
26/10/1987	X157662	SURRENDER OF LEASE	EDITION 9
3/12/1987	X157551	LEASE	EDITION 10
26/4/1988	X512203	LEASE	EDITION 11
12/1/1989	X718917	TRANSFER	EDITION 12
15/2/1989	Y7642	SUB-LEASE	EDITION 13
31/5/1989	Y390159	SURRENDER OF LEASE	
31/5/1989	Y390160	LEASE	EDITION 14
18/8/1989	Y532778	LEASE	
18/8/1989	Y532779	LEASE	EDITION 15

END OF PAGE 1 - CONTINUED OVER

SEARCH DATE
29/8/2017 2:29PM

FOLIO: 22/700406 PAGE 2

Recorded	Number	Type of Instrument	C.T. Issue
29/8/1989		AMENDMENT: CT DELIVEREE	
7/9/1989	Y557571	LEASE	EDITION 16
1/3/1990	Y854053	SURRENDER OF LEASE	
1/3/1990	Y854054	LEASE	EDITION 17
29/8/1990	Z178221	LEASE	EDITION 18
25/3/1991	Z443499	LEASE	
25/3/1991	Z494381	APPLICATION	
25/3/1991	Z494382	TRANSFER	EDITION 19
4/6/1991	DP644433	DEPOSITED PLAN	EDITION 20
18/9/1991	Z661431	LEASE	
18/9/1991	Z836568	LEASE	EDITION 21
21/10/1991	E2739	LEASE	EDITION 22
31/1/1992	E226991	LEASE	EDITION 23
23/9/1992	E778229	LEASE	EDITION 24
3/3/1993	I157923	LEASE	EDITION 25
29/3/1993	I218292	TRANSFER OF LEASE	
29/3/1993	I218293	VARIATION OF LEASE	
29/3/1993	I218294	TRANSFER OF LEASE	
29/3/1993	I218295	VARIATION OF LEASE	
29/3/1993	I218296	TRANSFER OF LEASE	
16/3/1994	U105644	SURRENDER OF LEASE	
16/3/1994	U105645	SURRENDER OF LEASE	
16/3/1994	U105646	LEASE	EDITION 26
2/5/1995	O196734	LEASE	EDITION 27
17/5/1995	O238262	LEASE	EDITION 28
5/9/1995	O510690	TRANSFER OF LEASE	
29/3/1996	2052331	LEASE	EDITION 29

END OF PAGE 2 - CONTINUED OVER

SEARCH DATE
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FOLIO: 22/700406 PAGE 3

Recorded	Number	Type of Instrument	C.T. Issue
4/7/1996	2279184	LEASE	
4/7/1996	2279185	LEASE	EDITION 30
3/10/1996	2510294	LEASE	EDITION 31
8/5/1997	3038082	LEASE	
8/5/1997	3038083	LEASE	
8/5/1997	3038084	TRANSFER	EDITION 32
9/5/1997	3038085	MORTGAGE	EDITION 33
22/10/1999	6287758	LEASE	EDITION 34
3/7/2000	6913520	DISCHARGE OF MORTGAGE	
3/7/2000	6913522	SURRENDER OF LEASE	
3/7/2000	6913523	LEASE	
3/7/2000	6913524	LEASE	
3/7/2000	6913528	TRANSFER	
3/7/2000	6913529	MORTGAGE	EDITION 35
2/11/2000	7196112	SURRENDER OF LEASE	
2/11/2000	7196113	LEASE	
2/11/2000	7196114	LEASE	EDITION 36
15/11/2001	8032922	SUB-LEASE	
23/7/2002	8701919	DISCHARGE OF MORTGAGE	
23/7/2002	8701920	MORTGAGE	EDITION 37
10/3/2003	9437580	LEASE	
10/3/2003	9437581	LEASE	EDITION 38
22/5/2003	9630417	SURRENDER OF LEASE	EDITION 39
27/5/2003	9644592	LEASE	EDITION 40
30/7/2003	9832475	LEASE	EDITION 41
15/8/2003	9883707	LEASE	EDITION 42
12/9/2003	9958244	LEASE	
21/11/2003	AA175293	LEASE	EDITION 43

END OF PAGE 3 - CONTINUED OVER

SEARCH DATE
29/8/2017 2:29PM

FOLIO: 22/700406

Recorded	Number	Type of Instrument	C.T. Issue
27/11/2003	AA199652	DEPARTMENTAL DEALING	
12/1/2004	AA315636	LEASE	
18/3/2004	AA500846	LEASE	
18/3/2004	AA500847	LEASE	
25/6/2004	AA745951	LEASE	
13/7/2004	AA623049	SURRENDER OF LEASE	
13/7/2004	AA623050	LEASE	
19/7/2004	AA804558	LEASE	
27/7/2004	AA829665	MORTGAGE	
7/10/2004	AB680	LEASE	
24/2/2005	AB307958	LEASE	
15/6/2005	AB547692	MORTGAGE	
17/8/2005	AB698108	SURRENDER OF LEASE	
17/8/2005	AB698109	LEASE	
19/10/2005	AB846169	LEASE	
4/4/2006	AC218031	SURRENDER OF LEASE	
4/4/2006	AC218032	LEASE	
10/7/2006	AC441805	LEASE	
10/7/2006	AC441807	LEASE	
22/8/2006	AC539261	LEASE	
16/5/2007	AD122917	SURRENDER OF LEASE	
16/5/2007	AD122918	LEASE	
19/6/2007	AD198312	DEPARTMENTAL DEALING	EDITION 44
4/7/2007	AD247739	MORTGAGE	EDITION 45
14/12/2007	AD559751	SURRENDER OF LEASE	EDITION 46

END OF PAGE 4 - CONTINUED OVER

SEARCH DATE
29/8/2017 2:29PM

FOLIO: 22/700406 PAGE 5

Recorded	Number	Type of Instrument	C.T. Issue
17/4/2008	AD896223	DISCHARGE OF MORTGAGE	
17/4/2008	AD896224	DISCHARGE OF MORTGAGE	
17/4/2008	AD896225	DISCHARGE OF MORTGAGE	
17/4/2008	AD896226	DISCHARGE OF MORTGAGE	
17/4/2008	AD896227	MORTGAGE	EDITION 47
7/8/2008	AE107481	LEASE	
20/11/2008	AE271436	LEASE	
2/12/2008	AE90109	REJECTED - VARIATION OF LEASE	
2/12/2008	AE359705	DEPARTMENTAL DEALING	EDITION 48
3/7/2009	AE812192	VARIATION OF LEASE	
14/9/2009	AE973619	LEASE	EDITION 49
30/9/2009	AE980279	LEASE	EDITION 50
29/3/2010	AF395722	LEASE	EDITION 51
26/10/2010	AF626385	SURRENDER OF LEASE	
26/10/2010	AF626386	LEASE	
26/10/2010	AF751524	VARIATION OF MORTGAGE	EDITION 52
16/3/2011	AF904121	WITHDRAWN - APPLICATION TO RECORD A NEW REGISTERED PROPRIETOR	
~~10/6/2011~~	~~AG121129~~	~~APPLICATION TO RECORD A NEW REGISTERED PROPRIETOR~~ OVER LEASE AF395722	
31/8/2011	AG467120	LEASE	EDITION 53
25/6/2012	AH59487	DISCHARGE OF MORTGAGE	
25/6/2012	AH59488	TRANSFER	EDITION 54
1/2/2013	DP1180959	DEPOSITED PLAN	
7/5/2013	AH714590	DEPARTMENTAL DEALING	
8/8/2013	AH936024	DEPARTMENTAL DEALING	
8/8/2013	AH936070	DEPARTMENTAL DEALING	

END OF PAGE 5 - CONTINUED OVER

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
29/8/2017 2:29PM

FOLIO: 22/700406 PAGE 6

Recorded	Number	Type of Instrument	C.T. Issue
5/5/2015	AJ455989	DEPARTMENTAL DEALING	
30/6/2015	AI902548	REQUEST	FOLIO CANCELLED
30/6/2015	AJ612795	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

Epping PRINTED ON 29/8/2017

InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

Req:R316696 /Doc:DL X718917 /Rev:08-Sep-2010 /Sts:OK.OK /Pgs:ALL /Prt:06-Sep-2017 12:18 /Seq:1 of 3
Ref:Epping /Src:M

RP 13 STAMP DUTY [redacted]

X718917

TRANSFER

REAL PROPERTY ACT, 1900

TC B 1 of 1 X

$ 49

Torrens Title Reference	If Part Only, Delete Whole and Give Details	Location
21/700406 22/700406	~~WHOLE~~ An undivided thirty five percent interest in the Land as tenants in common.	Epping

DESCRIPTION OF LAND Note (a)

TRANSFEROR Note (b)

PEMTA PTY LIMITED of Level 6, Aetna Tower, Aetna Centre, 495 Victoria Avenue, CHATSWOOD, 2067.

13/20 TL

ESTATE Note (c)

(the abovenamed TRANSFEROR) hereby acknowledges receipt of the consideration of $Eight million two hundred and forty two thousand five hundred dollars. and transfers an estate in fee simple in the land above described to the TRANSFEREE

TRANSFEREE Note (d)

BURNS PHILP TRUSTEE COMPANY LIMITED of 51 Pitt Street, Sydney 2000.

7/20

OFFICE USE ONLY

OVER

TENANCY Note (e)

~~as joint tenants/tenants in common~~

PRIOR ENCUMBRANCES Note (f)

subject to the following PRIOR ENCUMBRANCES 1. SEE ANNEXURE D 2. 3.

DATE 30th JUNE, 1983

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

THE COMMON SEAL of PEMTA PTY LIMITED was hereunto affixed in accordance with its Articles of Association in the presence of :

Signature of Witness / Name of Witness (BLOCK LETTERS) / Address and occupation of Witness

PEMTA PTY. LIMITED Common Seal

Signature of Transferor

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

Note (g)

THE COMMON SEAL of BURNS PHILP TRUSTEE COMPANY LIMITED was hereunto affixed in accordance with its Articles of Association in the presence of :

Signature of Witness / Name of Witness (BLOCK LETTERS) / Address and occupation of Witness

BURNS PHILP TRUSTEE COMPANY LIMITED Common Seal OF

DIRECTOR

SECRETARY

Signature of Transferee

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

LODGED BY ALLEN ALLEN & [illegible]
Solicitors & Notaries
19-29 Martin Place, Sydney
Telephone: 229 8765
LTO 748
Fax: 233 7022
Delivery Box Number

LOCATION OF DOCUMENTS

CT	OTHER	
		Herewith.
1	22/700406	In L.T.O. with X711843
		Produced by 482R

OFFICE USE ONLY

Checked	Passed
[illegible]	
Signed	Extra Fee

REGISTERED - -19

Secondary Directions

Delivery Directions OVER

$49

MSW $=***1.00 STAMP-DUTY 13/07/88 10063 Y HR 3

RP 13
1985

INSTRUCTIONS FOR COMPLETION

This dealing should be marked by the Commissioner of Stamp Duties before lodgment by hand at the Land Titles Office.

Typewriting and handwriting should be clear, legible and in permanent dense black or dark blue non-copying ink.

Alterations are not to be made be erasure; the words rejected are to be ruled through and initialled by the parties to the dealing in the left-hand margin.

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 whereabout 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

FIRST SCHEDULE DIRECTIONS

(A) FOLIO IDENTIFIER	(B) DIRECTION	(C) NAME
21/22/700406	RDP	PEMTA PTY. LIMITED in 13/20 share and BURNS PHILP TRUSTEE COMPANY LIMITED in 7/20 shares as Tenants in Common.

SECOND SCHEDULE AND OTHER DIRECTIONS

(D) FOLIO IDENTIFIER	(E) DIRECTION	(F) NOTFN TYPE	(G) DEALING NUMBER	(H) DETAILS
21/22/700406	2U		X 711843	

G&M Law Stationers 1985

Req:R316696 /Doc:DL X718917 /Rev:08-Sep-2010 /Sts:OK.OK /Pgs:ALL /Prt:06-Sep-2017 12:18 /Seq:3 of 3
Ref:Epping /Src:M

1978

See relevant instructions for completion on back of dealing form.

8

(a) Transfer of mortgage or as appropriate.

ANNEXURE TO (a) TRANSFER OF LAND dated 30th June, 1988

(b) Names of parties.

from (b) PEMTA PTY. LIMITED

to BURNS PHILP TRUSTEE COMPANY LIMITED

being a continuation of the registered dealing panel referred to on front of form R.P. 13

Type of dealing	Registered number	Name of mortgagor, grantor or lessor	AFFECTED TORRENS TITLE REFERENCES		
			Volume	Folio	Folio identifier
Lease	T813767	Pemta Pty. Limited			22/700406
Lease	V482164	Pemta Pty. Limited			22/700406
Lease	V740873	Pemta Pty. Limited			22/700406
Lease	W77394	Pemta Pty. Limited			22/700406
Lease	W77395	Pemta Pty. Limited			22/700406
Lease	W328214	Pemta Pty. Limited			22/700406
Lease	W470969	Pemta Pty. Limited			22/700406
Lease	X157551	Pemta Pty. Limited			22/700406
Lease	X512203	Pemta Pty. Limited			22/700406
~~Lease~~	~~X711843~~	~~Pemta Pty. Limited~~			~~22/700406~~
Lease	T800468	Pemta Pty. Limited			21/700406
Lease	V215389	Pemta Pty. Limited			21/700406
Lease	V434404	Pemta Pty. Limited			21/700406
Lease	V552757	Pemta Pty. Limited			21/700406
Lease	V696015	Pemta Pty. Limited			21/700406
Lease	W437192	Pemta Pty. Limited			21/700406
Lease	W858352	Pemta Pty. Limited			21/700406
Lease	X289939	Pemta Pty. Limited			21/700406

SURPLUSAGE Registrar

(c) Transferor, mortgagor or as appropriate.

(c) ~~Signed in my presence by the who is personally known to me~~ _____

THE COMMON SEAL of PEMTA PTY. LIMITED was hereunto affixed in accordance with its Articles of Association in the presence of:)

_____ Secretary ~~Signature of Witness~~

PEMTA PTY. LIMITED Common Seal

_____ Director

(d) Transferee, mortgagee or as appropriate.

(d) ~~Signed in my presence by the who is personally known to me~~ _____

THE COMMON SEAL of BURNS PHILP TRUSTEE COMPANY LIMITED was hereunto affixed in accordance with its Articles of Association in the presence of:)

_____ Secretary ~~Signature of Witness~~

BURNS PHILP TRUSTEE COMPANY LIMITED Common Seal OF

_____ Director

Req:R317524 /Doc:DL Z494381 /Rev:15-Jul-2010 /Sts:OK.SC /Pgs:ALL /Prt:06-Sep-2017 13:21 /Seq:1 of 4
Ref:Epping /Src:M

RP01

Z 494381 W

RELODGED 10.00 20 MAR 1991

B

APPLICATION

REAL PROPERTY ACT, 1900

(See Instructions for Completion on back of form)

AP

CA 1 of 2 — $ 47

R2/4

DESCRIPTION OF LAND Note (a)

Torrens Title reference	If Part Only, Delete Whole and Give Details	Location
	WHOLE	
F.I. 21/700406	7/20 share as Tenant in Common	Epping
F.I. 22/700406	7/20 share as Tenant in Common	Epping
F.I. 1/774973 1/3	~~1/3~~ share as Tenant in Common	Chatswood
F.I. 30/785238	Whole	Hurstville

REGISTERED DEALING Note (b)

Type of Dealing	Registered Number	Torrens Title Reference

PRESENT REGISTERED PROPRIETOR Note (c)

BURNS PHILP TRUSTEE COMPANY LIMITED

Note (d) is presently recorded as REGISTERED PROPRIETOR of the land above described ~~abovementioned registered dealing~~ Application is hereby made to record

NEW REGISTERED PROPRIETOR(S) Note (e)

PERMANENT TRUSTEE COMPANY LIMITED (A.C.N. 000 000 993) a company incorporated in New South Wales and having its registered office at 23-25 O'Connell Street, Sydney

OFFICE USE ONLY: HIST

Note (d) as REGISTERED PROPRIETOR of the land above described ~~abovementioned registered dealing~~

Note (f)

Pursuant to the Orders of the Supreme Court of New South Wales Equity Division in Suit No. 5067 of 1990 on 19th October 1990 as per sealed stamped Orders registered dealing number Z366585.

D

946

PERMANENT TRUSTEE COMPANY LIMITED (A.C.N. 000 000 993) by its Attorneys who state that they have no notice of revocation of the Power of Attorney dated 20th June, 1979, under which this document is signed. 679 - BOOK 3375

Group A Attorney	Group B Attorney
Signature: D. Travers	B. Goodacre
Name: D. TRAVERS	B. GOODACRE
Title: MANAGER	ASS. MANAGER

DATE 17th JANUARY 1991

EXECUTION Note (g)

I hereby certify this dealing to be correct for the purposes of the Real Property Act, 1900.
Signed in my presence by the applicant who is personally known to me

Signature of Witness

MIREYA SYLVESTRE
Name of Witness (BLOCK LETTERS)

23/25 O'CONNELL ST. CLERK
SYDNEY N.S.W. 2000
Address and occupation of Witness

Signature of Applicant

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

LODGED BY E.H. CALNAN SOLICITOR
PERMANENT TRUSTEE COMPANY LTD
23-25 O'CONNELL STREET SYDNEY
TEL 225 8219 ALLEN ALLEN & HEMSLEY MLC CENTRE
Delivery Box Number ~~942 S~~ 745

LOCATION OF DOCUMENTS

CT	OTHER	
2	Cert of Title	Herewith
/	21/700406	In L.T.O. with 2443499
-	21/700406	Produced by 229 P

OFFICE USE ONLY

Checked	Passed	REGISTERED - -19	Secondary Directions	
EC				
Signed	Extra Fee	25 MAR 1991	Delivery Directions	
736				

Req:R317524 /Doc:DL Z494381 /Rev:15-Jul-2010 /Sts:OK.SC /Pgs:ALL /Prt:06-Sep-2017 13:21 /Seq:2 of 4
Ref:Epping /Src:M

FILM WITH Z494381

STATUTORY DECLARATION

I, ELIZABETH HELEN CALNAN of 1 Hovea Place, Grays Point in the State of New South Wales, Solicitor do hereby solemnly and sincerely declare that:

1. I am a Solicitor employed by Permanent Trustee Company Limited in its Corporate Trusts Division at its registered office at 23-25 O'Connell Street, Sydney and I am authorised to make this Declaration.

2. The Certificate/s of Title detailed below which is/are registered in the name of Burns Philp Trustee Company Limited is/are held by Permanent Trustee Company Limited as Trustee for the **Capcount Property Trust** pursuant to Order of Court Suit No. 5067 of 1990 in the Supreme Court of New South Wales Equity Division on 19th October 1990.

Titles

F.I. 21/700406	7/20 share as Tenant in Common
F.I. 22/700406	7/20 share as Tenant in Common
F.I. 1/774973	1/3 share as Tenant in Common
F.I. 30/785238	Whole

AND I MAKE THIS SOLEMN DECLARATION conscientiously believing the same to be true and by virtue of the provisions of the Oaths Act, 1900.

DECLARED at Sydney)
)
the 16th day of)
)
JANUARY 1991)
)
Before me:) E H Calnan .....

A. Kastaneas JP
Justice of the Peace

SDC1

CUTLER HUGHES & HARRIS

SOLICITORS

INCORPORATING ROBERT LEAHY & CO

GEOFFREY B F HUGHES
RONALD J BARAGRY
ANDREW C F HARRIS
JAMES R BAILLIE
PATRICK L CAMPBELL
PETER R GRINTER
MICHAEL E LEAHY
HUGH J CHALMERS
DAVID P MEAGHER
PETER J WHALAN
THOMAS D BOYCE
MARK HAMWOOD

Consultants
ROBERT C LEAHY
HELEN M LEE

Senior Associates
DEBORAH K LINWOOD
LACHLAN R PATERSON
CHRISTOPHER DIMOCK
STEPHEN F ROUTH
ROBERT NEELY
JOHN MACNAMARA
AMANDA J PORTER
PETA K MALONEY
FIONA K HANLON
LORRAINE A STRAMAN
HELEN GOLDING

LEVEL 13
THE LANDMARK
345 GEORGE STREET
(CNR BARRACK & GEORGE STS)
SYDNEY NSW AUSTRALIA

TELEPHONE (02) 262 6799
Intl (612) 262 6799

MAILING ADDRESS
BOX 3336 GPO
SYDNEY 2001

FACSIMILE (02) 262 1818

DX 205 SYDNEY

Our Ref: PRG:TAW 892657:ddp
Your Ref: PJC 820713 LAM

5 February 1991

Attn: Louise Macaulay

Messrs Allen Allen & Hemsley
Solicitors
DX 105
SYDNEY

Dear Madam

LOT 22 IN DEPOSITED PLAN 700406 AT EPPING - PEMTA PTY LIMITED AND BURNS PHILP TRUSTEE CO LIMITED

We refer to our telephone conversation 4 February, 1991.

Our client has no objection to the registration upon the above Certificate of Title of RPA Form 81 and a Transfer relating to the transfer of a 7/20 interest in the property from Burns Philp Trustee Co Limited to Trust Company of Australia Limited.

We note that this title was produced at the Land Titles Office at your request on 28 November 1990.

Yours faithfully
CUTLER HUGHES & HARRIS

PETER GRINTER

dtaw.814.doc

Req:R317524 /Doc:DL Z494381 /Rev:15-Jul-2010 /Sts:OK.SC /Pgs:ALL /Prt:06-Sep-2017 13:21 /Seq:4 of 4
Ref:Epping /Src:M

LAM/47

CUTLER HUGHES & HARRIS

SOLICITORS

INCORPORATING ROBERT LEAHY & CO

- MAR 12:2

Partners
GREGORY R F MATHERS
RONALD J BARACRY
ANDREW C P HARRIS
JAMES R BAILLIE
PATRICK L CAMPBELL
PETER R GRINTER
MICHAEL E LEAHY
HUGH J CHALMERS
DAVID P MEAGHER
PETER J WHALAN
THOMAS D BOYCE
MARK HAMWOOD

Consultants
ROBERT C LEAHY
HELEN M LEE
MICHAEL E CASEY

Senior Associates
DEBORAH K LENWOOD
CHRISTOPHER DIMOCK
STEPHEN P ROUTH
ROBERT NEELY
JOHN MACNAMARA
AMANDA J PORTER
RITA K MALONEY
FIONA K HANLON
LORRAINE A STRAMAN
HELEN GOLDING

LEVEL 13
THE LANDMARK
345 GEORGE STREET
(CNR BARRACK & GEORGE STS)
SYDNEY NSW AUSTRALIA

TELEPHONE (02) 262 6799
Intl (612) 262 6799

MAILING ADDRESS
BOX 3336 GPO
SYDNEY 2001

FACSIMILE (02) 262 1818

DX 205 SYDNEY

Our Ref: PRG:TAW 892657:fms
Your Ref: PJC 820713 LAM

19 March 1991

Attn: Ms Louise Macaulay

Messrs Allen Allen & Hemsley
Solicitors
DX 105 SYDNEY

BY FAX: 233 7022

Dear Madam

LOT 21 IN DEPOSITED PLAN 700406 AT EPPING - PEMTA PTY LIMITED AND BURNS PHILP TRUSTEE CO LIMITED

We refer to our telephone conversation today.

Our client has no objection to the registration upon the above Certificate of Title of RPA Form 81 and a Transfer relating to the transfer of a 7/20 interest in the property from Burns Philp Trustee Co Limited to Trust Company of Australia Limited.

We note that this title was produced at the Land Titles Office at your request on 1 February 1991.

Yours faithfully
CUTLER HUGHES & HARRIS

PETER GRINTER

dprg.634.doc

Req:R316697 /Doc:DL Z494382 /Rev:05-Jul-2010 /Sts:OK.SC /Pgs:ALL /Prt:06-Sep-2017 12:18 /Seq:1 of 5
Ref:Epping /Src:M

STAMP DUTY

(1)

Z 494382 U

2 -

RELODGED 10.00 AM
20 TRANSFER
REAL PROPERTY ACT, 1900

T

3	2 of 2	X	R 3/4
$ 47			

	Torrens Title Reference	If Part Only, Delete Whole and Give Details	Location
DESCRIPTION OF LAND Note (a)	See Annexure "A"	WHOLE See Annexure "A"	See Annexure "A"

TRANSFEROR Note (b)

PERMANENT TRUSTEE COMPANY LIMITED (A.C.N. 000 000 993)

ESTATE Note (c)

X (the abovenamed TRANSFEROR) hereby ~~[illegible]~~ pursuant to a Deed of Retirement and Appointment of Trustee dated 19 December 1990 as registered in the General Deed Register No.238 Book 3830

~~[illegible]~~ transfers an estate in fee simple in the land above described to the TRANSFEREE

TRANSFEREE Note (d)

TRUST COMPANY OF AUSTRALIA ~~PTY~~ LIMITED of
80-84 New South Head Road
Edgecliff 2027

(A.C.N. 004 027 749)

OFFICE USE ONLY

TENANCY Note (e)

as joint tenants/tenants in common

PRIOR ENCUMBRANCES Note (f)

subject to the following PRIOR ENCUMBRANCES 1. See Annexure "B"

2. ..... 3. .....

DATE 17 January 1991

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

947

PERMANENT TRUSTEE COMPANY LIMITED (A.C.N. 000 000 993) by its Attorneys who state that they have no notice of revocation of the Power of Attorney dated 20th June, 1979, under which this document is signed. 679 - Book 3375

Group A Attorney	Group B Attorney
Signature	B. Goodacre
Director	
DAVID ANTHONY TRAVERS	GEOFFREY JANE GOODACRE
MANAGER	ASS. MANAGER
~~General Manager~~	

EXECUTION Note (g)

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

~~THE COMMON SEAL of PERMANENT TRUSTEE COMPANY LIMITED was hereunto affixed by authority of the Board of Directors in the presence of:~~

Signature of Witness

~~XXXXXXXXXXXXXXXXXX~~ WITNESS

MIREYA SYLVESTRE
23/25 O'CONNELL ST. CLERK
SYDNEY N.S.W. 2000

~~XXXXXXXXXXXXXXXXXX~~

Note (g)

THE ~~OFFICIAL~~ COMMON SEAL of TRUST COMPANY OF AUSTRALIA ~~PTY~~ LIMITED was hereunto affixed by authority of the ~~Board of~~ Directors in the presence of:

~~XXXXXXXXXXXXXXXXXX~~

Address and occupation of Witness

~~XXXXXXXXXXXXXXXXXX~~

W.P.N. ...
Director

Manager

~~XXXXXXXXXXXXXXXXXX~~ N 11/91

TRUST COMPANY OF AUSTRALIA LIMITED A.C.N. 004 027 749 THE COMMON SEAL OF

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

LODGED BY ALLEN ALLEN & HEMSLEY
MLC Centre
19-29 Martin Place
SYDNEY NSW 2000

Ref FJC 820713 MJMC
Delivery Box Number 745

LOCATION OF DOCUMENTS		
CT	OTHER	
		Herewith.
		In L.T.O. with
		Produced by

OFFICE USE ONLY

Checked	Passed	REGISTERED - -19	Secondary Directions			
ECB						
Signed	Extra Fee	25 MAR 1991	Delivery Directions			

RP 13

INSTRUCTIONS FOR COMPLETION

This dealing should be marked by the Stamp Duties Division, Department of Finance before lodgment by hand at the Land Titles Office.

Typewriting and handwriting should be clear, legible and in permanent dense black or dark blue 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 in the left hand margin.

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). Title references should be listed in numerical sequence.

(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., as 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 by insufficient space for 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 his/her 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/her attorney (or receiver or delegate, as the case may be) XY pursuant to power of attorney registered Book No. , and I declare that I have no notice of the revocation of the said power of attorney".

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

FIRST SCHEDULE DIRECTIONS

(A) FOLIO IDENTIFIER	(B) DIRECTION	(C) NAME
21/700406 22/700406	PR-P	PEMTA PTY. LIMITED IN 13/20 SHARES AND TRUST COMPANY OF AUSTRALIA LIMITED IN 7/20 SHARES AS TENANTS IN COMMON
1/774973	PROP	SABCAP PTY. LIMITED IN 2/3 SHARE AND TRUST COMPANY OF AUSTRALIA LIMITED IN 1/3 SHARE AS TENANTS IN COMMON
30/785238	S	TRUST COMPANY OF AUSTRALIA LIMITED

SECOND SCHEDULE AND OTHER DIRECTIONS

(D) FOLIO IDENTIFIER	(E) DIRECTION	(F) NOTFN TYPE	(G) DEALING NUMBER	(H) DETAILS
21/700406 22/700406	CT	2U	DP 644433	
30/785238	CT	74S		

H.C. MARTYN & SONS (AUST.) PTY. LTD.
TELEPHONE: 699 2499

1989

Req:R316697 /Doc:DL 2494382 /Rev:05-Jul-2010 /Sts:OK.SC /Pgs:ALL /Prt:06-Sep-2017 12:18 /Seq:2 of 5
Ref:Epping /Src:M

Req:R316697 /Doc:DL Z494382 /Rev:05-Jul-2010 /Sts:OK.SC /Pgs:ALL /Prt:06-Sep-2017 12:18 /Seq:3 of 5
Ref:Epping /Src:M

F [redacted] H Z494382

**THIS PAGE IS THE ANNEXURE "A"
REFERRED TO IN THE TRANSFER BETWEEN PERMANENT TRUSTEE COMPANY LIMITED (AS TRANSFEROR) AND TRUST COMPANY OF AUSTRALIA PTY LIMITED (AS TRANSFEREE) DATED THIS DAY OF 1991**

TORRENS TITLE REFERENCES	WHOLE or PART	LOCATIONS
Folio Identifier 1/774973	1/3 share as tenant in common	At Chatswood
Folio Identifier 21/700406	7/20 shares as tenant in common	At Epping
Folio Identifier 22/700406	7/20 shares as tenant in common	At Epping
Folio Identifier 30/785238	Whole	At Hurstville

lam302692:10.01.91

B. Goddard

B

THIS AND THE FOLLOWING PAGE FORM THE ANNEXURE "B" REFERRED TO IN THE TRANSFER BETWEEN PERMANENT TRUSTEE COMPANY LIMITED (AS TRANSFEROR) AND TRUST COMPANY OF AUSTRALIA PTY LIMITED (AS TRANSFEREE) DATED THIS DAY OF 1991

TORRENS TITLE REFERENCES	PRIOR EMCUMBRANCES
Folio Identifier 1/774973	X723262 X951951 Y29215 Y61635 Y157469 Y157470 Y742809 X723263 Y711886 X723264 Z42198 X723266 X723265 X821656 Y511817 Y160885 Y511816 Z93876 Y207343 Y754472 Z178224) Z253037) Unregistered Z386934) dealings
Folio Identifier 22/700406	(W77394) EASEMENT EXPIRED W77395 X157551 X512203 Y390160 Y532779 Y557571 Y854054 Z178221 Z443499) Unregistered dealing
Folio Identifier 21/700406	T800468 V434404 V941830 V552757 V696015 W437192 Y132302 Y24213 Y361318 Y572620 Y671728

B. Waddacre

B

TORRENS TITLE REFERENCES

PRIOR EMCUMBRANCES

Folio Identifier 30/785238

W577793
W577794
X246336
X256102
X293631
X293632
X555978
X811027
X877233
X934699
Y378771
Y378772
Y423019
Y428220
Y577619
Y577620
Y638735
Y703661

B. Woodacre

Craven

Req:R316698 /Doc:DL 3038084 /Rev:19-May-1997 /Sts:NO.OK /Pgs:ALL /Prt:06-Sep-2017 12:18 /Seq:1 of 2
Ref:Epping /Src:M

Form: 97-01T
Licence: 61C/0678/97

TRANSFER
New South Wales
Real Property Act 1900

3038084 B

Office of State Revenue use only

N.S.W. STAMP DUTY
300497 2623 04 20126315Z/01 $Z.00

(A) **LAND TRANSFERRED**
If appropriate, specify the share or part transferred.

21/700406, 22/700406 and 786/752028

(B) **LODGED BY**

LTO Box	Name, Address or DX and Telephone
~~61FC~~ 2382	~~Abbott Tout Solicitors Level 42, MLC Centre, 19-29 Martin Place, Sydney NSW 2000 DX 129 SYDNEY Tel: (02) 9335 2000~~ BLAKE DAWSON WALDRON DX 10 SYDNEY Tel: (02) 258 6000 Reference (15 character maximum): ~~DRB:MJG:80887~~ DLL 84

(C) **TRANSFEROR**
PEMTA PTY LIMITED ACN 002 093 861 and
TRUST COMPANY OF AUSTRALIA LIMITED ACN 004 027 749

(D) acknowledges receipt of the consideration of $25,000,000.00
and as regards the land specified above transfers to the transferee an estate in fee simple.

(E) Encumbrances (if applicable) 1. **SEE ANNEXURE A ATTACHED** 2. 3.

(F) **TRANSFEREE**

T	**IOOF AUSTRALIA TRUSTEES (NSW) LIMITED** ACN 000 329 706
TS (s713 LGA)	
TW (Sheriff)	
(G)	**TENANCY:**

(H) We certify this dealing correct for the purposes of the Real Property Act 1900 **DATE** 30 April 1997
Signed in my presence by the transferor who is personally known to me.

.....
Signature of Witness

See Annexure "A" for execution by Transferor

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

.....
Address of Witness

.....
Signature of Transferor

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

.....
Signature of Witness

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

.....
Address of Witness

.....
Signature of Transferee Solicitor for D. R. BLUTH

If signed on the transferee's behalf by a solicitor or licensed conveyancer, show the signatory's full name in block letters.

CHECKED BY (LTO use).....

THIS IS THE ANNEXURE "A" TO THE TRANSFER DATED 30 April 1997
BETWEEN PEMTA PTY LIMITED AND TRUST COMPANY OF AUSTRALIA AND IOOF AUSTRALIA TRUSTEES (NSW) LIMITED

1.	V696015	LSE
2.	W437192	LSE
3.	U225385	LSE
4.	O480544	
5.	2052333	
6.	2524478	
7.	2653957	
8.	Z178221	
9.	0196734	
10.	2052331	
11.	2279184	
12.	2279185	
13.	2510294	
14.	U638240	

THE COMMON SEAL of)
PEMTA PTY LIMITED)
was hereunto affixed in)
accordance with its)
Articles of Association)
and in the presence of:)

Common Seal
PEMTA PTY LIMITED
002 050 851

M. Uffe
SECRETARY

Director

THE COMMON SEAL of)
TRUST COMPANY OF AUSTRALIA)
LIMITED)
was hereunto affixed in)
accordance with its)
Articles of Association)
and in the presence of:)

TRUST COMPANY OF AUSTRALIA LIMITED A.C.N. 004 027 749
THE COMMON SEAL OF

AUTHORISE COUNTERSIGNING WITNESS

DIRECTOR
N 193/97

THE COMMON SEAL of TRUST COMPANY OF AUSTRALIA LIMITED A.C.N. 004 027 749 was hereunto affixed by authority of the Directors:

T:\LET\MZL0426.DOC 1 MZL

3038084 * 3038084 * 3038084

6913528M

Form: 97-01T
Licence: 026CN/0526/96

TRANSFER

New South Wales

Real Property Act 1900

Instructions for filling out this form are available from the Land Titles Office

Office of State Revenue use only

NEW SOUTH WALES DUTY
02-02-2000 0000210368-001
SECTION 54
DUTY $ **********10.00

(A) **LAND TRANSFERRED**
Show no more than 20 titles. If appropriate, specify the share or part transferred.

Folio Identifiers 21/700406, 22/700406 and 786/752028

(B) **LODGED BY**

LTO Box	Name, Address or DX and Telephone
~~42G~~ 238N	~~MIDDLETONS MOORE & BEVINS~~ BLAKE DAWSON WALDRON Lawyers ~~DX 10263 SSE~~ Grosvenor Place ~~TEL: 9390 8100~~ 225 George Street, Sydney N.S.W. 2000 Australia DX: 355 REFERENCE (15 character maximum): ~~LGS.AEC.ABA413/12~~ LZW

(C) **TRANSFEROR** **IOOF AUSTRALIA TRUSTEES (NSW) LIMITED** A.C.N. 000 329 706

(D) acknowledges receipt of the consideration of **NIL**
and as regards the land specified above transfers to the transferee an estate in fee simple.

(E) Encumbrances (if applicable) 1. 2. 3.

(F) **TRANSFEREE**

T TS (s713 LGA) TW (Sheriff)	**PERPETUAL TRUSTEE COMPANY LIMITED** A.C.N. 000 001 007
(G)	**TENANCY:**

(H) We certify this dealing correct for the purposes of the Real Property Act 1900. **DATE** .....
Signed in my presence by the transferor who is personally known to me.

.....
Signature of Witness

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

.....
Address of Witness

FOR EXECUTION
SEE ANNEXURE "A"

.....
Signature of Transferor

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

.....
Signature of Witness

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

.....
Address of Witness

.....
Signature of Transferee/'s Solicitor

NB: if signed on the transferee's behalf by a solicitor or licensed conveyancer, show the signatory's full name in block letters.

CHECKED BY (LTO use) RMG

#374563 v1: 9.12.1999

ANNEXURE "A"

The **COMMON SEAL** of)
IOOF AUSTRALIA)
TRUSTEES (NSW) LIMITED)
was affixed by authority of its Board)
of Directors in the presence of:)

RUSSELL STERN SOLICITOR SIGNED
.....
Signature of Authorised Person

.....
Office held

.....
Name of Authorised Persons
(Print Name)

Signed for and on behalf of IOOF Australia Trustees (N.S.W.) Limited (A.C.N. 000 329 706) by its Attorneys who hereby state that they have not received any notice of the revocation of the Power of Attorney dated 24/06/97 Registered Number 33 Book 4170 whereunder this document is now executed.

.....
Manager - Corporate Trusts

.....
Signature of Authorised Persons

.....
Office held

.....
Name of Authorised Persons
(Print Name)

SIGNED for and on behalf of)
PERPETUAL TRUSTEE)
COMPANY LIMITED by its)
Attorney pursuant to Power of)
Attorney registered No. 4257)
Book 420 in the presence of:)

.....
Signature of Witness
VICKI RIGGIO
.....
Name of Witness (Print Name)
1 CASTLEREAGH ST
Sydney

.....
Signature of Attorney

SILVANA ROSSI SALLY ALDRIDGE
Name of Attorney (Print Name)
21/12/99

CHECKED BY (LTO use).....
#374563 v1: 15.12.1999

(3)

Form: 01T
Release: 6·0

TRANSFER

New South Wales
Real Property Act 1900

AH59488G

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the [illegible] to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY Office of State Revenue use only

NEW SOUTH WALES DUTY
18-06-2012 0006707348-001
SECTION 308-TRANSFER
NO DUTY PAYABLE

(A) **TORRENS TITLE** Folio Identifiers 786/752028, 22/700406 and 21/700406

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
185H	Clayton Wtz 123111C Dx 370 Sydney Reference: B.Hillier 80124868	T TW

(C) **TRANSFEROR** Perpetual Trustee Company Limited ABN 000 001 007

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 44,400,000.00 and as regards

(E) **ESTATE** the abovementioned land transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** Transport for NSW ABN 18 804 239 602

(I) **TENANCY:**

DATE 15 JUNE 2012

(J) I certify that I am an eligible witness and that the transferor's attorney signed this dealing in my presence. [See note* below].

Signature of witness:

Name of witness: Mark Callaghan
Address of witness: Angel Place
123 Pitt St
Sydney NSW 2000

Certified correct for the purposes of the Real Property Act 1900 by the transferor's attorney who signed this dealing pursuant to the power of attorney specified.

Signature of attorney: Alex Brito

Attorney's name: Sonal Razdan
Senior Client Service Officer
Senior Client Service Officer
Signing on behalf of: Perpetual Trustee Company Limited
Power of attorney-Book: 4565
-No.: 619

? & may be registered - Legl.

Certified correct for the purposes of the Real Property Act 1900 on behalf of the transferee by the person whose signature appears below.

Signature:

Signatory's name:
Signatory's capacity: Anne Maree Taylor
solicitor

(K) The transferee certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. Full name: Signature:

** s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation.*

ALL HANDWRITING MUST BE IN BLOCK CAPITALS

1111

InfoTrack
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Information Broker

Historical Title

Information Provided Through
John McLaren & Co (NSW)
Ph. 02 9231 4872 Fax. 02 9233 6557

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
29/8/2017 2:22PM

FOLIO: 22/1180959

First Title(s): VOL 12342 FOL 107 VOL 2685 FOL 66
VOL 2790 FOL 4 VOL 2790 FOL 5
786/752028 OLD SYSTEM
THIS FOLIO
Prior Title(s): 21-22/700406 ~~786/752028~~
GZ 21122012 FOL 5253

Recorded	Number	Type of Instrument	C.T. Issue
1/2/2013	DP1180959	DEPOSITED PLAN	LOT RECORDED FOLIO NOT CREATED
29/6/2015	PA83261	PRIMARY APPLICATION	FOLIO CREATED CT NOT ISSUED
30/6/2015	AI902548	REQUEST	FOLIO CREATED EDITION 1
16/6/2016	AK512610	DEPARTMENTAL DEALING	
29/6/2016	AK558617	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

Epping PRINTED ON 29/8/2017

InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

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Information Broker

Title Search

Information Provided Through
John McLaren & Co (NSW)
Ph. 02 9231 4872 Fax. 02 9233 6557

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 22/1180959

SEARCH DATE	TIME	EDITION NO	DATE
29/8/2017	3:16 PM	1	30/6/2015

LAND

LOT 22 IN DEPOSITED PLAN 1180959
AT EPPING
LOCAL GOVERNMENT AREA CITY OF PARRAMATTA
PARISH OF FIELD OF MARS COUNTY OF CUMBERLAND
TITLE DIAGRAM DP1180959

FIRST SCHEDULE

TRANSPORT FOR NSW

SECOND SCHEDULE (2 NOTIFICATIONS)

1 S700000A LAND EXCLUDES MINERALS AS REGARDS THE PART DESIGNATED (W) IN THE TITLE DIAGRAM

2 LAND EXCLUDES MINERALS RESERVED BY THE CROWN GRANTS OF PORTIONS 845 TO 849 & LOTS 1 AND 2 IN DP245352

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Epping PRINTED ON 29/8/2017

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

Appendix L Historical Photographs

1 – P.A. JAMES TIMBER MERCHANT SHOPFRONT



JBS&G

Job No: 54111	
Client: UrbanGrowth NSW	
Version: R01 Rev 0	Date: 15 September 2017
Drawn By: RH	Checked By: JR
Not to Scale	
Source: Historic Photographs Australia	
Coord. Sys n/a	

240-244 Beecroft Road, Epping, NSW

APPENDIX J

2 – NOTSONS SERVICE STATION, LOOKING NORTH (7-ELEVEN LOCATION, SOUTH OF SITE)



HISTORICAL

JBS&G

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev 0	Date: 15 September 2017
Drawn By: RH	Checked By: JR

Not to Scale

Source: Historic Photographs Australia

Coord. Sys n/a

240-244 Beecroft Road, Epping, NSW

APPENDIX J

3 – NOTSONS SERVICE STATION, LOOKING SOUTH (LOCATION OF 7-ELEVEN, SOUTH OF SITE)



SIGNATURE

JBS&G

Job No: 54111

Client: UrbanGrowth NSW

Version: R01 Rev 0	Date: 15 September 2017
Drawn By: RH	Checked By: JR

Not to Scale

Source: Historic Photographs Australia

Coord. Sys n/a

240-244 Beecroft Road, Epping, NSW

APPENDIX J

Appendix M Calibration and Decontamination Records

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 10D101443

airmet
Air-Met Scientific Pty Ltd
1300 137 067

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		291176	pH 9.31
2. pH 7.00		pH 7.00		290453	pH 6.82
3. pH 4.00		pH 4.00		288994	pH 4.01
4. mV		231.8mV		299345/297604	230.5mV
5. EC		2.76mS		292380	2.75mS
6. D.O		0.00ppm		3829	0.04ppm
7. Temp		21.1°C		MultiTherm	20.7°C

Calibrated by: Ben O'Donnell **Ben O'Donnell**

Calibration date: **26/09/2017**

Next calibration due: **26/10/2017**

Appendix N Detailed Laboratory Reports and Chain of Custody Documentation

010426

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54111	LABORATORY BATCH NO.:
PROJECT NAME: Ealing DD	SAMPLERS: RH
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) Allammond@jbsg.com.au; (3) .....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION | NEPM/WA

565129

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	JB2	Cyanide	NOTES:
BH11 0-0.05	Soil	25-9-17	-	250mL Jar + Ice	Nt			
0.4-0.5								
0.9-1.0						X		
1.4-1.5								
1.9-2.0								
2.4-2.5								
2.9-3.0						X	X	
BH10 0.12-0.2						X	X	
0.4-0.5								
0.9-1.0								
BH09 0.15-0.2								
0.4-0.5								
0.9-1.0								
BH08 0.1-0.15								
0.4-0.5								
0.8-0.9								
BH07 0.12-0.2						X	X	
0.4-0.5								
0.9-1.0						X		

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: Rohan H DATE: 26-9-12 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Ursula Lang DATE: 27/9 OF: Eurofins Mgt	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C 23.5
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial, S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

010427

CHAIN OF CUSTODY

JBS&G

PROJECT NO.:	LABORATORY BATCH NO.:
PROJECT NAME:	SAMPLERS:
DATE NEEDED BY:	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) .....@jbsg.com.au; (3) .....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Asbestos	TRH/BTEX Cyanide	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
BH02 0-0.2	Soil	25-7-17	-	250mL Jar+Ice			X			
BH02 0.4-0.5										
0.9-1.0							X			
1.4-1.5										
BH03 0-0.1										
QC01							X X			
BH11 0-1.0				500mL bag		X				
1.0-2.0						X				
2.0-3.0						X				
BH10 0.12-1.0						X				
BH09 0.15-1.0						X				
BH07 0.12-1.0						X				
BH02 0.1-1.0						X				
BH02 1.0-1.7						X				
BH03 0.1-0.3						X				
QC02						X				
TS/TB	Water			Vials & Ice						
Rins				Bottles, Nay & Ice			X X			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	DATE: OF:	COOLER TEMP ..... 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

Enviro Sample NSW

From: Rohan Hammond <RHammond@jbsg.com.au>
Sent: Wednesday, 27 September 2017 3:59 PM
To: Enviro Sample NSW
Subject: Re: Eurofins | mgt Sample Receipt Advice - Report 565129 : Site EPPING DD (54111)

Follow Up Flag: Follow up
Flag Status: Flagged

Hello.

Please note coc reference to BH10 0.9-1.0 is incorrect, coc should say BH10 0.6-0.7. Please transfer analyses to the recieved jar.

Please move analyses from bh07 0.12-0.2 to bh07 0.4-0.5

Rohan.

Sent from my Samsung Galaxy smartphone.
-------- Original message --------
From: EnviroSampleNSW@eurofins.com
Date: 27/09/2017 3:47 PM (GMT+10:00)
To: Rohan Hammond <RHammond@jbsg.com.au>
Subject: Eurofins | mgt Sample Receipt Advice - Report 565129 : Site EPPING DD (54111)

Dear Valued Client,
2 Jars Received for BH02 1.4-1.5
2 Bags Received for BH02 1.0-1.7
Missing Sample-Analysis Cancelled: BH10 0.9-1.0, BH07 0.12-0.2
Extra Jars Received-On Hold: BH02 0.15-0.2, BH10 0.6-0.7
Please find attached an updated Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins | mgt Analytical Services Manager as soon as possible to make certain that they get changed.

Regards

Ursula Long
Sample Receipt

Eurofins | mgt
Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA
Phone: +61 299 008 400
Email: EnviroSampleNSW@eurofins.com
Website:environment.eurofins.com.au

EnviroNote 1072 - NATA Accreditation for AirToxics Brisbane
EnviroNote 1073 - 1,4-Dioxane : a new Contaminant of Concern?

Click here to report this email as spam.

ScannedByWebsenseForEurofins

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Rohan Hammond
Project name: EPPING DD
Project ID: 54111
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Sep 26, 2017 5:29 PM
Eurofins | mgt reference: **565129**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 23.5 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

2 Jars Received for BH02 1.4-1.5| 2 Bags Received for BH02 1.0-1.7| Missing Sample-Analysis Cancelled: BH10 0.9-1.0, BH07 0.12-0.2| Extra Jars Received-On Hold: BH02 0.15-0.2, BH10 0.6-0.7

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Rohan Hammond - rhammond@jbsg.com.au.

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Melbourne
2-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261 Site # 14271

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	565129
		Phone:	02 8245 0300
		Fax:	
Project Name:	EPPING DD		
Project ID:	54111		

Received:	Sep 26, 2017 5:29 PM
Due:	Oct 4, 2017
Priority:	5 Day
Contact Name:	Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	CANCELLED	Cyanide (total)	HOLD	Moisture Set	JBS&G Suite 2
elbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
ydney Laboratory - NATA Site # 18217						X					
isbane Laboratory - NATA Site # 20794											
erth Laboratory - NATA Site # 23736											
ternal Laboratory											
o	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
	BH11 0-0.05	Sep 25, 2017		Soil	S17-Se32620				X		
	BH11 0.4-0.5	Sep 25, 2017		Soil	S17-Se32621				X		
	BH11 0.9-1.0	Sep 25, 2017		Soil	S17-Se32622					X	X
	BH11 1.4-1.5	Sep 25, 2017		Soil	S17-Se32623				X		
	BH11 1.9-2.0	Sep 25, 2017		Soil	S17-Se32624				X		
	BH11 2.4-2.5	Sep 25, 2017		Soil	S17-Se32625				X		
	BH11 2.9-3.0	Sep 25, 2017		Soil	S17-Se32626			X		X	X
	BH10 0.12-0.2	Sep 25, 2017		Soil	S17-Se32627			X		X	X
	BH10 0.4-0.5	Sep 25, 2017		Soil	S17-Se32628				X		

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Melbourne
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Phone : +61 3 8564 5000
NATA # 1261 Site # 14271

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	565129
		Phone:	02 8245 0300
		Fax:	
Project Name:	EPPING DD		
Project ID:	54111		

Received:	Sep 26, 2017 5:29 PM
Due:	Oct 4, 2017
Priority:	5 Day
Contact Name:	Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	CANCELLED	Cyanide (total)	HOLD	Moisture Set	JBS&G Suite 2
elbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
ydney Laboratory - NATA Site # 18217						X					
isbane Laboratory - NATA Site # 20794											
erth Laboratory - NATA Site # 23736											
	BH10 0.9-1.0	Sep 25, 2017		Soil	S17-Se32629		X				
	BH09 0.15-0.2	Sep 25, 2017		Soil	S17-Se32630				X		
	BH09 0.4-0.5	Sep 25, 2017		Soil	S17-Se32631				X		
	BH09 0.9-1.0	Sep 25, 2017		Soil	S17-Se32632				X		
	BH08 0.1-0.15	Sep 25, 2017		Soil	S17-Se32633				X		
	BH08 0.4-0.5	Sep 25, 2017		Soil	S17-Se32634				X		
	BH08 0.8-0.9	Sep 25, 2017		Soil	S17-Se32635				X		
	BH07 0.12-0.2	Sep 25, 2017		Soil	S17-Se32636		X				
	BH07 0.4-0.5	Sep 25, 2017		Soil	S17-Se32637			X		X	X
	BH07 0.9-1.0	Sep 25, 2017		Soil	S17-Se32638					X	X
	BH02 0.1-0.2	Sep 25, 2017		Soil	S17-Se32639					X	X
	BH02 0.4-0.5	Sep 25, 2017		Soil	S17-Se32640				X		

Sydney
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16 Mars Road
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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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2-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261 Site # 14271

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	565129
		Phone:	02 8245 0300
		Fax:	
Project Name:	EPPING DD		
Project ID:	54111		

Received:	Sep 26, 2017 5:29 PM
Due:	Oct 4, 2017
Priority:	5 Day
Contact Name:	Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	CANCELLED	Cyanide (total)	HOLD	Moisture Set	JBS&G Suite 2
elbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
ydney Laboratory - NATA Site # 18217						X					
isbane Laboratory - NATA Site # 20794											
erth Laboratory - NATA Site # 23736											
	BH02 0.9-1.0	Sep 25, 2017		Soil	S17-Se32641					X	X
	BH02 1.4-1.5	Sep 25, 2017		Soil	S17-Se32642				X		
	BH03 0-0.1	Sep 25, 2017		Soil	S17-Se32643				X		
	QC01	Sep 25, 2017		Soil	S17-Se32644			X		X	X
	BH11 0-1.0	Sep 25, 2017		Soil	S17-Se32645	X					
	BH11 1.0-2.0	Sep 25, 2017		Soil	S17-Se32646	X					
	BH11 2.0-3.0	Sep 25, 2017		Soil	S17-Se32647	X					
	BH10 0.12-1.0	Sep 25, 2017		Soil	S17-Se32648	X					
	BH09 0.15-1.0	Sep 25, 2017		Soil	S17-Se32649				X		
	BH07 0.12-1.0	Sep 25, 2017		Soil	S17-Se32650	X					
	BH02 0.1-1.0	Sep 25, 2017		Soil	S17-Se32651	X					
	BH02 1.0-1.7	Sep 25, 2017		Soil	S17-Se32652	X					

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Melbourne
2-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1254 &
Site# 1254

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	565129
		Phone:	02 8245 0300
		Fax:	
Project Name:	EPPING DD		
Project ID:	54111		

Received:	Sep 26, 2017 5:29 PM
Due:	Oct 4, 2017
Priority:	5 Day
Contact Name:	Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	CANCELLED	Cyanide (total)	HOLD	Moisture Set	JBS&G Suite 2
elbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
ydney Laboratory - NATA Site # 18217						X					
isbane Laboratory - NATA Site # 20794											
erth Laboratory - NATA Site # 23736											
	BH03 0.1-0.3	Sep 25, 2017		Soil	S17-Se32653	X					
	QC02	Sep 25, 2017		Soil	S17-Se32654	X					
	TS	Sep 25, 2017		Water	S17-Se32655				X		
	TB	Sep 25, 2017		Water	S17-Se32656				X		
	RINS	Sep 25, 2017		Water	S17-Se32657			X			X
	BH02 0.15-0.2	Sep 25, 2017		Soil	S17-Se32931				X		
	BH10 0.6-0.7	Sep 25, 2017		Soil	S17-Se32932				X		
est Counts						9	2	5	20	8	9

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Rohan Hammond
Report	565129-AID
Project Name	EPPING DD
Project ID	54111
Received Date	Sep 26, 2017
Date Reported	Oct 04, 2017

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w).The examination of large sample sizes(500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction.The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA(friable asbestos) and AF(asbestos fines) then applies where they are able to be quantified by gravimetric procedures.This quantitative screening is not generally applicable to FF(free fibres) and results of Trace Analysis are referred. *NOTE: NATA News March 2014, p.7, states in relation to AS4964: "This is a qualitative method with a nominal reporting limit of 0.01%" and that currently in Australia "there is no validated method available for the quantification of asbestos". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk).* *This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the Western Australia Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, 2009, including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil, June 2011.*

Project Name EPPING DD
Project ID 54111
Date Sampled Sep 25, 2017
Report 565129-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
BH11 0-1.0	17-Se32645	Sep 25, 2017	Approximate Sample 714g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
BH11 1.0-2.0	17-Se32646	Sep 25, 2017	Approximate Sample 636g Sample consisted of: Brown coarse grain soil and rocks	FA: Chrysotile and amosite asbestos detected in weathered fibre cement fragments. Approximate raw weight of FA = 0.0032g Estimated asbestos content in FA = 0.0013g* Total estimated asbestos concentration in FA = 0.00020% w/w* No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected.[M11]
BH11 2.0-3.0	17-Se32647	Sep 25, 2017	Approximate Sample 694g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
BH10 0.12-1.0	17-Se32648	Sep 25, 2017	Approximate Sample 914g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
BH07 0.12-1.0	17-Se32650	Sep 25, 2017	Approximate Sample 929g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
BH02 0.1-1.0	17-Se32651	Sep 25, 2017	Approximate Sample 990g Sample consisted of: Brown fine grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
BH02 1.0-1.7	17-Se32652	Sep 25, 2017	Approximate Sample 1620g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
BH03 0.1-0.3	17-Se32653	Sep 25, 2017	Approximate Sample 517g Sample consisted of: Dark brown fine grain soil, rocks and organic debris	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
QC02	17-Se32654	Sep 25, 2017	Approximate Sample 822g Sample consisted of: Brown coarse grain soil and rocks	FA: Chrysotile and amosite asbestos detected in weathered fibre cement fragments. Approximate Raw weight of FA = 0.0068g Estimated asbestos content in FA = 0.0027g* AF: Chrysotile and amosite asbestos detected in the form of loose fibre bundles. Approximate raw weight of AF = 0.0016g* Estimated asbestos content in AF = 0.0016g* Total estimated asbestos content in FA and AF = 0.0043g* Total estimated asbestos concentration in FA and AF = 0.00053% w/w* No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected.[M11]

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Sep 27, 2017	Indefinite

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Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: EPPING DD
Project ID: 54111

Order No.:
Report #: 565129
Phone: 02 8245 0300
Fax:

Received: Sep 26, 2017 5:29 PM
Due: Oct 4, 2017
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	CANCELLED	Cyanide (total)	HOLD	Moisture Set	JBS&G Suite 2
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X					
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	BH11 0-0.05	Sep 25, 2017		Soil	S17-Se32620				X		
2	BH11 0.4-0.5	Sep 25, 2017		Soil	S17-Se32621				X		
3	BH11 0.9-1.0	Sep 25, 2017		Soil	S17-Se32622					X	X
4	BH11 1.4-1.5	Sep 25, 2017		Soil	S17-Se32623				X		
5	BH11 1.9-2.0	Sep 25, 2017		Soil	S17-Se32624				X		
6	BH11 2.4-2.5	Sep 25, 2017		Soil	S17-Se32625				X		
7	BH11 2.9-3.0	Sep 25, 2017		Soil	S17-Se32626			X		X	X
8	BH10 0.12-0.2	Sep 25, 2017		Soil	S17-Se32627			X		X	X
9	BH10 0.4-0.5	Sep 25, 2017		Soil	S17-Se32628				X		

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Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X					
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
10	BH10 0.9-1.0	Sep 25, 2017		Soil	S17-Se32629		X				
11	BH09 0.15-0.2	Sep 25, 2017		Soil	S17-Se32630				X		
12	BH09 0.4-0.5	Sep 25, 2017		Soil	S17-Se32631				X		
13	BH09 0.9-1.0	Sep 25, 2017		Soil	S17-Se32632				X		
14	BH08 0.1-0.15	Sep 25, 2017		Soil	S17-Se32633				X		
15	BH08 0.4-0.5	Sep 25, 2017		Soil	S17-Se32634				X		
16	BH08 0.8-0.9	Sep 25, 2017		Soil	S17-Se32635				X		
17	BH07 0.12-0.2	Sep 25, 2017		Soil	S17-Se32636		X				
18	BH07 0.4-0.5	Sep 25, 2017		Soil	S17-Se32637			X		X	X
19	BH07 0.9-1.0	Sep 25, 2017		Soil	S17-Se32638					X	X
20	BH02 0.1-0.2	Sep 25, 2017		Soil	S17-Se32639					X	X
21	BH02 0.4-0.5	Sep 25, 2017		Soil	S17-Se32640				X		

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Sample Detail						Asbestos - WA guidelines	CANCELLED	Cyanide (total)	HOLD	Moisture Set	JBS&G Suite 2
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X					
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
22	BH02 0.9-1.0	Sep 25, 2017		Soil	S17-Se32641					X	X
23	BH02 1.4-1.5	Sep 25, 2017		Soil	S17-Se32642				X		
24	BH03 0-0.1	Sep 25, 2017		Soil	S17-Se32643				X		
25	QC01	Sep 25, 2017		Soil	S17-Se32644			X		X	X
26	BH11 0-1.0	Sep 25, 2017		Soil	S17-Se32645	X					
27	BH11 1.0-2.0	Sep 25, 2017		Soil	S17-Se32646	X					
28	BH11 2.0-3.0	Sep 25, 2017		Soil	S17-Se32647	X					
29	BH10 0.12-1.0	Sep 25, 2017		Soil	S17-Se32648	X					
30	BH09 0.15-1.0	Sep 25, 2017		Soil	S17-Se32649				X		
31	BH07 0.12-1.0	Sep 25, 2017		Soil	S17-Se32650	X					
32	BH02 0.1-1.0	Sep 25, 2017		Soil	S17-Se32651	X					
33	BH02 1.0-1.7	Sep 25, 2017		Soil	S17-Se32652	X					

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Sample Detail						Asbestos - WA guidelines	CANCELLED	Cyanide (total)	HOLD	Moisture Set	JBS&G Suite 2
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X					
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
34	BH03 0.1-0.3	Sep 25, 2017		Soil	S17-Se32653	X					
35	QC02	Sep 25, 2017		Soil	S17-Se32654	X					
36	TS	Sep 25, 2017		Water	S17-Se32655				X		
37	TB	Sep 25, 2017		Water	S17-Se32656				X		
38	RINS	Sep 25, 2017		Water	S17-Se32657			X			X
39	BH02 0.15-0.2	Sep 25, 2017		Soil	S17-Se32931				X		
40	BH10 0.6-0.7	Sep 25, 2017		Soil	S17-Se32932				X		
Test Counts						9	2	5	20	8	9

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substatntial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Sample 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
M11	NATA/IANZ accreditation does not cover the performance of this service.

Asbestos Counter/Identifier:

Matthew Quigley	Senior Analyst-Asbestos (NSW)

Authorised by:

Laxman Dias	Senior Analyst-Asbestos (NSW)



Glenn Jackson
National Operations Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
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NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Rohan Hammond**

Report **565129-S**
Project name EPPING DD
Project ID 54111
Received Date Sep 26, 2017

Client Sample ID			**BH11 0.9-1.0**	**BH11 2.9-3.0**	**BH10 0.12-0.2**	**BH07 0.4-0.5**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S17-Se32622**	**S17-Se32626**	**S17-Se32627**	**S17-Se32637**
Date Sampled			**Sep 25, 2017**	**Sep 25, 2017**	**Sep 25, 2017**	**Sep 25, 2017**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	78	71	73	75
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10	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
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

Client Sample ID			BH11 0.9-1.0	BH11 2.9-3.0	BH10 0.12-0.2	BH07 0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S17-Se32622**	**S17-Se32626**	**S17-Se32627**	**S17-Se32637**
Date Sampled			**Sep 25, 2017**	**Sep 25, 2017**	**Sep 25, 2017**	**Sep 25, 2017**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	95	89	87	96
p-Terphenyl-d14 (surr.)	1	%	95	102	101	98
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	0.07
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	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.07
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	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	101	99	128	107
Tetrachloro-m-xylene (surr.)	1	%	126	115	129	130
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	101	99	128	107
Tetrachloro-m-xylene (surr.)	1	%	126	115	129	130

Client Sample ID			BH11 0.9-1.0	BH11 2.9-3.0	BH10 0.12-0.2	BH07 0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S17-Se32622**	**S17-Se32626**	**S17-Se32627**	**S17-Se32637**
Date Sampled			**Sep 25, 2017**	**Sep 25, 2017**	**Sep 25, 2017**	**Sep 25, 2017**
Test/Reference	LOR	Unit				
Cyanide (total)	5	mg/kg	-	< 5	< 5	< 5
% Moisture	1	%	11	9.0	17	9.1
Heavy Metals						
Arsenic	2	mg/kg	5.3	3.9	< 2	7.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	11	7.1	23
Copper	5	mg/kg	13	9.9	< 5	11
Lead	5	mg/kg	53	28	8.4	40
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	6.5	< 5	< 5	7.0
Zinc	5	mg/kg	61	36	12	66

Client Sample ID			BH07 0.9-1.0	BH02 0.1-0.2	BH02 0.9-1.0	QC01
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S17-Se32638**	**S17-Se32639**	**S17-Se32641**	**S17-Se32644**
Date Sampled			**Sep 25, 2017**	**Sep 25, 2017**	**Sep 25, 2017**	**Sep 25, 2017**
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	98	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	66	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	98	66	< 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	%	77	76	73	71
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10	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
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			BH07 0.9-1.0	BH02 0.1-0.2	BH02 0.9-1.0	QC01
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S17-Se32638**	**S17-Se32639**	**S17-Se32641**	**S17-Se32644**
Date Sampled			**Sep 25, 2017**	**Sep 25, 2017**	**Sep 25, 2017**	**Sep 25, 2017**
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	%	86	98	99	90
p-Terphenyl-d14 (surr.)	1	%	95	84	100	94
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	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 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	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	94	88	98	96
Tetrachloro-m-xylene (surr.)	1	%	119	97	110	111
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH07 0.9-1.0 Soil S17-Se32638 Sep 25, 2017	BH02 0.1-0.2 Soil S17-Se32639 Sep 25, 2017	BH02 0.9-1.0 Soil S17-Se32641 Sep 25, 2017	QC01 Soil S17-Se32644 Sep 25, 2017
Polychlorinated Biphenyls						
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	94	88	98	96
Tetrachloro-m-xylene (surr.)	1	%	119	97	110	111
Cyanide (total)	5	mg/kg	-	-	-	< 5
% Moisture	1	%	10	4.0	8.3	10
Heavy Metals						
Arsenic	2	mg/kg	3.2	< 2	4.3	10
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	8.6	25	23	31
Copper	5	mg/kg	6.4	49	29	23
Lead	5	mg/kg	27	5.8	24	46
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	86	39	7.4
Zinc	5	mg/kg	39	54	58	58

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
JBS&G Suite 2			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Oct 02, 2017	14 Day
- Method: LTM-ORG-2010 TRH C6-C36			
BTEX	Melbourne	Oct 02, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 02, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 02, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Oct 02, 2017	14 Day
- Method: LTM-ORG-2140 PAH and Phenols in Soils by GCMS			
Organochlorine Pesticides	Melbourne	Oct 02, 2017	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Oct 02, 2017	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Melbourne	Oct 02, 2017	28 Days
- Method: LTM-MET-3030 by ICP-OES (hydride ICP-OES for Mercury)			
Cyanide (total)	Melbourne	Oct 02, 2017	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
% Moisture	Melbourne	Sep 28, 2017	14 Day
- Method: LTM-GEN-7080 Moisture			

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web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	565129
		Phone:	02 8245 0300
		Fax:	
Project Name:	EPPING DD		
Project ID:	54111		

Received:	Sep 26, 2017 5:29 PM
Due:	Oct 4, 2017
Priority:	5 Day
Contact Name:	Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	CANCELLED	Cyanide (total)	HOLD	Moisture Set	JBS&G Suite 2
elbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
ydney Laboratory - NATA Site # 18217						X					
isbane Laboratory - NATA Site # 20794											
erth Laboratory - NATA Site # 23736											
cternal Laboratory											
o	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
	BH11 0-0.05	Sep 25, 2017		Soil	S17-Se32620				X		
	BH11 0.4-0.5	Sep 25, 2017		Soil	S17-Se32621				X		
	BH11 0.9-1.0	Sep 25, 2017		Soil	S17-Se32622					X	X
	BH11 1.4-1.5	Sep 25, 2017		Soil	S17-Se32623				X		
	BH11 1.9-2.0	Sep 25, 2017		Soil	S17-Se32624				X		
	BH11 2.4-2.5	Sep 25, 2017		Soil	S17-Se32625				X		
	BH11 2.9-3.0	Sep 25, 2017		Soil	S17-Se32626			X		X	X
	BH10 0.12-0.2	Sep 25, 2017		Soil	S17-Se32627			X		X	X
	BH10 0.4-0.5	Sep 25, 2017		Soil	S17-Se32628				X		

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Date Reported:Oct 04, 2017

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Sample Detail						Asbestos - WA guidelines	CANCELLED	Cyanide (total)	HOLD	Moisture Set	JBS&G Suite 2
elbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
ydney Laboratory - NATA Site # 18217						X					
isbane Laboratory - NATA Site # 20794											
erth Laboratory - NATA Site # 23736											
	BH10 0.9-1.0	Sep 25, 2017		Soil	S17-Se32629		X				
	BH09 0.15-0.2	Sep 25, 2017		Soil	S17-Se32630				X		
	BH09 0.4-0.5	Sep 25, 2017		Soil	S17-Se32631				X		
	BH09 0.9-1.0	Sep 25, 2017		Soil	S17-Se32632				X		
	BH08 0.1-0.15	Sep 25, 2017		Soil	S17-Se32633				X		
	BH08 0.4-0.5	Sep 25, 2017		Soil	S17-Se32634				X		
	BH08 0.8-0.9	Sep 25, 2017		Soil	S17-Se32635				X		
	BH07 0.12-0.2	Sep 25, 2017		Soil	S17-Se32636		X				
	BH07 0.4-0.5	Sep 25, 2017		Soil	S17-Se32637			X		X	X
	BH07 0.9-1.0	Sep 25, 2017		Soil	S17-Se32638					X	X
	BH02 0.1-0.2	Sep 25, 2017		Soil	S17-Se32639					X	X
	BH02 0.4-0.5	Sep 25, 2017		Soil	S17-Se32640				X		

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Priority:	5 Day
Contact Name:	Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	CANCELLED	Cyanide (total)	HOLD	Moisture Set	JBS&G Suite 2
elbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
ydney Laboratory - NATA Site # 18217						X					
isbane Laboratory - NATA Site # 20794											
erth Laboratory - NATA Site # 23736											
	BH02 0.9-1.0	Sep 25, 2017		Soil	S17-Se32641					X	X
	BH02 1.4-1.5	Sep 25, 2017		Soil	S17-Se32642				X		
	BH03 0-0.1	Sep 25, 2017		Soil	S17-Se32643				X		
	QC01	Sep 25, 2017		Soil	S17-Se32644			X		X	X
	BH11 0-1.0	Sep 25, 2017		Soil	S17-Se32645	X					
	BH11 1.0-2.0	Sep 25, 2017		Soil	S17-Se32646	X					
	BH11 2.0-3.0	Sep 25, 2017		Soil	S17-Se32647	X					
	BH10 0.12-1.0	Sep 25, 2017		Soil	S17-Se32648	X					
	BH09 0.15-1.0	Sep 25, 2017		Soil	S17-Se32649				X		
	BH07 0.12-1.0	Sep 25, 2017		Soil	S17-Se32650	X					
	BH02 0.1-1.0	Sep 25, 2017		Soil	S17-Se32651	X					
	BH02 1.0-1.7	Sep 25, 2017		Soil	S17-Se32652	X					

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Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	565129
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Project Name:	EPPING DD		
Project ID:	54111		

Received:	Sep 26, 2017 5:29 PM
Due:	Oct 4, 2017
Priority:	5 Day
Contact Name:	Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	CANCELLED	Cyanide (total)	HOLD	Moisture Set	JBS&G Suite 2
elbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
ydney Laboratory - NATA Site # 18217						X					
isbane Laboratory - NATA Site # 20794											
erth Laboratory - NATA Site # 23736											
	BH03 0.1-0.3	Sep 25, 2017		Soil	S17-Se32653	X					
	QC02	Sep 25, 2017		Soil	S17-Se32654	X					
	TS	Sep 25, 2017		Water	S17-Se32655				X		
	TB	Sep 25, 2017		Water	S17-Se32656				X		
	RINS	Sep 25, 2017		Water	S17-Se32657			X			X
	BH02 0.15-0.2	Sep 25, 2017		Soil	S17-Se32931				X		
	BH10 0.6-0.7	Sep 25, 2017		Soil	S17-Se32932				X		
est Counts						9	2	5	20	8	9

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

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

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

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Cyanide (total)	mg/kg	< 5			5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	117			70-130	Pass	
TRH C10-C14	%	94			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	109			70-130	Pass	
Toluene	%	105			70-130	Pass	
Ethylbenzene	%	100			70-130	Pass	
m&p-Xylenes	%	101			70-130	Pass	
Xylenes - Total	%	102			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	99			70-130	Pass	
TRH C6-C10	%	108			70-130	Pass	
TRH >C10-C16	%	96			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	100			70-130	Pass	
Acenaphthylene	%	105			70-130	Pass	
Anthracene	%	92			70-130	Pass	
Benz(a)anthracene	%	104			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	%	89			70-130	Pass	
Benzo(b&j)fluoranthene	%	91			70-130	Pass	
Benzo(g.h.i)perylene	%	121			70-130	Pass	
Benzo(k)fluoranthene	%	111			70-130	Pass	
Chrysene	%	96			70-130	Pass	
Dibenz(a.h)anthracene	%	104			70-130	Pass	
Fluoranthene	%	100			70-130	Pass	
Fluorene	%	104			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	97			70-130	Pass	
Naphthalene	%	102			70-130	Pass	
Phenanthrene	%	109			70-130	Pass	
Pyrene	%	101			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	123			70-130	Pass	
4.4'-DDE	%	100			70-130	Pass	
4.4'-DDT	%	77			70-130	Pass	
a-BHC	%	96			70-130	Pass	
Aldrin	%	95			70-130	Pass	
b-BHC	%	73			70-130	Pass	
d-BHC	%	94			70-130	Pass	
Dieldrin	%	99			70-130	Pass	
Endosulfan I	%	97			70-130	Pass	
Endosulfan II	%	96			70-130	Pass	
Endosulfan sulphate	%	111			70-130	Pass	
Endrin	%	101			70-130	Pass	
Endrin aldehyde	%	107			70-130	Pass	
Endrin ketone	%	111			70-130	Pass	
g-BHC (Lindane)	%	95			70-130	Pass	
Heptachlor	%	104			70-130	Pass	
Heptachlor epoxide	%	95			70-130	Pass	
Hexachlorobenzene	%	90			70-130	Pass	
Methoxychlor	%	92			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	97			70-130	Pass	
LCS - % Recovery							
Cyanide (total)	%	92			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	109			80-120	Pass	
Cadmium	%	114			80-120	Pass	
Chromium	%	114			80-120	Pass	
Copper	%	117			80-120	Pass	
Lead	%	120			80-120	Pass	
Mercury	%	116			75-125	Pass	
Nickel	%	116			80-120	Pass	
Zinc	%	113			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M17-Se35234	NCP	%	84			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzene	M17-Se35234	NCP	%	79			70-130	Pass	
Toluene	M17-Se35234	NCP	%	82			70-130	Pass	
Ethylbenzene	M17-Se35234	NCP	%	80			70-130	Pass	
m&p-Xylenes	M17-Se35234	NCP	%	82			70-130	Pass	
o-Xylene	M17-Se35234	NCP	%	81			70-130	Pass	
Xylenes - Total	M17-Se35234	NCP	%	81			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M17-Se35234	NCP	%	89			70-130	Pass	
TRH C6-C10	M17-Se35234	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	Z17-Se34351	NCP	%	129			70-130	Pass	
4.4'-DDE	Z17-Se34351	NCP	%	110			70-130	Pass	
4.4'-DDT	Z17-Se34351	NCP	%	85			70-130	Pass	
a-BHC	Z17-Se34351	NCP	%	104			70-130	Pass	
Aldrin	Z17-Se34351	NCP	%	103			70-130	Pass	
b-BHC	Z17-Se34351	NCP	%	81			70-130	Pass	
d-BHC	Z17-Se34351	NCP	%	103			70-130	Pass	
Dieldrin	Z17-Se34351	NCP	%	103			70-130	Pass	
Endosulfan I	Z17-Se34351	NCP	%	101			70-130	Pass	
Endosulfan II	Z17-Se34351	NCP	%	98			70-130	Pass	
Endosulfan sulphate	Z17-Se34351	NCP	%	113			70-130	Pass	
Endrin	Z17-Se34351	NCP	%	117			70-130	Pass	
Endrin aldehyde	Z17-Se34351	NCP	%	88			70-130	Pass	
Endrin ketone	Z17-Se34351	NCP	%	104			70-130	Pass	
g-BHC (Lindane)	Z17-Se34351	NCP	%	102			70-130	Pass	
Heptachlor	Z17-Se34351	NCP	%	118			70-130	Pass	
Heptachlor epoxide	Z17-Se34351	NCP	%	125			70-130	Pass	
Hexachlorobenzene	Z17-Se34351	NCP	%	100			70-130	Pass	
Methoxychlor	Z17-Se34351	NCP	%	109			70-130	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	M17-Se33733	NCP	%	37			70-130	Fail	Q09
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S17-Se32627	CP	%	97			75-125	Pass	
Cadmium	S17-Se32627	CP	%	101			75-125	Pass	
Chromium	S17-Se32627	CP	%	99			75-125	Pass	
Copper	S17-Se32627	CP	%	105			75-125	Pass	
Lead	S17-Se32627	CP	%	106			75-125	Pass	
Mercury	S17-Se32627	CP	%	102			70-130	Pass	
Nickel	S17-Se32627	CP	%	103			75-125	Pass	
Zinc	S17-Se32627	CP	%	98			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S17-Se32639	CP	%	105			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S17-Se32639	CP	%	105			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M17-Se35233	NCP	mg/kg	< 20	< 20	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M17-Se35233	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M17-Se35233	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M17-Se35233	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M17-Se35233	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M17-Se35233	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	M17-Se35233	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M17-Se35233	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M17-Se35233	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S17-Se32622	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S17-Se32622	CP	mg/kg	< 0.05	0.06	33	30%	Fail	Q15
b-BHC	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S17-Se32622	CP	mg/kg	< 0.05	0.07	45	30%	Fail	Q15
Endosulfan I	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S17-Se32622	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S17-Se32622	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S17-Se32622	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S17-Se32622	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S17-Se32622	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S17-Se32622	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S17-Se32622	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S17-Se32622	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S17-Se32622	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S17-Se32622	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S17-Se32622	CP	%	11	11	1.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S17-Se32626	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
b-BHC	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S17-Se32626	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S17-Se32626	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S17-Se32626	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S17-Se32626	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S17-Se32626	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S17-Se32626	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S17-Se32626	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S17-Se32626	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S17-Se32626	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S17-Se32626	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	M17-Se33729	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S17-Se32626	CP	mg/kg	3.9	3.7	5.0	30%	Pass	
Cadmium	S17-Se32626	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S17-Se32626	CP	mg/kg	11	12	7.0	30%	Pass	
Copper	S17-Se32626	CP	mg/kg	9.9	11	12	30%	Pass	
Lead	S17-Se32626	CP	mg/kg	28	29	5.0	30%	Pass	
Mercury	S17-Se32626	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S17-Se32626	CP	mg/kg	< 5	5.4	20	30%	Pass	
Zinc	S17-Se32626	CP	mg/kg	36	36	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S17-Se32627	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S17-Se32627	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S17-Se32627	CP	mg/kg	7.1	7.1	<1	30%	Pass	
Copper	S17-Se32627	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S17-Se32627	CP	mg/kg	8.4	8.5	2.0	30%	Pass	
Mercury	S17-Se32627	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S17-Se32627	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S17-Se32627	CP	mg/kg	12	12	2.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S17-Se32638	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S17-Se32638	CP	mg/kg	98	< 50	180	30%	Fail	Q15
TRH C29-C36	S17-Se32638	CP	mg/kg	< 50	< 50	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S17-Se32638	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S17-Se32638	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S17-Se32638	CP	mg/kg	< 100	< 100	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q09	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC
Q15	The RPD reported passes Eurofins | mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Nibha Vaidya	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Alex Petridis	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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eurofins | mgt

Certificate of Analysis

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: **Rohan Hammond**

Report **565129-W**
Project name EPPING DD
Project ID 54111
Received Date Sep 26, 2017

Client Sample ID			**RINS**
Sample Matrix			**Water**
Eurofins | mgt Sample No.			**S17-Se32657**
Date Sampled			**Sep 25, 2017**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 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	%	88
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH C6-C10	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
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
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001

Client Sample ID			RINS
Sample Matrix			Water
Eurofins | mgt Sample No.			S17-Se32657
Date Sampled			Sep 25, 2017
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
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	%	75
p-Terphenyl-d14 (surr.)	1	%	103
Organochlorine Pesticides			
Chlordanes - Total	0.001	mg/L	< 0.001
4.4'-DDD	0.0001	mg/L	< 0.0001
4.4'-DDE	0.0001	mg/L	< 0.0001
4.4'-DDT	0.0001	mg/L	< 0.0001
a-BHC	0.0001	mg/L	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001
b-BHC	0.0001	mg/L	< 0.0001
d-BHC	0.0001	mg/L	< 0.0001
Dieldrin	0.0001	mg/L	< 0.0001
Endosulfan I	0.0001	mg/L	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001
Endosulfan sulphate	0.0001	mg/L	< 0.0001
Endrin	0.0001	mg/L	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001
Toxaphene	0.01	mg/L	< 0.01
Aldrin and Dieldrin (Total)*	0.0001	mg/L	< 0.0001
DDT + DDE + DDD (Total)*	0.0001	mg/L	< 0.0001
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	< 0.001
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	< 0.001
Dibutylchlorendate (surr.)	1	%	114
Tetrachloro-m-xylene (surr.)	1	%	76
Polychlorinated Biphenyls			
Aroclor-1016	0.001	mg/L	< 0.001
Aroclor-1221	0.001	mg/L	< 0.001
Aroclor-1232	0.001	mg/L	< 0.001
Aroclor-1242	0.001	mg/L	< 0.001
Aroclor-1248	0.001	mg/L	< 0.001
Aroclor-1254	0.001	mg/L	< 0.001
Aroclor-1260	0.001	mg/L	< 0.001
Total PCB*	0.001	mg/L	< 0.001
Dibutylchlorendate (surr.)	1	%	114
Tetrachloro-m-xylene (surr.)	1	%	76
Cyanide (total)	0.005	mg/L	< 0.005

Client Sample ID			RINS
Sample Matrix			**Water**
Eurofins | mgt Sample No.			**S17-Se32657**
Date Sampled			**Sep 25, 2017**
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	0.006

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
JBS&G Suite 2			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 28, 2017	7 Day
- Method: LTM-ORG-2010 TRH C6-C36			
BTEX	Melbourne	Sep 28, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 28, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 28, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Sep 28, 2017	7 Day
- Method: LTM-ORG-2130 PAH and Phenols in Water by GCMS			
Organochlorine Pesticides	Melbourne	Sep 28, 2017	7 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Sep 28, 2017	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Melbourne	Sep 28, 2017	28 Days
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			
Cyanide (total)	Melbourne	Sep 28, 2017	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			

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e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	565129
		Phone:	02 8245 0300
		Fax:	
Project Name:	EPPING DD		
Project ID:	54111		

Received:	Sep 26, 2017 5:29 PM
Due:	Oct 4, 2017
Priority:	5 Day
Contact Name:	Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - WA guidelines	CANCELLED	Cyanide (total)	HOLD	Moisture Set	JBS&G Suite 2
elbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
ydney Laboratory - NATA Site # 18217						X					
isbane Laboratory - NATA Site # 20794											
erth Laboratory - NATA Site # 23736											
cternal Laboratory											
o	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
	BH11 0-0.05	Sep 25, 2017		Soil	S17-Se32620				X		
	BH11 0.4-0.5	Sep 25, 2017		Soil	S17-Se32621				X		
	BH11 0.9-1.0	Sep 25, 2017		Soil	S17-Se32622					X	X
	BH11 1.4-1.5	Sep 25, 2017		Soil	S17-Se32623				X		
	BH11 1.9-2.0	Sep 25, 2017		Soil	S17-Se32624				X		
	BH11 2.4-2.5	Sep 25, 2017		Soil	S17-Se32625				X		
	BH11 2.9-3.0	Sep 25, 2017		Soil	S17-Se32626			X		X	X
	BH10 0.12-0.2	Sep 25, 2017		Soil	S17-Se32627			X		X	X
	BH10 0.4-0.5	Sep 25, 2017		Soil	S17-Se32628				X		

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Date Reported:Oct 04, 2017

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Sample Detail						Asbestos - WA guidelines	CANCELLED	Cyanide (total)	HOLD	Moisture Set	JBS&G Suite 2
elbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
ydney Laboratory - NATA Site # 18217						X					
isbane Laboratory - NATA Site # 20794											
erth Laboratory - NATA Site # 23736											
	BH10 0.9-1.0	Sep 25, 2017		Soil	S17-Se32629		X				
	BH09 0.15-0.2	Sep 25, 2017		Soil	S17-Se32630				X		
	BH09 0.4-0.5	Sep 25, 2017		Soil	S17-Se32631				X		
	BH09 0.9-1.0	Sep 25, 2017		Soil	S17-Se32632				X		
	BH08 0.1-0.15	Sep 25, 2017		Soil	S17-Se32633				X		
	BH08 0.4-0.5	Sep 25, 2017		Soil	S17-Se32634				X		
	BH08 0.8-0.9	Sep 25, 2017		Soil	S17-Se32635				X		
	BH07 0.12-0.2	Sep 25, 2017		Soil	S17-Se32636		X				
	BH07 0.4-0.5	Sep 25, 2017		Soil	S17-Se32637			X		X	X
	BH07 0.9-1.0	Sep 25, 2017		Soil	S17-Se32638					X	X
	BH02 0.1-0.2	Sep 25, 2017		Soil	S17-Se32639					X	X
	BH02 0.4-0.5	Sep 25, 2017		Soil	S17-Se32640				X		

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Sample Detail						Asbestos - WA guidelines	CANCELLED	Cyanide (total)	HOLD	Moisture Set	JBS&G Suite 2
elbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
ydney Laboratory - NATA Site # 18217						X					
isbane Laboratory - NATA Site # 20794											
erth Laboratory - NATA Site # 23736											
	BH02 0.9-1.0	Sep 25, 2017		Soil	S17-Se32641					X	X
	BH02 1.4-1.5	Sep 25, 2017		Soil	S17-Se32642				X		
	BH03 0-0.1	Sep 25, 2017		Soil	S17-Se32643				X		
	QC01	Sep 25, 2017		Soil	S17-Se32644			X		X	X
	BH11 0-1.0	Sep 25, 2017		Soil	S17-Se32645	X					
	BH11 1.0-2.0	Sep 25, 2017		Soil	S17-Se32646	X					
	BH11 2.0-3.0	Sep 25, 2017		Soil	S17-Se32647	X					
	BH10 0.12-1.0	Sep 25, 2017		Soil	S17-Se32648	X					
	BH09 0.15-1.0	Sep 25, 2017		Soil	S17-Se32649				X		
	BH07 0.12-1.0	Sep 25, 2017		Soil	S17-Se32650	X					
	BH02 0.1-1.0	Sep 25, 2017		Soil	S17-Se32651	X					
	BH02 1.0-1.7	Sep 25, 2017		Soil	S17-Se32652	X					

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Sample Detail						Asbestos - WA guidelines	CANCELLED	Cyanide (total)	HOLD	Moisture Set	JBS&G Suite 2
elbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X
ydney Laboratory - NATA Site # 18217						X					
isbane Laboratory - NATA Site # 20794											
erth Laboratory - NATA Site # 23736											
	BH03 0.1-0.3	Sep 25, 2017		Soil	S17-Se32653	X					
	QC02	Sep 25, 2017		Soil	S17-Se32654	X					
	TS	Sep 25, 2017		Water	S17-Se32655				X		
	TB	Sep 25, 2017		Water	S17-Se32656				X		
	RINS	Sep 25, 2017		Water	S17-Se32657			X			X
	BH02 0.15-0.2	Sep 25, 2017		Soil	S17-Se32931				X		
	BH10 0.6-0.7	Sep 25, 2017		Soil	S17-Se32932				X		
est Counts						9	2	5	20	8	9

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

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

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

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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							
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							
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Method Blank							
Cyanide (total)	mg/L	< 0.005			0.005	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	%	86			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
BTEX							
Benzene	%	90			70-130	Pass	
Toluene	%	90			70-130	Pass	
Ethylbenzene	%	77			70-130	Pass	
m&p-Xylenes	%	79			70-130	Pass	
Xylenes - Total	%	80			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	111			70-130	Pass	
TRH C6-C10	%	87			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	85			70-130	Pass	
Acenaphthylene	%	87			70-130	Pass	
Anthracene	%	70			70-130	Pass	
Benz(a)anthracene	%	92			70-130	Pass	
Benzo(a)pyrene	%	86			70-130	Pass	
Benzo(b&j)fluoranthene	%	75			70-130	Pass	
Benzo(g.h.i)perylene	%	111			70-130	Pass	
Benzo(k)fluoranthene	%	104			70-130	Pass	
Chrysene	%	96			70-130	Pass	
Dibenz(a.h)anthracene	%	95			70-130	Pass	
Fluoranthene	%	89			70-130	Pass	
Fluorene	%	87			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	95			70-130	Pass	
Naphthalene	%	81			70-130	Pass	
Phenanthrene	%	89			70-130	Pass	
Pyrene	%	89			70-130	Pass	
LCS - % Recovery							
Cyanide (total)	%	110			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	111			80-120	Pass	
Cadmium	%	106			80-120	Pass	
Chromium	%	102			80-120	Pass	
Copper	%	99			80-120	Pass	
Lead	%	103			80-120	Pass	
Mercury	%	95			75-125	Pass	
Nickel	%	109			80-120	Pass	
Zinc	%	110			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M17-Se32007	NCP	%	96			75-125	Pass	
Cadmium	M17-Se32007	NCP	%	81			75-125	Pass	
Chromium	M17-Se32007	NCP	%	83			75-125	Pass	
Copper	P17-Se33249	NCP	%	89			75-125	Pass	
Lead	M17-Se32007	NCP	%	80			75-125	Pass	
Mercury	M17-Se32007	NCP	%	80			70-130	Pass	
Nickel	M17-Se32007	NCP	%	83			75-125	Pass	
Zinc	M17-Se32007	NCP	%	90			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	S17-Se32019	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-Se32019	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S17-Se32019	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S17-Se32019	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S17-Se32019	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S17-Se32019	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S17-Se32019	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-Se32019	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S17-Se32019	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M17-Se32007	NCP	mg/L	0.003	0.003	<1	30%	Pass	
Cadmium	M17-Se32007	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M17-Se32007	NCP	mg/L	0.006	0.006	1.0	30%	Pass	
Copper	M17-Se32007	NCP	mg/L	0.009	0.008	11	30%	Pass	
Lead	M17-Se32007	NCP	mg/L	0.002	0.001	53	30%	Fail	Q15
Mercury	M17-Se32007	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M17-Se32007	NCP	mg/L	0.005	0.004	7.0	30%	Pass	
Zinc	M17-Se32007	NCP	mg/L	0.006	0.006	3.0	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins | mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Nibha Vaidya	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Alex Petridis	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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010429

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54111
PROJECT NAME: Epping DD
DATE NEEDED BY: Std

LABORATORY BATCH NO.:
SAMPLERS: RH
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) RHammond@jbsg.com.au; (3) .....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

565244

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	CEC pH % Clay	Asbestos	TB2	TRH/BTEX	PAH	8 METALS	Cyanide	TB24	BTEX	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
BH04 0.1-0.2	Soil	27-9-17	-	250mL Jar	NA			X									
0.4-0.5						X											
0.9-1.0																	
1.0-1.2																	
1.4-1.6																	
1.9-2.0									X	X	X						
2.4-2.5																	
2.8-3.0								X									
0.1-0.5				500mL Bag			X									X	
BH01 0.2-0.3				250mL Jar + Bag			X	X				X				X	
0.4-0.5				250mL Jar		X											
0.9-1.0																	
1.4-1.5																	
BH06 0.0-0.1				250mL Jar		X		X									
0.0-0.3				500mL Bag			X									X	
DRUM				250mL Jar + Bag									X		X		
BH05 0.2-0.3																	
0.3-0.4								X									
TS/TB	Water													X			

RELINQUISHED BY:
NAME: Roham DATE: 27-9-17
OF: JBS&G
NAME: DATE:
OF:

METHOD OF SHIPMENT:
CONSIGNMENT NOTE NO.
TRANSPORT CO.
CONSIGNMENT NOTE NO.
TRANSPORT CO

RECEIVED BY:
NAME
DATE 27/09
OF: 17:00
NAME: DATE:
OF:

FOR RECEIVING LAB USE ONLY:
COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C
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

010430

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54111

PROJECT NAME: Eneabba

DATE NEEDED BY: STD

LABORATORY BATCH NO.:

SAMPLERS:

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) RHammond@jbsg.com.au; (3) .....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	JB2 Cyanide	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
RINS	water	27-9-19	-	Cyanide, metals, amber & Volatiles		X	X		

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	DATE: 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

eurofins | mgt

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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name:	**JBS & G Australia (NSW) P/L**
Contact name:	Rohan Hammond
Project name:	EPPING DD
Project ID:	54111
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Sep 27, 2017 5:00 PM
Eurofins | mgt reference:	**565244**

Sample information

- ☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 12.8 degrees Celsius.
- ☑ All samples have been received as described on the above COC.
- ☑ COC has been completed correctly.
- ☑ Attempt to chill was evident.
- ☑ Appropriately preserved sample containers have been used.
- ☑ All samples were received in good condition.
- ☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☑ Appropriate sample containers have been used.
- ☑ Sample containers for volatile analysis received with zero headspace.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Rohan Hammond - rhammond@jbsg.com.au.

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NATA # 1261 Site # 18217

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Phone : +61 3 8564 5000
NATA # 1261 Site # 14271

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	565244
		Phone:	02 8245 0300
		Fax:	
Project Name:	EPPING DD		
Project ID:	54111		

Received:	Sep 27, 2017 5:00 PM
Due:	Oct 5, 2017
Priority:	5 Day
Contact Name:	Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Cyanide (total)	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons	JBS&G Suite 2	JBS&G Suite 2A
elbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X	X	X	X	X	X
ydney Laboratory - NATA Site # 18217							X											X
isbane Laboratory - NATA Site # 20794						X												
erth Laboratory - NATA Site # 23736																		
ternal Laboratory																		
o	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
	BH04_0.12-0.2	Sep 27, 2017		Soil	S17-Se33409									X			X	
	BH04_0.4-0.5	Sep 27, 2017		Soil	S17-Se33410	X				X				X	X			
	BH04_1.9-2.0	Sep 27, 2017		Soil	S17-Se33411						X	X	X	X		X		
	BH04_2.8-3.0	Sep 27, 2017		Soil	S17-Se33412									X			X	
	BH04_0.12-0.5	Sep 27, 2017		Soil	S17-Se33413		X											
	BH01_0.2-0.3	Sep 27, 2017		Soil	S17-Se33414		X	X						X			X	
	BH01_0.4-0.5	Sep 27, 2017		Soil	S17-Se33415	X				X				X	X			
	BH06_0-0.1	Sep 27, 2017		Soil	S17-Se33416	X				X				X	X		X	
	BH06_0-0.3	Sep 27, 2017		Soil	S17-Se33417		X											

Sydney
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NATA # 1254 &
Site# 1254

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St	**Report #:**	565244
	Sydney	**Phone:**	02 8245 0300
	NSW 2000	**Fax:**	
Project Name:	EPPING DD		
Project ID:	54111		

Received:	Sep 27, 2017 5:00 PM	
Due:	Oct 5, 2017	
Priority:	5 Day	
Contact Name:	Rohan Hammond	

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Cyanide (total)	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons	JBS&G Suite 2	JBS&G Suite 2A
elbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X	X	X	X	X	X
ydney Laboratory - NATA Site # 18217							X											X
isbane Laboratory - NATA Site # 20794						X												
erth Laboratory - NATA Site # 23736																		
	DRUM	Sep 27, 2017		Soil	S17-Se33418									X				X
	BH05_0.3-0.4	Sep 27, 2017		Soil	S17-Se33419									X			X	
	TS	Sep 27, 2017		Water	S17-Se33420								X					
	TB	Sep 27, 2017		Water	S17-Se33421								X					
	RINS	Sep 27, 2017		Water	S17-Se33422			X									X	
	BH04_0.9-1.0	Sep 27, 2017		Soil	S17-Se33423				X									
	BH04_1.0-1.2	Sep 27, 2017		Soil	S17-Se33424				X									
	BH04_1.4-1.6	Sep 27, 2017		Soil	S17-Se33425				X									
	BH04_2.4-2.5	Sep 27, 2017		Soil	S17-Se33426				X									
	BH01_0.9-1.0	Sep 27, 2017		Soil	S17-Se33427				X									
	BH01_1.4-1.5	Sep 27, 2017		Soil	S17-Se33428				X									
	BH05_0.2-0.3	Sep 27, 2017		Soil	S17-Se33429				X									

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Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**		**Received:**	Sep 27, 2017 5:00 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	565244	**Due:**	Oct 5, 2017
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Rohan Hammond
Project Name:	EPPING DD				
Project ID:	54111				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail	% Clay	Asbestos - WA guidelines	Cyanide (total)	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons	JBS&G Suite 2	JBS&G Suite 2A
elbourne Laboratory - NATA Site # 1254 & 14271			X	X	X	X	X	X	X	X	X	X	X
ydney Laboratory - NATA Site # 18217		X											X
isbane Laboratory - NATA Site # 20794	X												
erth Laboratory - NATA Site # 23736													
st Counts	3	3	2	7	3	1	1	3	9	3	1	6	1

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Rohan Hammond
Report	565244-AID
Project Name	EPPING DD
Project ID	54111
Received Date	Sep 27, 2017
Date Reported	Oct 06, 2017

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w).The examination of large sample sizes(500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction.The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA(friable asbestos) and AF(asbestos fines) then applies where they are able to be quantified by gravimetric procedures.This quantitative screening is not generally applicable to FF(free fibres) and results of Trace Analysis are referred. *NOTE: NATA News March 2014, p.7, states in relation to AS4964: "This is a qualitative method with a nominal reporting limit of 0.01%" and that currently in Australia "there is no validated method available for the quantification of asbestos". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk).* *This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the Western Australia Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, 2009, including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil, June 2011.*

Project Name EPPING DD
Project ID 54111
Date Sampled Sep 27, 2017
Report 565244-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
BH04_0.12-0.5	17-Se33413	Sep 27, 2017	Approximate Sample 767g Sample consisted of: Grey fine grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
BH01_0.2-0.3	17-Se33414	Sep 27, 2017	Approximate Sample 803g Sample consisted of: Dark grey coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
BH06_0-0.3	17-Se33417	Sep 27, 2017	Approximate Sample 294g Sample consisted of: Dark brown fine grain soil and organic debris	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
DRUM	17-Se33418	Sep 27, 2017	Approximate Sample 117g Sample consisted of: Brown fine grain sandy soil	No asbestos detected. Organic fibre detected. No respirable fibres detected.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Sep 27, 2017	Indefinite
Asbestos - LTM-ASB-8020	Sydney	Sep 27, 2017	Indefinite

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NATA # 1261 Site # 20794

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NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
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Project Name: EPPING DD
Project ID: 54111

Order No.:
Report #: 565244
Phone: 02 8245 0300
Fax:

Received: Sep 27, 2017 5:00 PM
Due: Oct 5, 2017
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail	% Clay	Asbestos - WA guidelines	Cyanide (total)	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons	JBS&G Suite 2	JBS&G Suite 2A
Melbourne Laboratory - NATA Site # 1254 & 14271			X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217		X											X
Brisbane Laboratory - NATA Site # 20794	X												
Perth Laboratory - NATA Site # 23736													
External Laboratory													

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID												
1	BH04_0.12-0.2	Sep 27, 2017		Soil	S17-Se33409									X			X	
2	BH04_0.4-0.5	Sep 27, 2017		Soil	S17-Se33410	X				X				X	X			
3	BH04_1.9-2.0	Sep 27, 2017		Soil	S17-Se33411						X	X	X	X		X		
4	BH04_2.8-3.0	Sep 27, 2017		Soil	S17-Se33412									X			X	
5	BH04_0.12-0.5	Sep 27, 2017		Soil	S17-Se33413		X											
6	BH01_0.2-0.3	Sep 27, 2017		Soil	S17-Se33414		X	X						X			X	
7	BH01_0.4-0.5	Sep 27, 2017		Soil	S17-Se33415	X				X				X	X			
8	BH06_0-0.1	Sep 27, 2017		Soil	S17-Se33416	X				X				X	X		X	
9	BH06_0-0.3	Sep 27, 2017		Soil	S17-Se33417		X											

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Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Cyanide (total)	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons	JBS&G Suite 2	JBS&G Suite 2A
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X											X
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
10	DRUM	Sep 27, 2017		Soil	S17-Se33418									X				X
11	BH05_0.3-0.4	Sep 27, 2017		Soil	S17-Se33419									X			X	
12	TS	Sep 27, 2017		Water	S17-Se33420								X					
13	TB	Sep 27, 2017		Water	S17-Se33421								X					
14	RINS	Sep 27, 2017		Water	S17-Se33422			X									X	
15	BH04_0.9-1.0	Sep 27, 2017		Soil	S17-Se33423				X									
16	BH04_1.0-1.2	Sep 27, 2017		Soil	S17-Se33424				X									
17	BH04_1.4-1.6	Sep 27, 2017		Soil	S17-Se33425				X									
18	BH04_2.4-2.5	Sep 27, 2017		Soil	S17-Se33426				X									
19	BH01_0.9-1.0	Sep 27, 2017		Soil	S17-Se33427				X									
20	BH01_1.4-1.5	Sep 27, 2017		Soil	S17-Se33428				X									
21	BH05_0.2-0.3	Sep 27, 2017		Soil	S17-Se33429				X									

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Sample Detail	% Clay	Asbestos - WA guidelines	Cyanide (total)	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons	JBS&G Suite 2	JBS&G Suite 2A
Melbourne Laboratory - NATA Site # 1254 & 14271			X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217		X											X
Brisbane Laboratory - NATA Site # 20794	X												
Perth Laboratory - NATA Site # 23736													
Test Counts	3	3	2	7	3	1	1	3	9	3	1	6	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. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substatntial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Sample Se33417 received was less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N/A	Not applicable
M11	NATA/IANZ accreditation does not cover the performance of this service.

Asbestos Counter/Identifier:

Matthew Quigley	Senior Analyst-Asbestos (NSW)

Authorised by:

Laxman Dias	Senior Analyst-Asbestos (NSW)



Glenn Jackson
National Operations Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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Certificate of Analysis

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Attention: **Rohan Hammond**

Report **565244-S**
Project name EPPING DD
Project ID 54111
Received Date Sep 27, 2017

Client Sample ID			**BH04_0.12-0.2**	**BH04_0.4-0.5**	**BH04_1.9-2.0**	**BH04_2.8-3.0**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S17-Se33409**	**S17-Se33410**	**S17-Se33411**	**S17-Se33412**
Date Sampled			**Sep 27, 2017**	**Sep 27, 2017**	**Sep 27, 2017**	**Sep 27, 2017**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	-	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	-	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	83	-	95	99
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	-	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	-	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5

Client Sample ID			BH04_0.12-0.2	BH04_0.4-0.5	BH04_1.9-2.0	BH04_2.8-3.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S17-Se33409	S17-Se33410	S17-Se33411	S17-Se33412
Date Sampled			Sep 27, 2017	Sep 27, 2017	Sep 27, 2017	Sep 27, 2017
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	107	-	99	120
p-Terphenyl-d14 (surr.)	1	%	114	-	128	122
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Toxaphene	1	mg/kg	< 1	-	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	97	-	-	89
Tetrachloro-m-xylene (surr.)	1	%	110	-	-	103
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	97	-	-	89
Tetrachloro-m-xylene (surr.)	1	%	110	-	-	103

Client Sample ID			BH04_0.12-0.2	BH04_0.4-0.5	BH04_1.9-2.0	BH04_2.8-3.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S17-Se33409	S17-Se33410	S17-Se33411	S17-Se33412
Date Sampled			Sep 27, 2017	Sep 27, 2017	Sep 27, 2017	Sep 27, 2017
Test/Reference	LOR	Unit				
% Clay	1	%	-	11	-	-
Conductivity (1:5 aqueous extract at 25°C)	10	uS/cm	-	18	-	-
pH (1:5 Aqueous extract)	0.1	pH Units	-	5.2	-	-
% Moisture	1	%	7.7	8.8	5.6	9.0
Heavy Metals						
Arsenic	2	mg/kg	< 2	-	6.6	3.5
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	< 0.4
Chromium	5	mg/kg	7.1	-	16	320
Copper	5	mg/kg	< 5	-	13	7.1
Lead	5	mg/kg	7.9	-	13	6.3
Mercury	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	-	< 5	< 5
Zinc	5	mg/kg	10	-	34	21
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	1.6	-	-

Client Sample ID			BH01_0.2-0.3	BH01_0.4-0.5	BH06_0-0.1	DRUM
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S17-Se33414	S17-Se33415	S17-Se33416	S17-Se33418
Date Sampled			Sep 27, 2017	Sep 27, 2017	Sep 27, 2017	Sep 27, 2017
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	-	72	< 50
TRH C29-C36	50	mg/kg	< 50	-	160	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	-	232	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	84	-	88	87
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	-	160	< 100
TRH >C34-C40	100	mg/kg	< 100	-	120	< 100

Client Sample ID			BH01_0.2-0.3	BH01_0.4-0.5	BH06_0-0.1	DRUM
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S17-Se33414	S17-Se33415	S17-Se33416	S17-Se33418
Date Sampled			Sep 27, 2017	Sep 27, 2017	Sep 27, 2017	Sep 27, 2017
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	87	-	98	121
p-Terphenyl-d14 (surr.)	1	%	108	-	97	134
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	-	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	85	-	136	104
Tetrachloro-m-xylene (surr.)	1	%	101	-	113	115

Client Sample ID			BH01_0.2-0.3	BH01_0.4-0.5	BH06_0-0.1	DRUM
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S17-Se33414	S17-Se33415	S17-Se33416	S17-Se33418
Date Sampled			Sep 27, 2017	Sep 27, 2017	Sep 27, 2017	Sep 27, 2017
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	85	-	136	104
Tetrachloro-m-xylene (surr.)	1	%	101	-	113	115
% Clay	1	%	-	20	9.4	-
Conductivity (1:5 aqueous extract at 25°C)	10	uS/cm	-	120	65	-
Cyanide (total)	5	mg/kg	< 5	-	-	-
pH (1:5 Aqueous extract)	0.1	pH Units	-	4.6	5.4	-
% Moisture	1	%	9.3	8.2	28	3.9
Heavy Metals						
Arsenic	2	mg/kg	13	-	2.5	2.0
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	< 0.4
Chromium	5	mg/kg	72	-	7.8	12
Copper	5	mg/kg	28	-	13	10
Lead	5	mg/kg	24	-	18	5.2
Mercury	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Nickel	5	mg/kg	73	-	< 5	5.6
Zinc	5	mg/kg	62	-	39	11
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	2.5	28	-

Client Sample ID			BH05_0.3-0.4
Sample Matrix			Soil
Eurofins | mgt Sample No.			S17-Se33419
Date Sampled			Sep 27, 2017
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	93

Client Sample ID			BH05_0.3-0.4
Sample Matrix			Soil
Eurofins | mgt Sample No.			S17-Se33419
Date Sampled			Sep 27, 2017
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH C6-C10	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	99
p-Terphenyl-d14 (surr.)	1	%	105
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05

Client Sample ID			BH05_0.3-0.4
Sample Matrix			Soil
Eurofins | mgt Sample No.			S17-Se33419
Date Sampled			Sep 27, 2017
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	1	mg/kg	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	108
Tetrachloro-m-xylene (surr.)	1	%	118
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	108
Tetrachloro-m-xylene (surr.)	1	%	118
% Moisture	1	%	10
Heavy Metals			
Arsenic	2	mg/kg	2.8
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	6.6
Copper	5	mg/kg	< 5
Lead	5	mg/kg	19
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	< 5
Zinc	5	mg/kg	24

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
JBS&G Suite 2A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Oct 04, 2017	14 Day
- Method: LTM-ORG-2010 TRH C6-C36			
BTEX	Melbourne	Oct 04, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 04, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 04, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Oct 04, 2017	14 Day
- Method: LTM-ORG-2140 PAH and Phenols in Soils by GCMS			
Organochlorine Pesticides	Melbourne	Oct 04, 2017	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Oct 04, 2017	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Melbourne	Oct 04, 2017	28 Days
- Method: LTM-MET-3030 by ICP-OES (hydride ICP-OES for Mercury)			
% Clay	Brisbane	Oct 06, 2017	6 Day
- Method: LTM-GEN-7040			
Cyanide (total)	Melbourne	Oct 04, 2017	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
pH (1:5 Aqueous extract)	Melbourne	Oct 04, 2017	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Conductivity (1:5 aqueous extract at 25°C)	Melbourne	Oct 04, 2017	7 Day
- Method: LTM-INO-4030			
Cation Exchange Capacity	Melbourne	Oct 05, 2017	180 Days
- Method: LTM-MET-3060 - Cation Exchange Capacity (CEC) & Exchangeable Sodium Percentage (ESP)			
% Moisture	Melbourne	Sep 27, 2017	14 Day
- Method: LTM-GEN-7080 Moisture			

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Project Name: EPPING DD
Project ID: 54111

Order No.:
Report #: 565244
Phone: 02 8245 0300
Fax:

Received: Sep 27, 2017 5:00 PM
Due: Oct 5, 2017
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

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Sample Detail						% Clay	Asbestos - WA guidelines	Cyanide (total)	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons	JBS&G Suite 2	JBS&G Suite 2A
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X											X
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
External Laboratory																		
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
	BH04_0.12-0.2	Sep 27, 2017		Soil	S17-Se33409									X			X	
	BH04_0.4-0.5	Sep 27, 2017		Soil	S17-Se33410	X				X				X	X			
	BH04_1.9-2.0	Sep 27, 2017		Soil	S17-Se33411						X	X	X	X		X		
	BH04_2.8-3.0	Sep 27, 2017		Soil	S17-Se33412									X			X	
	BH04_0.12-0.5	Sep 27, 2017		Soil	S17-Se33413		X											
	BH01_0.2-0.3	Sep 27, 2017		Soil	S17-Se33414		X	X						X			X	
	BH01_0.4-0.5	Sep 27, 2017		Soil	S17-Se33415	X				X				X	X			
	BH06_0-0.1	Sep 27, 2017		Soil	S17-Se33416	X				X				X	X		X	
	BH06_0-0.3	Sep 27, 2017		Soil	S17-Se33417		X											

Date Reported Oct 09, 2017

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NATA # 1261 Site # 18217

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Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St	**Report #:**	565244
	Sydney	**Phone:**	02 8245 0300
	NSW 2000	**Fax:**	
Project Name:	EPPING DD		
Project ID:	54111		

Received:	Sep 27, 2017 5:00 PM	
Due:	Oct 5, 2017	
Priority:	5 Day	
Contact Name:	Rohan Hammond	

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Cyanide (total)	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons	JBS&G Suite 2	JBS&G Suite 2A
elbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X	X	X	X	X	X
ydney Laboratory - NATA Site # 18217							X											X
isbane Laboratory - NATA Site # 20794						X												
erth Laboratory - NATA Site # 23736																		
	DRUM	Sep 27, 2017		Soil	S17-Se33418									X				X
	BH05_0.3-0.4	Sep 27, 2017		Soil	S17-Se33419									X			X	
	TS	Sep 27, 2017		Water	S17-Se33420								X					
	TB	Sep 27, 2017		Water	S17-Se33421								X					
	RINS	Sep 27, 2017		Water	S17-Se33422			X									X	
	BH04_0.9-1.0	Sep 27, 2017		Soil	S17-Se33423				X									
	BH04_1.0-1.2	Sep 27, 2017		Soil	S17-Se33424				X									
	BH04_1.4-1.6	Sep 27, 2017		Soil	S17-Se33425				X									
	BH04_2.4-2.5	Sep 27, 2017		Soil	S17-Se33426				X									
	BH01_0.9-1.0	Sep 27, 2017		Soil	S17-Se33427				X									
	BH01_1.4-1.5	Sep 27, 2017		Soil	S17-Se33428				X									
	BH05_0.2-0.3	Sep 27, 2017		Soil	S17-Se33429				X									

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Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**		**Received:**	Sep 27, 2017 5:00 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	565244	**Due:**	Oct 5, 2017
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Rohan Hammond
Project Name:	EPPING DD				
Project ID:	54111				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail	% Clay	Asbestos - WA guidelines	Cyanide (total)	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons	JBS&G Suite 2	JBS&G Suite 2A
elbourne Laboratory - NATA Site # 1254 & 14271			X	X	X	X	X	X	X	X	X	X	X
ydney Laboratory - NATA Site # 18217		X											X
isbane Laboratory - NATA Site # 20794	X												
erth Laboratory - NATA Site # 23736													
st Counts	3	3	2	7	3	1	1	3	9	3	1	6	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

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

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

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
% Clay	%	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	111			70-130	Pass	
TRH C10-C14	%	74			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	106			70-130	Pass	
Toluene	%	115			70-130	Pass	
Ethylbenzene	%	111			70-130	Pass	
m&p-Xylenes	%	99			70-130	Pass	
Xylenes - Total	%	100			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	103			70-130	Pass	
TRH C6-C10	%	107			70-130	Pass	
TRH >C10-C16	%	77			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	101			70-130	Pass	
Acenaphthylene	%	101			70-130	Pass	
Anthracene	%	101			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benz(a)anthracene	%	100			70-130	Pass	
Benzo(a)pyrene	%	100			70-130	Pass	
Benzo(b&j)fluoranthene	%	92			70-130	Pass	
Benzo(g.h.i)perylene	%	104			70-130	Pass	
Benzo(k)fluoranthene	%	92			70-130	Pass	
Chrysene	%	103			70-130	Pass	
Dibenz(a.h)anthracene	%	91			70-130	Pass	
Fluoranthene	%	91			70-130	Pass	
Fluorene	%	100			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	91			70-130	Pass	
Naphthalene	%	101			70-130	Pass	
Phenanthrene	%	100			70-130	Pass	
Pyrene	%	89			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	105			70-130	Pass	
4.4'-DDE	%	97			70-130	Pass	
4.4'-DDT	%	77			70-130	Pass	
a-BHC	%	98			70-130	Pass	
Aldrin	%	98			70-130	Pass	
b-BHC	%	94			70-130	Pass	
d-BHC	%	101			70-130	Pass	
Dieldrin	%	95			70-130	Pass	
Endosulfan I	%	97			70-130	Pass	
Endosulfan II	%	93			70-130	Pass	
Endosulfan sulphate	%	102			70-130	Pass	
Endrin	%	103			70-130	Pass	
Endrin aldehyde	%	97			70-130	Pass	
Endrin ketone	%	101			70-130	Pass	
g-BHC (Lindane)	%	98			70-130	Pass	
Heptachlor	%	84			70-130	Pass	
Heptachlor epoxide	%	99			70-130	Pass	
Hexachlorobenzene	%	94			70-130	Pass	
Methoxychlor	%	75			70-130	Pass	
LCS - % Recovery							
% Clay	%	114			70-130	Pass	
Cyanide (total)	%	97			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	101			80-120	Pass	
Cadmium	%	105			80-120	Pass	
Chromium	%	105			80-120	Pass	
Copper	%	103			80-120	Pass	
Lead	%	107			80-120	Pass	
Mercury	%	102			75-125	Pass	
Nickel	%	102			80-120	Pass	
Zinc	%	102			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	M17-Se30042	NCP	%	99			70-130	Pass	
TRH C10-C14	M17-Se35035	NCP	%	86			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzene	M17-Se30042	NCP	%	107			70-130	Pass	
Toluene	M17-Se30042	NCP	%	104			70-130	Pass	
Ethylbenzene	M17-Se30042	NCP	%	93			70-130	Pass	
m&p-Xylenes	M17-Se30042	NCP	%	95			70-130	Pass	
o-Xylene	M17-Se30042	NCP	%	93			70-130	Pass	
Xylenes - Total	M17-Se30042	NCP	%	94			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M17-Se30042	NCP	%	124			70-130	Pass	
TRH C6-C10	M17-Se30042	NCP	%	93			70-130	Pass	
TRH >C10-C16	M17-Se35035	NCP	%	89			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	M17-Se34806	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S17-Se33526	NCP	%	97			75-125	Pass	
Cadmium	S17-Se33526	NCP	%	107			75-125	Pass	
Chromium	S17-Se33526	NCP	%	101			75-125	Pass	
Copper	S17-Se33526	NCP	%	104			75-125	Pass	
Lead	S17-Se33526	NCP	%	103			75-125	Pass	
Mercury	S17-Se33526	NCP	%	87			70-130	Pass	
Nickel	S17-Se33526	NCP	%	104			75-125	Pass	
Zinc	S17-Se33526	NCP	%	101			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S17-Se33416	CP	%	89			70-130	Pass	
Acenaphthylene	S17-Se33416	CP	%	94			70-130	Pass	
Anthracene	S17-Se33416	CP	%	84			70-130	Pass	
Benz(a)anthracene	S17-Se33416	CP	%	96			70-130	Pass	
Benzo(a)pyrene	S17-Se33416	CP	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	S17-Se33416	CP	%	98			70-130	Pass	
Benzo(g.h.i)perylene	S17-Se33416	CP	%	96			70-130	Pass	
Benzo(k)fluoranthene	S17-Se33416	CP	%	76			70-130	Pass	
Chrysene	S17-Se33416	CP	%	93			70-130	Pass	
Dibenz(a.h)anthracene	S17-Se33416	CP	%	92			70-130	Pass	
Fluoranthene	S17-Se33416	CP	%	99			70-130	Pass	
Fluorene	S17-Se33416	CP	%	92			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S17-Se33416	CP	%	85			70-130	Pass	
Naphthalene	S17-Se33416	CP	%	93			70-130	Pass	
Phenanthrene	S17-Se33416	CP	%	89			70-130	Pass	
Pyrene	S17-Se33416	CP	%	97			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	S17-Se33416	CP	%	113			70-130	Pass	
4.4'-DDE	S17-Se33416	CP	%	115			70-130	Pass	
4.4'-DDT	S17-Se33416	CP	%	79			70-130	Pass	
a-BHC	S17-Se33416	CP	%	107			70-130	Pass	
Aldrin	S17-Se33416	CP	%	115			70-130	Pass	
b-BHC	S17-Se33416	CP	%	94			70-130	Pass	
d-BHC	S17-Se33416	CP	%	119			70-130	Pass	
Dieldrin	S17-Se33416	CP	%	124			70-130	Pass	
Endosulfan I	S17-Se33416	CP	%	119			70-130	Pass	
Endosulfan II	S17-Se33416	CP	%	114			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	S17-Se33416	CP	%	114			70-130	Pass	
Endrin	S17-Se33416	CP	%	102			70-130	Pass	
Endrin aldehyde	S17-Se33416	CP	%	90			70-130	Pass	
Endrin ketone	S17-Se33416	CP	%	106			70-130	Pass	
g-BHC (Lindane)	S17-Se33416	CP	%	109			70-130	Pass	
Heptachlor	S17-Se33416	CP	%	104			70-130	Pass	
Heptachlor epoxide	S17-Se33416	CP	%	116			70-130	Pass	
Hexachlorobenzene	S17-Se33416	CP	%	108			70-130	Pass	
Methoxychlor	S17-Se33416	CP	%	86			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M17-Se35035	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M17-Se35035	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M17-Se35035	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M17-Se35035	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M17-Se35035	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M17-Se35035	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S17-Se33526	NCP	mg/kg	4.6	4.6	1.0	30%	Pass	
Cadmium	S17-Se33526	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S17-Se33526	NCP	mg/kg	9.2	9.2	<1	30%	Pass	
Copper	S17-Se33526	NCP	mg/kg	10	10	1.0	30%	Pass	
Lead	S17-Se33526	NCP	mg/kg	9.8	9.8	<1	30%	Pass	
Mercury	S17-Se33526	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S17-Se33526	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S17-Se33526	NCP	mg/kg	17	17	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C)	S17-Se33410	CP	uS/cm	18	16	9.0	30%	Pass	
pH (1:5 Aqueous extract)	S17-Se33410	CP	pH Units	5.2	5.2	pass	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S17-Se33411	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-Se33411	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S17-Se33411	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S17-Se33411	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S17-Se33411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S17-Se33411	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S17-Se33411	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-Se33411	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S17-Se33411	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S17-Se33411	CP	%	5.6	6.5	16	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S17-Se33414	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S17-Se33414	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S17-Se33414	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S17-Se33414	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S17-Se33414	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S17-Se33414	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S17-Se33414	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S17-Se33414	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S17-Se33414	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S17-Se33414	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S17-Se33414	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S17-Se33414	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	M17-Se37148	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Clay	S17-Se33415	CP	%	20	23	15	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Nibha Vaidya	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Alex Petridis	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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Certificate of Analysis

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: **Rohan Hammond**

Report **565244-W**
Project name EPPING DD
Project ID 54111
Received Date Sep 27, 2017

Client Sample ID			R20 **TS**	**TB**	**RINS**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-Se33420**	**S17-Se33421**	**S17-Se33422**
Date Sampled			**Sep 27, 2017**	**Sep 27, 2017**	**Sep 27, 2017**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	-	-	< 0.02
TRH C10-C14	0.05	mg/L	-	-	< 0.05
TRH C15-C28	0.1	mg/L	-	-	< 0.1
TRH C29-C36	0.1	mg/L	-	-	< 0.1
TRH C10-36 (Total)	0.1	mg/L	-	-	< 0.1
BTEX					
Benzene	0.001	mg/L	94	< 0.001	< 0.001
Toluene	0.001	mg/L	94	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	88	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	85	< 0.002	< 0.002
o-Xylene	0.001	mg/L	94	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	88	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	122	64	69
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.01	mg/L	-	-	< 0.01
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	-	< 0.02
TRH C6-C10	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
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
Indeno(1.2.3-cd)pyrene	0.001	mg/L	-	-	< 0.001

Client Sample ID			R20TS	TB	RINS
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-Se33420**	**S17-Se33421**	**S17-Se33422**
Date Sampled			**Sep 27, 2017**	**Sep 27, 2017**	**Sep 27, 2017**
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
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	%	-	-	63
p-Terphenyl-d14 (surr.)	1	%	-	-	83
Organochlorine Pesticides					
Chlordanes - Total	0.001	mg/L	-	-	< 0.001
4.4'-DDD	0.0001	mg/L	-	-	< 0.0001
4.4'-DDE	0.0001	mg/L	-	-	< 0.0001
4.4'-DDT	0.0001	mg/L	-	-	< 0.0001
a-BHC	0.0001	mg/L	-	-	< 0.0001
Aldrin	0.0001	mg/L	-	-	< 0.0001
b-BHC	0.0001	mg/L	-	-	< 0.0001
d-BHC	0.0001	mg/L	-	-	< 0.0001
Dieldrin	0.0001	mg/L	-	-	< 0.0001
Endosulfan I	0.0001	mg/L	-	-	< 0.0001
Endosulfan II	0.0001	mg/L	-	-	< 0.0001
Endosulfan sulphate	0.0001	mg/L	-	-	< 0.0001
Endrin	0.0001	mg/L	-	-	< 0.0001
Endrin aldehyde	0.0001	mg/L	-	-	< 0.0001
Endrin ketone	0.0001	mg/L	-	-	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	-	-	< 0.0001
Heptachlor	0.0001	mg/L	-	-	< 0.0001
Heptachlor epoxide	0.0001	mg/L	-	-	< 0.0001
Hexachlorobenzene	0.0001	mg/L	-	-	< 0.0001
Methoxychlor	0.0001	mg/L	-	-	< 0.0001
Toxaphene	0.01	mg/L	-	-	< 0.01
Aldrin and Dieldrin (Total)*	0.0001	mg/L	-	-	< 0.0001
DDT + DDE + DDD (Total)*	0.0001	mg/L	-	-	< 0.0001
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	-	-	< 0.001
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	-	-	< 0.001
Dibutylchlorendate (surr.)	1	%	-	-	68
Tetrachloro-m-xylene (surr.)	1	%	-	-	59
Polychlorinated Biphenyls					
Aroclor-1016	0.001	mg/L	-	-	< 0.001
Aroclor-1221	0.001	mg/L	-	-	< 0.001
Aroclor-1232	0.001	mg/L	-	-	< 0.001
Aroclor-1242	0.001	mg/L	-	-	< 0.001
Aroclor-1248	0.001	mg/L	-	-	< 0.001
Aroclor-1254	0.001	mg/L	-	-	< 0.001
Aroclor-1260	0.001	mg/L	-	-	< 0.001
Total PCB*	0.001	mg/L	-	-	< 0.001
Dibutylchlorendate (surr.)	1	%	-	-	68
Tetrachloro-m-xylene (surr.)	1	%	-	-	59
Cyanide (total)	0.005	mg/L	-	-	< 0.005

Client Sample ID			R20TS	TB	RINS
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-Se33420**	**S17-Se33421**	**S17-Se33422**
Date Sampled			**Sep 27, 2017**	**Sep 27, 2017**	**Sep 27, 2017**
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

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
JBS&G Suite 2A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Oct 05, 2017	7 Day
- Method: LTM-ORG-2010 TRH C6-C36			
BTEX	Melbourne	Oct 03, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 03, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 05, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Oct 05, 2017	7 Day
- Method: LTM-ORG-2130 PAH and Phenols in Water by GCMS			
Organochlorine Pesticides	Melbourne	Oct 05, 2017	7 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Oct 05, 2017	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Melbourne	Oct 03, 2017	28 Days
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			
Cyanide (total)	Melbourne	Oct 03, 2017	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			

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Address: Level 1, 50 Margaret St
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NSW 2000

Project Name: EPPING DD
Project ID: 54111

Order No.:
Report #: 565244
Phone: 02 8245 0300
Fax:

Received: Sep 27, 2017 5:00 PM
Due: Oct 5, 2017
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

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ABN : 50 005 085 521 Telephone : +61 2 9900 8400

Sample Detail						% Clay	Asbestos - WA guidelines	Cyanide (total)	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons	JBS&G Suite 2	JBS&G Suite 2A
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X											X
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 23736																		
External Laboratory																		
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
	BH04_0.12-0.2	Sep 27, 2017		Soil	S17-Se33409									X			X	
	BH04_0.4-0.5	Sep 27, 2017		Soil	S17-Se33410	X				X				X	X			
	BH04_1.9-2.0	Sep 27, 2017		Soil	S17-Se33411						X	X	X	X		X		
	BH04_2.8-3.0	Sep 27, 2017		Soil	S17-Se33412									X			X	
	BH04_0.12-0.5	Sep 27, 2017		Soil	S17-Se33413		X											
	BH01_0.2-0.3	Sep 27, 2017		Soil	S17-Se33414		X	X						X			X	
	BH01_0.4-0.5	Sep 27, 2017		Soil	S17-Se33415	X				X				X	X			
	BH06_0-0.1	Sep 27, 2017		Soil	S17-Se33416	X				X				X	X		X	
	BH06_0-0.3	Sep 27, 2017		Soil	S17-Se33417		X											

Date Reported Oct 09, 2017

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web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St	**Report #:**	565244
	Sydney	**Phone:**	02 8245 0300
	NSW 2000	**Fax:**	
Project Name:	EPPING DD		
Project ID:	54111		

Received:	Sep 27, 2017 5:00 PM	
Due:	Oct 5, 2017	
Priority:	5 Day	
Contact Name:	Rohan Hammond	

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Cyanide (total)	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons	JBS&G Suite 2	JBS&G Suite 2A
elbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X	X	X	X	X	X
ydney Laboratory - NATA Site # 18217							X											X
isbane Laboratory - NATA Site # 20794						X												
erth Laboratory - NATA Site # 23736																		
	DRUM	Sep 27, 2017		Soil	S17-Se33418									X				X
	BH05_0.3-0.4	Sep 27, 2017		Soil	S17-Se33419									X			X	
	TS	Sep 27, 2017		Water	S17-Se33420								X					
	TB	Sep 27, 2017		Water	S17-Se33421								X					
	RINS	Sep 27, 2017		Water	S17-Se33422			X									X	
	BH04_0.9-1.0	Sep 27, 2017		Soil	S17-Se33423				X									
	BH04_1.0-1.2	Sep 27, 2017		Soil	S17-Se33424				X									
	BH04_1.4-1.6	Sep 27, 2017		Soil	S17-Se33425				X									
	BH04_2.4-2.5	Sep 27, 2017		Soil	S17-Se33426				X									
	BH01_0.9-1.0	Sep 27, 2017		Soil	S17-Se33427				X									
	BH01_1.4-1.5	Sep 27, 2017		Soil	S17-Se33428				X									
	BH05_0.2-0.3	Sep 27, 2017		Soil	S17-Se33429				X									

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Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**		**Received:**	Sep 27, 2017 5:00 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	565244	**Due:**	Oct 5, 2017
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Rohan Hammond
Project Name:	EPPING DD				
Project ID:	54111				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail	% Clay	Asbestos - WA guidelines	Cyanide (total)	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons	JBS&G Suite 2	JBS&G Suite 2A
elbourne Laboratory - NATA Site # 1254 & 14271			X	X	X	X	X	X	X	X	X	X	X
ydney Laboratory - NATA Site # 18217		X											X
isbane Laboratory - NATA Site # 20794	X												
erth Laboratory - NATA Site # 23736													
st Counts	3	3	2	7	3	1	1	3	9	3	1	6	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

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

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

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.001			0.001	Pass	
Aroclor-1221	mg/L	< 0.001			0.001	Pass	
Aroclor-1232	mg/L	< 0.001			0.001	Pass	
Aroclor-1242	mg/L	< 0.001			0.001	Pass	
Aroclor-1248	mg/L	< 0.001			0.001	Pass	
Aroclor-1254	mg/L	< 0.001			0.001	Pass	
Aroclor-1260	mg/L	< 0.001			0.001	Pass	
Total PCB*	mg/L	< 0.001			0.001	Pass	
Method Blank							
Cyanide (total)	mg/L	< 0.005			0.005	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	%	96			70-130	Pass	
TRH C10-C14	%	81			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	98			70-130	Pass	
Toluene	%	102			70-130	Pass	
Ethylbenzene	%	83			70-130	Pass	
m&p-Xylenes	%	88			70-130	Pass	
Xylenes - Total	%	88			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	127			70-130	Pass	
TRH C6-C10	%	97			70-130	Pass	
TRH >C10-C16	%	83			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	86			70-130	Pass	
Acenaphthylene	%	90			70-130	Pass	
Anthracene	%	97			70-130	Pass	
Benz(a)anthracene	%	86			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	%	92			70-130	Pass	
Benzo(b&j)fluoranthene	%	85			70-130	Pass	
Benzo(g.h.i)perylene	%	98			70-130	Pass	
Benzo(k)fluoranthene	%	94			70-130	Pass	
Chrysene	%	84			70-130	Pass	
Dibenz(a.h)anthracene	%	90			70-130	Pass	
Fluoranthene	%	78			70-130	Pass	
Fluorene	%	87			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	90			70-130	Pass	
Naphthalene	%	78			70-130	Pass	
Phenanthrene	%	93			70-130	Pass	
Pyrene	%	78			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	89			70-130	Pass	
4.4'-DDD	%	86			70-130	Pass	
4.4'-DDE	%	81			70-130	Pass	
4.4'-DDT	%	102			70-130	Pass	
a-BHC	%	109			70-130	Pass	
Aldrin	%	88			70-130	Pass	
b-BHC	%	109			70-130	Pass	
d-BHC	%	104			70-130	Pass	
Dieldrin	%	90			70-130	Pass	
Endosulfan I	%	122			70-130	Pass	
Endosulfan II	%	94			70-130	Pass	
Endosulfan sulphate	%	110			70-130	Pass	
Endrin	%	109			70-130	Pass	
Endrin aldehyde	%	89			70-130	Pass	
Endrin ketone	%	97			70-130	Pass	
g-BHC (Lindane)	%	106			70-130	Pass	
Heptachlor	%	81			70-130	Pass	
Heptachlor epoxide	%	93			70-130	Pass	
Hexachlorobenzene	%	104			70-130	Pass	
Methoxychlor	%	91			70-130	Pass	
LCS - % Recovery							
Cyanide (total)	%	96			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	97			80-120	Pass	
Cadmium	%	97			80-120	Pass	
Chromium	%	96			80-120	Pass	
Copper	%	97			80-120	Pass	
Lead	%	96			80-120	Pass	
Mercury	%	92			75-125	Pass	
Nickel	%	96			80-120	Pass	
Zinc	%	99			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
BTEX				Result 1					
Benzene	S17-Se33489	NCP	%	92			70-130	Pass	
Toluene	S17-Se33489	NCP	%	97			70-130	Pass	
Ethylbenzene	S17-Se33489	NCP	%	75			70-130	Pass	
m&p-Xylenes	S17-Se33489	NCP	%	83			70-130	Pass	
o-Xylene	S17-Se33489	NCP	%	84			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Xylenes - Total	S17-Se33489	NCP	%	83			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S17-Se33489	NCP	%	95			70-130	Pass	
TRH C10-C14	M17-Se32858	NCP	%	108			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S17-Se33489	NCP	%	87			70-130	Pass	
TRH C6-C10	S17-Se33489	NCP	%	97			70-130	Pass	
TRH >C10-C16	M17-Se32858	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M17-Se36872	NCP	%	108			70-130	Pass	
Acenaphthylene	M17-Se36872	NCP	%	110			70-130	Pass	
Anthracene	M17-Se36872	NCP	%	123			70-130	Pass	
Benz(a)anthracene	M17-Se36872	NCP	%	92			70-130	Pass	
Benzo(a)pyrene	M17-Se36872	NCP	%	123			70-130	Pass	
Benzo(b&j)fluoranthene	M17-Se36872	NCP	%	120			70-130	Pass	
Benzo(g.h.i)perylene	M17-Se36872	NCP	%	124			70-130	Pass	
Benzo(k)fluoranthene	M17-Se36872	NCP	%	120			70-130	Pass	
Chrysene	M17-Se36872	NCP	%	122			70-130	Pass	
Dibenz(a.h)anthracene	M17-Se36872	NCP	%	83			70-130	Pass	
Fluoranthene	M17-Se36872	NCP	%	118			70-130	Pass	
Fluorene	M17-Se36872	NCP	%	112			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M17-Se36872	NCP	%	91			70-130	Pass	
Naphthalene	M17-Se36872	NCP	%	100			70-130	Pass	
Phenanthrene	M17-Se36872	NCP	%	105			70-130	Pass	
Pyrene	M17-Se36872	NCP	%	124			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M17-Oc00943	NCP	%	94			70-130	Pass	
4.4'-DDD	M17-Oc00943	NCP	%	86			70-130	Pass	
4.4'-DDE	M17-Oc00943	NCP	%	84			70-130	Pass	
4.4'-DDT	M17-Oc00943	NCP	%	82			70-130	Pass	
a-BHC	M17-Oc00943	NCP	%	110			70-130	Pass	
Aldrin	M17-Oc00943	NCP	%	93			70-130	Pass	
b-BHC	M17-Oc00943	NCP	%	114			70-130	Pass	
d-BHC	M17-Oc00943	NCP	%	103			70-130	Pass	
Dieldrin	M17-Oc00943	NCP	%	108			70-130	Pass	
Endosulfan I	M17-Oc00943	NCP	%	107			70-130	Pass	
Endosulfan II	M17-Oc00943	NCP	%	112			70-130	Pass	
Endosulfan sulphate	M17-Oc00943	NCP	%	129			70-130	Pass	
Endrin aldehyde	M17-Oc00943	NCP	%	70			70-130	Pass	
Endrin ketone	M17-Oc00943	NCP	%	114			70-130	Pass	
g-BHC (Lindane)	M17-Oc00943	NCP	%	104			70-130	Pass	
Heptachlor	M17-Oc00943	NCP	%	98			70-130	Pass	
Heptachlor epoxide	M17-Oc00943	NCP	%	109			70-130	Pass	
Hexachlorobenzene	M17-Oc00943	NCP	%	109			70-130	Pass	
Methoxychlor	M17-Oc00943	NCP	%	103			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M17-Oc00215	NCP	%	102			75-125	Pass	
Cadmium	M17-Oc00215	NCP	%	100			75-125	Pass	
Chromium	M17-Oc00215	NCP	%	101			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper	M17-Oc00215	NCP	%	98			75-125	Pass	
Lead	M17-Oc00215	NCP	%	100			75-125	Pass	
Mercury	M17-Oc00215	NCP	%	98			70-130	Pass	
Nickel	M17-Oc00215	NCP	%	100			75-125	Pass	
Zinc	M17-Oc00215	NCP	%	97			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	S17-Se33421	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-Se33421	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S17-Se33421	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S17-Se33421	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S17-Se33421	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S17-Se33421	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S17-Se33421	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-Se33421	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S17-Se33421	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S17-Se33422	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M17-Se32857	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M17-Se32857	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M17-Se32857	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-Se33422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S17-Se33422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S17-Se33422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S17-Se33422	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S17-Se33422	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S17-Se33422	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-Se33422	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S17-Se33422	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	M17-Se32857	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M17-Se32857	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M17-Se32857	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Fluoranthene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M17-Se36871	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M17-Oc00853	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4.4'-DDD	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDE	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDT	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
a-BHC	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Aldrin	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
b-BHC	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
d-BHC	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Dieldrin	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan I	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan II	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan sulphate	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin aldehyde	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin ketone	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
g-BHC (Lindane)	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor epoxide	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Hexachlorobenzene	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Methoxychlor	M17-Oc00853	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Toxaphene	M17-Oc00853	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M17-Oc00853	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Aroclor-1221	M17-Oc00853	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Aroclor-1232	M17-Oc00853	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Aroclor-1242	M17-Oc00853	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Aroclor-1248	M17-Oc00853	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Aroclor-1254	M17-Oc00853	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Aroclor-1260	M17-Oc00853	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Total PCB*	M17-Oc00853	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M17-Oc00215	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	M17-Oc00215	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M17-Oc00215	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	M17-Oc00215	NCP	mg/L	0.036	0.035	2.0	30%	Pass	
Lead	M17-Oc00215	NCP	mg/L	0.003	0.003	<1	30%	Pass	
Mercury	M17-Oc00215	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M17-Oc00215	NCP	mg/L	< 0.001	0.001	11	30%	Pass	
Zinc	M17-Oc00215	NCP	mg/L	0.061	0.060	3.0	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Nibha Vaidya	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Alex Petridis	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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CERTIFICATE OF ANALYSIS 176453

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	Rohan Hammond
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**54111 Epping DD**
Number of Samples	2 Soils
Date samples received	26/09/2017
Date completed instructions received	26/09/2017

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	04/10/2017
Date of Issue	03/10/2017

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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.

Asbestos Approved By
Analysed by Asbestos Approved Identifier: Lucy Zhu
Authorised by Asbestos Approved Signatory: Paul Ching

Results Approved By
Dragana Tomas, Senior Chemist
Jeremy Faircloth, Organics Supervisor
Long Pham, Team Leader, Metals
Nick Sarlamis, Inorganics Supervisor
Paul Ching, Senior Analyst

Authorised By



David Springer, General Manager

Asbestos ID - soils NEPM - ASB-001		
Our Reference		176453-2
Your Reference	UNITS	QC02A
Date Sampled		25/09/2017
Type of sample		soil
Date analysed	-	27/09/2017
Sample mass tested	g	817.49
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 Organic fibres detected
Trace Analysis	-	No asbestos detected
Total Asbestos#1	g/kg	<0.1
Asbestos ID in soil <0.1g/kg*	-	Chrysotile
ACM >7mm Estimation*	g	–
FA and AF Estimation*	g	0.0166
ACM >7mm Estimation*	%(w/w)	<0.01
FA and AF Estimation*#2	%(w/w)	0.0020

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		176453-1
Your Reference	UNITS	QC01A
Date Sampled		25/09/2017
Type of sample		soil
Date extracted	-	27/09/2017
Date analysed	-	29/09/2017
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
Total +ve Xylenes	mg/kg	<1
naphthalene	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	88

svTRH (C10-C40) in Soil		
Our Reference		176453-1
Your Reference	UNITS	QC01A
Date Sampled		25/09/2017
Type of sample		soil
Date extracted	-	27/09/2017
Date analysed	-	28/09/2017
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	78

PAHs in Soil		
Our Reference		176453-1
Your Reference	UNITS	QC01A
Date Sampled		25/09/2017
Type of sample		soil
Date extracted	-	27/09/2017
Date analysed	-	27/09/2017
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
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
Total +ve PAH's	mg/kg	<0.05
Surrogate p-Terphenyl-d14	%	83

Organochlorine Pesticides in soil		
Our Reference		176453-1
Your Reference	UNITS	QC01A
Date Sampled		25/09/2017
Type of sample		soil
Date extracted	-	27/09/2017
Date analysed	-	30/09/2017
HCB	mg/kg	<0.1
alpha-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	71

PCBs in Soil		
Our Reference		176453-1
Your Reference	UNITS	QC01A
Date Sampled		25/09/2017
Type of sample		soil
Date extracted	-	27/09/2017
Date analysed	-	30/09/2017
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCLMX	%	71

Acid Extractable metals in soil		
Our Reference		176453-1
Your Reference	UNITS	QC01A
Date Sampled		25/09/2017
Type of sample		soil
Date prepared	-	27/09/2017
Date analysed	-	27/09/2017
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	10
Copper	mg/kg	10
Lead	mg/kg	20
Mercury	mg/kg	<0.1
Nickel	mg/kg	4
Zinc	mg/kg	32

Misc Soil - Inorg		
Our Reference		176453-1
Your Reference	UNITS	QC01A
Date Sampled		25/09/2017
Type of sample		soil
Date prepared	-	29/09/2017
Date analysed	-	29/09/2017
Total Cyanide	mg/kg	<0.5

Moisture			
Our Reference		176453-1	176453-2
Your Reference	UNITS	QC01A	QC02A
Date Sampled		25/09/2017	25/09/2017
Type of sample		soil	soil
Date prepared	-	27/09/2017	27/09/2017
Date analysed	-	28/09/2017	28/09/2017
Moisture	%	8.0	[NT]

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-014	Cyanide - free, total, weak acid dissociable by segmented flow analyser (in line dialysis with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.

Method ID	Methodology Summary
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			27/09/2017	[NT]	[NT]	[NT]	[NT]	27/09/2017	[NT]
Date analysed	-			29/09/2017	[NT]	[NT]	[NT]	[NT]	29/09/2017	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	89	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	89	[NT]
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	[NT]	[NT]	85	[NT]
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	[NT]	[NT]	85	[NT]
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	93	[NT]
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	91	[NT]
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	93	[NT]
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	86	[NT]	[NT]	[NT]	[NT]	90	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			27/09/2017	[NT]	[NT]	[NT]	[NT]	27/09/2017	[NT]
Date analysed	-			28/09/2017	[NT]	[NT]	[NT]	[NT]	28/09/2017	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	106	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	106	[NT]
Surrogate o-Terphenyl	%		Org-003	83	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			27/09/2017	[NT]	[NT]	[NT]	[NT]	27/09/2017	[NT]
Date analysed	-			27/09/2017	[NT]	[NT]	[NT]	[NT]	27/09/2017	[NT]
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	119	[NT]
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	115	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	[NT]	[NT]	[NT]	[NT]	96	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	84	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			27/09/2017	[NT]	[NT]	[NT]	[NT]	27/09/2017	[NT]
Date analysed	-			30/09/2017	[NT]	[NT]	[NT]	[NT]	30/09/2017	[NT]
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	84	[NT]
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	83	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	85	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	87	[NT]
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-005	85	[NT]	[NT]	[NT]	[NT]	74	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
Date extracted	-			27/09/2017	[NT]	[NT]	[NT]	[NT]	27/09/2017	[NT]
Date analysed	-			30/09/2017	[NT]	[NT]	[NT]	[NT]	30/09/2017	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	117	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCLMX	%		Org-006	85	[NT]	[NT]	[NT]	[NT]	75	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date prepared	-			27/09/2017	[NT]	[NT]	[NT]	[NT]	27/09/2017	[NT]
Date analysed	-			27/09/2017	[NT]	[NT]	[NT]	[NT]	27/09/2017	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	110	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	106	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date prepared	-			29/09/2017	[NT]	[NT]	[NT]	[NT]	29/09/2017	[NT]
Date analysed	-			29/09/2017	[NT]	[NT]	[NT]	[NT]	29/09/2017	[NT]
Total Cyanide	mg/kg	0.5	Inorg-014	<0.5	[NT]	[NT]	[NT]	[NT]	104	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

010428

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54111
PROJECT NAME: Epping DD
DATE NEEDED BY: Std

LABORATORY BATCH NO.:
SAMPLERS:
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) RHammond@jbsg.com.au; (3) .....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Asbestos	COMBO 5	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
1 QC01A	Soil	25-9-17	-	250mL Jar - 500mL Bag			X			
2 QC02A	↓	↓	↓	↓		X			X	

ENVIROLAB GROUP
Envirolab Service
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 176453
Date Received: 26/9/17
Time Received: 15:30
Received by: JE
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: Rhammond DATE: 26-9-17 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Kevin Wang DATE: 26/9/17. OF: ELS	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Enviro Sample NSW

From: Nibha Vaidya
Sent: Wednesday, 11 October 2017 7:40 PM
To: Enviro Sample NSW; COC NSW
Subject: **Urgent - 1 DAY TAT - FW: Eurofins | mgt Test Results - Report 566246 : Site EPPING DD (54111)

SR – Urgent analysis on a 1 day TAT please, due tomorrow.

Please refer to Rohan's email below.

5 6 7 1 6 5

M·O

14/10/17

Kind Regards,

Nibha Vaidya
Phone : +61 2 9900 8415
Mobile : +61 499 900 805
Email : NibhaVaidya@eurofins.com

From: Rohan Hammond [mailto:RHammond@jbsg.com.au]
Sent: Wednesday, 11 October 2017 7:36 PM
To: Nibha Vaidya
Subject: Re: Eurofins | mgt Test Results - Report 566246 : Site EPPING DD (54111)

Hi Nibha,

I have just noticed I erroneously provided you with the interlab duplicate's COC.

Can you please schedule:
TS/TB: BTEX
BH01, BH04, BH05 and RINS for the same analytes as QC01-W was scheduled for on 24 hour turn around.
Delivered latest tomorrow evening.

I know it is my obligation to check the SRA as they are sent over, sometimes we get caught up trying to balance numerous jobs. Can you please advise your SR team, when the COC is significantly different from the received samples, that it may be a good idea to call us to confirm the requested analyses.

Kind Regards,
Rohan Hammond

Rohan Hammond | Environmental Consultant | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0430 379 445 | www.jbsg.com.au
Contaminated Land | Groundwater **Remediation** | Auditing and Compliance | Assessments and Approvals | Occupational Hygiene and Monitoring

This message is intended solely for the individual(s) and entity(s) addressed. It is confidential and may contain legally privileged information. The use, copying or distribution of this message or any information it contains, by anyone other than the addressee, is prohibited. If you have received this message in error, please notify the sender by return email at rhammond@jbsg.com.au

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From: NibhaVaidya@eurofins.com <NibhaVaidya@eurofins.com>
Sent: 11 October 2017 19:21:44

010435

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54111
PROJECT NAME: Epiro OD
DATE NEEDED BY: STD
PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) RHammond@jbsg.com.au; (3) .....@jbsg.com.au

LABORATORY BATCH NO.:
SAMPLERS:
QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL

566246

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TPH	BTEX	PAH (LL)	Cyanide	8 Metals	VOCs													TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	NEPM/WA	NOTES.
QC01-WA	Water	4-10-17	—	4xVials, 1xL Class 1xRed, 1x Cyanide		X	X	X	X	X	X															

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: RShamH DATE: 4-10-17 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Vrsula Lang DATE: 4/10 OF: Eurofins MGT	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

010435

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 5411

PROJECT NAME: Epping OD

DATE NEEDED BY: STD

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) RRamsmond@jbsg.com.au; (3) .....@jbsg.com.au

LABORATORY BATCH NO.:

SAMPLERS:

QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL

| SAMPLE ID | MATRIX | DATE | TIME | TYPE & PRESERVATIVE | pH | TRH | BTEX | PAH (LL) | Cyanide | 8 Metals | VOCs | | |

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Rohan Hammond
Project name: ADDITIONAL - EPPING DD
Project ID: 54111
COC number: Not provided
Turn around time: 1 Day
Date/Time received: Oct 11, 2017 5:29 PM
Eurofins | mgt reference: **567165**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 14 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.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Rohan Hammond - rhammond@jbsg.com.au.

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Melbourne
2-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: ADDITIONAL - EPPING DD
Project ID: 54111

Order No.:
Report #: 567165
Phone: 02 8245 0300
Fax:

Received: Oct 11, 2017 5:29 PM
Due: Oct 12, 2017
Priority: 1 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Cyanide (total)	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	BTEX	Volatile Organics	Total Recoverable Hydrocarbons	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	BH01	Oct 04, 2017		Water	S17-Oc12118	X	X		X	X	X	X	
2	BH04	Oct 04, 2017		Water	S17-Oc12119	X	X		X	X	X	X	
3	BH05	Oct 04, 2017		Water	S17-Oc12120	X	X		X	X	X	X	
4	RINSATE	Oct 04, 2017		Water	S17-Oc12121	X	X	X		X	X	X	
5	TB	Oct 04, 2017		Water	S17-Oc12122								X
6	TS	Oct 04, 2017		Water	S17-Oc12123								X
Test Counts						4	4	1	3	4	4	4	2

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Melbourne
2-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1254
Site# 12

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	566246
		Phone:	02 8245 0300
		Fax:	
Project Name:	EPPING DD		
Project ID:	54111		

Received:	Oct 4, 2017 5:29 PM
Due:	Oct 11, 2017
Priority:	5 Day
Contact Name:	Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Cyanide (total)	HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	BTEX	Volatile Organics	Total Recoverable Hydrocarbons
elbourne Laboratory - NATA Site # 1254 & 14271						X						
ydney Laboratory - NATA Site # 18217							X	X	X	X	X	X
isbane Laboratory - NATA Site # 20794												
erth Laboratory - NATA Site # 23736												
cternal Laboratory												
o	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
	QC01-WA	Oct 04, 2017		Water	S17-Oc04486	X		X	X	X	X	X
	BH01	Oct 04, 2017		Water	S17-Oc04536		X					
	BH04	Oct 04, 2017		Water	S17-Oc04537		X					
	BH05	Oct 04, 2017		Water	S17-Oc04538		X					
	RINS	Oct 04, 2017		Water	S17-Oc04539		X					
	TB	Oct 04, 2017		Water	S17-Oc04540		X					
	TS	Oct 04, 2017		Water	S17-Oc04541		X					
est Counts						1	6	1	1	1	1	1

mgt

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Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 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: **Rohan Hammond**

Report **567165-W-V3**
Project name ADDITIONAL - EPPING DD
Project ID 54111
Received Date Oct 11, 2017

Client Sample ID			**BH01**	**BH04**	**BH05**	**RINSATE**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-Oc12118**	**S17-Oc12119**	**S17-Oc12120**	**S17-Oc12121**
Date Sampled			**Oct 04, 2017**	**Oct 04, 2017**	**Oct 04, 2017**	**Oct 04, 2017**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	0.004	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	69	72	89	86
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			BH01	BH04	BH05	RINSATE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Oc12118	S17-Oc12119	S17-Oc12120	S17-Oc12121
Date Sampled			Oct 04, 2017	Oct 04, 2017	Oct 04, 2017	Oct 04, 2017
Test/Reference	LOR	Unit				
Volatile Organics						
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Butanone (MEK)	0.001	mg/L	0.011	0.012	0.003	< 0.001
2-Propanone (Acetone)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzene	0.001	mg/L	0.004	< 0.001	< 0.001	< 0.001
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total MAH*	0.003	mg/L	0.004	< 0.003	< 0.003	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Bromofluorobenzene (surr.)	1	%	69	72	89	86
Toluene-d8 (surr.)	1	%	85	92	86	82

Client Sample ID			BH01	BH04	BH05	RINSATE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Oc12118	S17-Oc12119	S17-Oc12120	S17-Oc12121
Date Sampled			Oct 04, 2017	Oct 04, 2017	Oct 04, 2017	Oct 04, 2017
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Acenaphthylene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Anthracene	0.00005	mg/L	0.00010	< 0.00005	< 0.00005	< 0.00005
Benz(a)anthracene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	0.00010	0.00010
Benzo(b&j)fluoranthene[N07]	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Benzo(g.h.i)perylene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Benzo(k)fluoranthene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Chrysene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Dibenz(a.h)anthracene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Fluoranthene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Fluorene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Indeno(1.2.3-cd)pyrene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Naphthalene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Phenanthrene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Pyrene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Total PAH*	0.00005	mg/L	0.0001	< 0.00005	0.0001	0.0001
2-Fluorobiphenyl (surr.)	1	%	104	[Q09]INT	[Q09]INT	[Q09]INT
p-Terphenyl-d14 (surr.)	1	%	121	[Q09]INT	[Q09]INT	[Q09]INT
Cyanide (total)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Heavy Metals						
Arsenic	0.001	mg/L	-	-	-	< 0.001
Arsenic (filtered)	0.001	mg/L	0.002	< 0.001	0.006	-
Cadmium	0.0002	mg/L	-	-	-	< 0.0002
Cadmium (filtered)	0.0002	mg/L	0.0002	0.0003	0.0002	-
Chromium	0.001	mg/L	-	-	-	< 0.001
Chromium (filtered)	0.001	mg/L	0.003	< 0.001	< 0.001	-
Copper	0.001	mg/L	-	-	-	0.002
Copper (filtered)	0.001	mg/L	0.051	0.026	0.016	-
Lead	0.001	mg/L	-	-	-	< 0.001
Lead (filtered)	0.001	mg/L	0.002	< 0.001	0.006	-
Mercury	0.0001	mg/L	-	-	-	< 0.0001
Mercury (filtered)	0.0001	mg/L	0.0001	< 0.0001	0.0007	-
Nickel	0.001	mg/L	-	-	-	0.002
Nickel (filtered)	0.001	mg/L	0.13	0.23	0.14	-
Zinc	0.005	mg/L	-	-	-	0.008
Zinc (filtered)	0.005	mg/L	0.26	0.56	0.31	-

Client Sample ID			TB	[R20]TS
Sample Matrix			**Water**	**Water**
Eurofins | mgt Sample No.			**S17-Oc12122**	**S17-Oc12123**
Date Sampled			**Oct 04, 2017**	**Oct 04, 2017**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.01	mg/L	< 0.01	77
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	-
TRH C6-C10	0.02	mg/L	< 0.02	100
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	0.02	mg/L	< 0.02	94
BTEX				
Benzene	0.001	mg/L	< 0.001	110
Toluene	0.001	mg/L	< 0.001	97
Ethylbenzene	0.001	mg/L	< 0.001	96
m&p-Xylenes	0.002	mg/L	< 0.002	90
o-Xylene	0.001	mg/L	< 0.001	110
Xylenes - Total	0.003	mg/L	< 0.003	96
4-Bromofluorobenzene (surr.)	1	%	84	84

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 11, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons	Sydney	Oct 11, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Oct 11, 2017	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
BTEX	Sydney	Oct 11, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 11, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Volatile Organics	Sydney	Oct 11, 2017	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Polycyclic Aromatic Hydrocarbons	Sydney	Oct 11, 2017	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Water by GCMS			
Cyanide (total)	Sydney	Oct 12, 2017	14 Day
- Method: E054 Total Cyanide			
Metals M8	Sydney	Oct 11, 2017	28 Day
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			
Metals M8 filtered	Sydney	Oct 12, 2017	28 Day
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			

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Site # 23736

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Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: ADDITIONAL - EPPING DD
Project ID: 54111

Order No.:
Report #: 567165
Phone: 02 8245 0300
Fax:

Received: Oct 11, 2017 5:29 PM
Due: Oct 12, 2017
Priority: 1 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Cyanide (total)	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	BTEX	Volatile Organics	Total Recoverable Hydrocarbons	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	BH01	Oct 04, 2017		Water	S17-Oc12118	X	X		X	X	X	X	
2	BH04	Oct 04, 2017		Water	S17-Oc12119	X	X		X	X	X	X	
3	BH05	Oct 04, 2017		Water	S17-Oc12120	X	X		X	X	X	X	
4	RINSATE	Oct 04, 2017		Water	S17-Oc12121	X	X	X		X	X	X	
5	TB	Oct 04, 2017		Water	S17-Oc12122								X
6	TS	Oct 04, 2017		Water	S17-Oc12123								X
Test Counts						4	4	1	3	4	4	4	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

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

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

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.001			0.001	Pass	
2-Propanone (Acetone)	mg/L	< 0.001			0.001	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.001			0.001	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Benzene	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.001			0.001	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.001			0.001	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
Methylene Chloride	mg/L	< 0.001			0.001	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.001			0.001	Pass	
Vinyl chloride	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.00005			0.00005	Pass	
Acenaphthylene	mg/L	< 0.00005			0.00005	Pass	
Anthracene	mg/L	< 0.00005			0.00005	Pass	
Benz(a)anthracene	mg/L	< 0.00005			0.00005	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00005			0.00005	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00005			0.00005	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00005			0.00005	Pass	
Chrysene	mg/L	< 0.00005			0.00005	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00005			0.00005	Pass	
Fluoranthene	mg/L	< 0.00005			0.00005	Pass	
Fluorene	mg/L	< 0.00005			0.00005	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00005			0.00005	Pass	
Naphthalene	mg/L	< 0.00005			0.00005	Pass	
Phenanthrene	mg/L	< 0.00005			0.00005	Pass	
Pyrene	mg/L	< 0.00005			0.00005	Pass	
Method Blank							
Cyanide (total)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper	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	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	91			70-130	Pass	
Naphthalene	%	107			70-130	Pass	
TRH C6-C10	%	119			70-130	Pass	
TRH C6-C10	%	105			70-130	Pass	
TRH >C10-C16	%	110			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	111			70-130	Pass	
TRH C10-C14	%	112			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	95			70-130	Pass	
Toluene	%	98			70-130	Pass	
Ethylbenzene	%	97			70-130	Pass	
m&p-Xylenes	%	96			70-130	Pass	
o-Xylene	%	97			70-130	Pass	
Xylenes - Total	%	96			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	126			70-130	Pass	
1.1.1-Trichloroethane	%	82			70-130	Pass	
1.2-Dichlorobenzene	%	95			70-130	Pass	
1.2-Dichloroethane	%	117			70-130	Pass	
Benzene	%	105			70-130	Pass	
Ethylbenzene	%	106			70-130	Pass	
m&p-Xylenes	%	107			70-130	Pass	
o-Xylene	%	110			70-130	Pass	
Toluene	%	102			70-130	Pass	
Trichloroethene	%	115			70-130	Pass	
Xylenes - Total	%	108			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	100			70-130	Pass	
Acenaphthylene	%	112			70-130	Pass	
Anthracene	%	121			70-130	Pass	
Benz(a)anthracene	%	121			70-130	Pass	
Benzo(a)pyrene	%	116			70-130	Pass	
Benzo(b&j)fluoranthene	%	115			70-130	Pass	
Benzo(g.h.i)perylene	%	118			70-130	Pass	
Benzo(k)fluoranthene	%	109			70-130	Pass	
Chrysene	%	114			70-130	Pass	
Dibenz(a.h)anthracene	%	99			70-130	Pass	
Fluoranthene	%	116			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluorene	%	112			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	117			70-130	Pass	
Naphthalene	%	103			70-130	Pass	
Phenanthrene	%	119			70-130	Pass	
Pyrene	%	116			70-130	Pass	
LCS - % Recovery							
Cyanide (total)	%	86			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	103			70-130	Pass	
Cadmium	%	98			70-130	Pass	
Chromium	%	97			70-130	Pass	
Copper	%	91			70-130	Pass	
Lead	%	99			70-130	Pass	
Mercury	%	99			70-130	Pass	
Nickel	%	92			70-130	Pass	
Zinc	%	89			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	S17-Oc04041	NCP	%	127			70-130	Pass	
1.1.1-Trichloroethane	S17-Oc04041	NCP	%	93			70-130	Pass	
1.2-Dichlorobenzene	S17-Oc04041	NCP	%	94			70-130	Pass	
1.2-Dichloroethane	S17-Oc04041	NCP	%	112			70-130	Pass	
Trichloroethene	S17-Oc04041	NCP	%	115			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S17-Oc12119	CP	%	92			70-130	Pass	
TRH C6-C10	S17-Oc12119	CP	%	110			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S17-Oc12119	CP	%	103			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S17-Oc12119	CP	%	95			70-130	Pass	
Toluene	S17-Oc12119	CP	%	92			70-130	Pass	
Ethylbenzene	S17-Oc12119	CP	%	97			70-130	Pass	
m&p-Xylenes	S17-Oc12119	CP	%	97			70-130	Pass	
o-Xylene	S17-Oc12119	CP	%	97			70-130	Pass	
Xylenes - Total	S17-Oc12119	CP	%	97			70-130	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	S17-Oc12119	CP	%	85			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S17-Oc11996	NCP	%	91			70-130	Pass	
Cadmium	S17-Oc11996	NCP	%	93			70-130	Pass	
Chromium	S17-Oc11996	NCP	%	91			70-130	Pass	
Copper	S17-Oc11996	NCP	%	90			70-130	Pass	
Lead	S17-Oc11996	NCP	%	94			70-130	Pass	
Mercury	S17-Oc11996	NCP	%	93			70-130	Pass	
Nickel	S17-Oc11996	NCP	%	91			70-130	Pass	
Zinc	S17-Oc11996	NCP	%	90			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S17-Oc11869	NCP	%	87			70-130	Pass	
TRH C6-C10	S17-Oc11869	NCP	%	93			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S17-Oc11869	NCP	%	88			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S17-Oc11869	NCP	%	87			70-130	Pass	
Toluene	S17-Oc11869	NCP	%	85			70-130	Pass	
Ethylbenzene	S17-Oc11869	NCP	%	93			70-130	Pass	
m&p-Xylenes	S17-Oc11869	NCP	%	93			70-130	Pass	
o-Xylene	S17-Oc11869	NCP	%	93			70-130	Pass	
Xylenes - Total	S17-Oc11869	NCP	%	93			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-Oc12118	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S17-Oc12118	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S17-Oc12118	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-Oc12118	CP	mg/L	0.004	0.004	2.0	30%	Pass	
Toluene	S17-Oc12118	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S17-Oc12118	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S17-Oc12118	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S17-Oc12118	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S17-Oc12118	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Propanone (Acetone)	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Chlorotoluene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Allyl chloride	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Bromochloromethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromomethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon disulfide	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon Tetrachloride	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroform	S17-Oc04047	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.2-Dichloroethene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.3-Dichloropropene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromochloromethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromomethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dichlorodifluoromethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iodomethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Isopropyl benzene (Cumene)	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Methylene Chloride	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Styrene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Tetrachloroethene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.2-Dichloroethene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.3-Dichloropropene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichloroethene	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Vinyl chloride	S17-Oc04047	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	S17-Oc12118	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S17-Oc11995	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S17-Oc11995	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S17-Oc11995	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S17-Oc11995	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	S17-Oc11995	NCP	mg/L	0.004	0.003	16	30%	Pass	
Mercury	S17-Oc11995	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S17-Oc11995	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S17-Oc11995	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-Oc10784	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S17-Oc10784	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S17-Oc10784	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-Oc10784	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S17-Oc10784	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S17-Oc10784	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S17-Oc10784	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S17-Oc10784	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S17-Oc10784	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Comments

This report has been revised (V3) to reflect metals retest results for sample S17-Oc12121.

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
Q09	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Nibha Vaidya Analytical Services Manager



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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Certificate of Analysis

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: **Rohan Hammond**

Report **566246-W**
Project name EPPING DD
Project ID 54111
Received Date Oct 04, 2017

Client Sample ID			**QC01-WA**
Sample Matrix			**Water**
Eurofins | mgt Sample No.			**S17-Oc04486**
Date Sampled			**Oct 04, 2017**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 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	%	96
Volatile Organics			
1.1-Dichloroethane	0.001	mg/L	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001
2-Butanone (MEK)	0.001	mg/L	< 0.001
2-Propanone (Acetone)	0.001	mg/L	< 0.001
4-Chlorotoluene	0.001	mg/L	< 0.001
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001
Allyl chloride	0.001	mg/L	< 0.001

Client Sample ID			QC01-WA
Sample Matrix			Water
Eurofins | mgt Sample No.			S17-Oc04486
Date Sampled			Oct 04, 2017
Test/Reference	LOR	Unit	
Volatile Organics			
Benzene	0.001	mg/L	< 0.001
Bromobenzene	0.001	mg/L	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001
Bromoform	0.001	mg/L	< 0.001
Bromomethane	0.001	mg/L	< 0.001
Carbon disulfide	0.001	mg/L	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001
Chloroethane	0.001	mg/L	< 0.001
Chloroform	0.005	mg/L	< 0.005
Chloromethane	0.001	mg/L	< 0.001
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001
Dibromomethane	0.001	mg/L	< 0.001
Dichlorodifluoromethane	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
Iodomethane	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
Methylene Chloride	0.001	mg/L	< 0.001
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001
Trichloroethene	0.001	mg/L	< 0.001
Trichlorofluoromethane	0.001	mg/L	< 0.001
Vinyl chloride	0.001	mg/L	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003
Total MAH*	0.003	mg/L	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005
4-Bromofluorobenzene (surr.)	1	%	96
Toluene-d8 (surr.)	1	%	93
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH C6-C10	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

Client Sample ID			QC01-WA
Sample Matrix			**Water**
Eurofins | mgt Sample No.			**S17-Oc04486**
Date Sampled			**Oct 04, 2017**
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.00005	mg/L	< 0.00005
Acenaphthylene	0.00005	mg/L	< 0.00005
Anthracene	0.00005	mg/L	< 0.00005
Benz(a)anthracene	0.00005	mg/L	< 0.00005
Benzo(a)pyrene	0.00001	mg/L	< 0.00001
Benzo(b&j)fluoranthene[N07]	0.00005	mg/L	< 0.00005
Benzo(g.h.i)perylene	0.00005	mg/L	< 0.00005
Benzo(k)fluoranthene	0.00005	mg/L	< 0.00005
Chrysene	0.00005	mg/L	< 0.00005
Dibenz(a.h)anthracene	0.00005	mg/L	< 0.00005
Fluoranthene	0.00005	mg/L	< 0.00005
Fluorene	0.00005	mg/L	< 0.00005
Indeno(1.2.3-cd)pyrene	0.00005	mg/L	< 0.00005
Naphthalene	0.00005	mg/L	< 0.00005
Phenanthrene	0.00005	mg/L	< 0.00005
Pyrene	0.00005	mg/L	< 0.00005
Total PAH*	0.00005	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	86
p-Terphenyl-d14 (surr.)	1	%	102
Cyanide (total)	0.005	mg/L	< 0.005
Heavy Metals			
Arsenic (filtered)	0.001	mg/L	< 0.001
Cadmium (filtered)	0.0002	mg/L	0.0003
Chromium (filtered)	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	0.009
Lead (filtered)	0.001	mg/L	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel (filtered)	0.001	mg/L	0.088
Zinc (filtered)	0.005	mg/L	0.22

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Oct 05, 2017	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 05, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 05, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Sydney	Oct 05, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Volatile Organics	Sydney	Oct 05, 2017	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Polycyclic Aromatic Hydrocarbons	Sydney	Oct 05, 2017	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Water by GCMS			
Cyanide (total)	Melbourne	Oct 06, 2017	14 Day
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Metals M8 filtered	Sydney	Oct 06, 2017	28 Day
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			

Sydney
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2-5 Kingston Town Close
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NATA # 1261 Site # 14271

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	566246
		Phone:	02 8245 0300
		Fax:	
Project Name:	EPPING DD		
Project ID:	54111		

Received:	Oct 4, 2017 5:29 PM
Due:	Oct 11, 2017
Priority:	5 Day
Contact Name:	Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail	Cyanide (total)	HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	BTEX	Volatile Organics	Total Recoverable Hydrocarbons
elbourne Laboratory - NATA Site # 1254 & 14271	X						
ydney Laboratory - NATA Site # 18217		X	X	X	X	X	X
isbane Laboratory - NATA Site # 20794							
erth Laboratory - NATA Site # 23736							
ternal Laboratory							

o	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						
	QC01-WA	Oct 04, 2017		Water	S17-Oc04486	X		X	X	X	X	X
	BH01	Oct 04, 2017		Water	S17-Oc04536		X					
	BH04	Oct 04, 2017		Water	S17-Oc04537		X					
	BH05	Oct 04, 2017		Water	S17-Oc04538		X					
	RINS	Oct 04, 2017		Water	S17-Oc04539		X					
	TB	Oct 04, 2017		Water	S17-Oc04540		X					
	TS	Oct 04, 2017		Water	S17-Oc04541		X					
st Counts						1	6	1	1	1	1	1

Eurofins | mgt Unit F3, Building F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066
ABN : 50 005 085 521 Telephone : +61 2 9900 8400

Date Reported:Oct 11, 2017

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

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

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

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.001			0.001	Pass	
2-Propanone (Acetone)	mg/L	< 0.001			0.001	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.001			0.001	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.001			0.001	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.001			0.001	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.001			0.001	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorodifluoromethane	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.001			0.001	Pass	
Vinyl chloride	mg/L	< 0.001			0.001	Pass	
Method Blank							
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	< 0.00005			0.00005	Pass	
Acenaphthylene	mg/L	< 0.00005			0.00005	Pass	
Anthracene	mg/L	< 0.00005			0.00005	Pass	
Benz(a)anthracene	mg/L	< 0.00005			0.00005	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00005			0.00005	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00005			0.00005	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00005			0.00005	Pass	
Chrysene	mg/L	< 0.00005			0.00005	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00005			0.00005	Pass	
Fluoranthene	mg/L	< 0.00005			0.00005	Pass	
Fluorene	mg/L	< 0.00005			0.00005	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00005			0.00005	Pass	
Naphthalene	mg/L	< 0.00005			0.00005	Pass	
Phenanthrene	mg/L	< 0.00005			0.00005	Pass	
Pyrene	mg/L	< 0.00005			0.00005	Pass	
Method Blank							
Cyanide (total)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Heavy Metals							
Arsenic (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	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	100			70-130	Pass	
TRH C10-C14	%	94			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	104			70-130	Pass	
Toluene	%	103			70-130	Pass	
Ethylbenzene	%	98			70-130	Pass	
m&p-Xylenes	%	95			70-130	Pass	
o-Xylene	%	93			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Xylenes - Total	%	94			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	128			70-130	Pass	
1.1.1-Trichloroethane	%	93			70-130	Pass	
1.2-Dichlorobenzene	%	95			70-130	Pass	
1.2-Dichloroethane	%	110			70-130	Pass	
Trichloroethene	%	111			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	76			70-130	Pass	
TRH C6-C10	%	106			70-130	Pass	
TRH >C10-C16	%	96			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	100			70-130	Pass	
Acenaphthylene	%	112			70-130	Pass	
Anthracene	%	122			70-130	Pass	
Benz(a)anthracene	%	122			70-130	Pass	
Benzo(a)pyrene	%	95			70-130	Pass	
Benzo(b&j)fluoranthene	%	93			70-130	Pass	
Benzo(g.h.i)perylene	%	114			70-130	Pass	
Benzo(k)fluoranthene	%	96			70-130	Pass	
Chrysene	%	115			70-130	Pass	
Dibenz(a.h)anthracene	%	98			70-130	Pass	
Fluoranthene	%	117			70-130	Pass	
Fluorene	%	112			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	97			70-130	Pass	
Naphthalene	%	102			70-130	Pass	
Phenanthrene	%	120			70-130	Pass	
Pyrene	%	117			70-130	Pass	
LCS - % Recovery							
Cyanide (total)	%	99			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	S17-Oc04041	NCP	%	127			70-130	Pass	
1.1.1-Trichloroethane	S17-Oc04041	NCP	%	93			70-130	Pass	
1.2-Dichlorobenzene	S17-Oc04041	NCP	%	94			70-130	Pass	
1.2-Dichloroethane	S17-Oc04041	NCP	%	112			70-130	Pass	
Trichloroethene	S17-Oc04041	NCP	%	115			70-130	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	M17-Oc05922	NCP	%	103			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S17-Oc04537	CP	%	103			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S17-Oc04537	CP	%	95			70-130	Pass	
Toluene	S17-Oc04537	CP	%	92			70-130	Pass	
Ethylbenzene	S17-Oc04537	CP	%	97			70-130	Pass	
m&p-Xylenes	S17-Oc04537	CP	%	97			70-130	Pass	
o-Xylene	S17-Oc04537	CP	%	97			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Xylenes - Total	S17-Oc04537	CP	%	97			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S17-Oc04537	CP	%	92			70-130	Pass	
TRH C6-C10	S17-Oc04537	CP	%	110			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S17-Oc04486	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S17-Oc04486	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S17-Oc04486	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Propanone (Acetone)	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Chlorotoluene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Allyl chloride	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromomethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon disulfide	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon Tetrachloride	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroform	S17-Oc04486	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.2-Dichloroethene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.3-Dichloropropene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromochloromethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Dibromomethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dichlorodifluoromethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iodomethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Isopropyl benzene (Cumene)	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Methylene Chloride	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Styrene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Tetrachloroethene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.2-Dichloroethene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.3-Dichloropropene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichloroethene	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Vinyl chloride	S17-Oc04486	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-Oc04486	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S17-Oc04486	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	M17-Oc05922	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S17-Oc04536	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-Oc04536	CP	mg/L	0.004	0.004	2.0	30%	Pass	
Toluene	S17-Oc04536	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S17-Oc04536	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S17-Oc04536	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S17-Oc04536	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S17-Oc04536	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-Oc04536	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S17-Oc04536	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Nibha Vaidya	Analytical Services Manager
Huong Le	Senior Analyst-Inorganic (VIC)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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CERTIFICATE OF ANALYSIS 177076

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	Rohan Hammond
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**54111, Epping DD**
Number of Samples	1 Water
Date samples received	05/10/2017
Date completed instructions received	05/10/2017

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	12/10/2017
Date of Issue	11/10/2017

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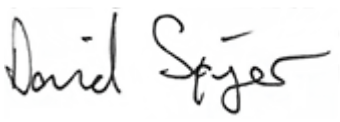
Results Approved By
Jaimie Loa-Kum-Cheung, Senior Chemist
Priya Samarawickrama, Senior Chemist
Steven Luong, Chemist

Authorised By



David Springer, General Manager

VOCs in water		
Our Reference		177076-1
Your Reference	UNITS	QC01_W
Date Sampled		04/10/2017
Type of sample		Water
Date extracted	-	06/10/2017
Date analysed	-	09/10/2017
Dichlorodifluoromethane	µg/L	<10
Chloromethane	µg/L	<10
Vinyl Chloride	µg/L	<10
Bromomethane	µg/L	<10
Chloroethane	µg/L	<10
Trichlorofluoromethane	µg/L	<10
1,1-Dichloroethene	µg/L	<1
Trans-1,2-dichloroethene	µg/L	<1
1,1-dichloroethane	µg/L	<1
Cis-1,2-dichloroethene	µg/L	<1
Bromochloromethane	µg/L	<1
Chloroform	µg/L	<1
2,2-dichloropropane	µg/L	<1
1,2-dichloroethane	µg/L	<1
1,1,1-trichloroethane	µg/L	<1
1,1-dichloropropene	µg/L	<1
Cyclohexane	µg/L	<1
Carbon tetrachloride	µg/L	<1
Benzene	µg/L	<1
Dibromomethane	µg/L	<1
1,2-dichloropropane	µg/L	<1
Trichloroethene	µg/L	<1
Bromodichloromethane	µg/L	<1
trans-1,3-dichloropropene	µg/L	<1
cis-1,3-dichloropropene	µg/L	<1
1,1,2-trichloroethane	µg/L	<1
Toluene	µg/L	<1
1,3-dichloropropane	µg/L	<1
Dibromochloromethane	µg/L	<1
1,2-dibromoethane	µg/L	<1
Tetrachloroethene	µg/L	<1
1,1,1,2-tetrachloroethane	µg/L	<1
Chlorobenzene	µg/L	<1
Ethylbenzene	µg/L	<1
Bromoform	µg/L	<1

VOCs in water		
Our Reference		177076-1
Your Reference	UNITS	QC01_W
Date Sampled		04/10/2017
Type of sample		Water
m+p-xylene	µg/L	<2
Styrene	µg/L	<1
1,1,2,2-tetrachloroethane	µg/L	<1
o-xylene	µg/L	<1
1,2,3-trichloropropane	µg/L	<1
Isopropylbenzene	µg/L	<1
Bromobenzene	µg/L	<1
n-propyl benzene	µg/L	<1
2-chlorotoluene	µg/L	<1
4-chlorotoluene	µg/L	<1
1,3,5-trimethyl benzene	µg/L	<1
Tert-butyl benzene	µg/L	<1
1,2,4-trimethyl benzene	µg/L	<1
1,3-dichlorobenzene	µg/L	<1
Sec-butyl benzene	µg/L	<1
1,4-dichlorobenzene	µg/L	<1
4-isopropyl toluene	µg/L	<1
1,2-dichlorobenzene	µg/L	<1
n-butyl benzene	µg/L	<1
1,2-dibromo-3-chloropropane	µg/L	<1
1,2,4-trichlorobenzene	µg/L	<1
Hexachlorobutadiene	µg/L	<1
1,2,3-trichlorobenzene	µg/L	<1
Surrogate Dibromofluoromethane	%	127
Surrogate toluene-d8	%	100
Surrogate 4-BFB	%	71

vTRH(C6-C10)/BTEXN in Water		
Our Reference	UNITS	177076-1
Your Reference		QC01_W
Date Sampled		04/10/2017
Type of sample		Water
Date extracted	-	06/10/2017
Date analysed	-	09/10/2017
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	127
Surrogate toluene-d8	%	100
Surrogate 4-BFB	%	71

svTRH (C10-C40) in Water		
Our Reference		177076-1
Your Reference	UNITS	QC01_W
Date Sampled		04/10/2017
Type of sample		Water
Date extracted	-	06/10/2017
Date analysed	-	06/10/2017
TRH C_{10} - C_{14}	µg/L	73
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
TRH >C_{10} - C_{16}	µg/L	100
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	100
TRH >C_{16} - C_{34}	µg/L	<100
TRH >C_{34} - C_{40}	µg/L	<100
Surrogate o-Terphenyl	%	102

PAHs in Water - Low Level		
Our Reference		177076-1
Your Reference	UNITS	QC01_W
Date Sampled		04/10/2017
Type of sample		Water
Date extracted	-	06/10/2017
Date analysed	-	06/10/2017
Naphthalene	µg/L	<0.2
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	112

HM in water - dissolved		
Our Reference	UNITS	177076-1
Your Reference		QC01_W
Date Sampled		04/10/2017
Type of sample		Water
Date prepared	-	06/10/2017
Date analysed	-	06/10/2017
Arsenic-Dissolved	µg/L	<1
Cadmium-Dissolved	µg/L	0.2
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	8
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	86
Zinc-Dissolved	µg/L	210

Miscellaneous Inorganics		
Our Reference		177076-1
Your Reference	UNITS	QC01_W
Date Sampled		04/10/2017
Type of sample		Water
Date prepared	-	05/10/2017
Date analysed	-	05/10/2017
Free Cyanide in Water	mg/L	<0.004

Method ID	Methodology Summary
Inorg-014	Cyanide - free, total, weak acid dissociable by segmented flow analyser (in line dialysis with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-013	Water samples are analysed directly by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			06/10/2017	[NT]	[NT]	[NT]	[NT]	06/10/2017	[NT]
Date analysed	-			09/10/2017	[NT]	[NT]	[NT]	[NT]	09/10/2017	[NT]
Dichlorodifluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroform	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]
2,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]
1,1,1-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
1,1-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromomethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Bromodichloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
1,2-dibromoethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromoform	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	µg/L	2	Org-013	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Styrene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
o-xylene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
1,2,3-trichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-013	122	[NT]	[NT]	[NT]	[NT]	107	[NT]
Surrogate toluene-d8	%		Org-013	101	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate 4-BFB	%		Org-013	72	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			06/10/2017	[NT]	[NT]	[NT]	[NT]	06/10/2017	[NT]
Date analysed	-			09/10/2017	[NT]	[NT]	[NT]	[NT]	09/10/2017	[NT]
TRH C_6 - C_9	µg/L	10	Org-016	<10	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	[NT]	[NT]	[NT]	[NT]	104	[NT]
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	102	[NT]
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-016	122	[NT]	[NT]	[NT]	[NT]	107	[NT]
Surrogate toluene-d8	%		Org-016	101	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate 4-BFB	%		Org-016	72	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			06/10/2017	[NT]	[NT]	[NT]	[NT]	06/10/2017	[NT]
Date analysed	-			06/10/2017	[NT]	[NT]	[NT]	[NT]	06/10/2017	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	110	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	107	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	110	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	107	[NT]
Surrogate o-Terphenyl	%		Org-003	98	[NT]	[NT]	[NT]	[NT]	90	[NT]

QUALITY CONTROL: PAHs in Water - Low Level					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			06/10/2017	[NT]	[NT]	[NT]	[NT]	06/10/2017	[NT]
Date analysed	-			06/10/2017	[NT]	[NT]	[NT]	[NT]	06/10/2017	[NT]
Naphthalene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	73	[NT]
Acenaphthylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	79	[NT]
Phenanthrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	83	[NT]
Anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	77	[NT]
Pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	79	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	115	[NT]	[NT]	[NT]	[NT]	92	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date prepared	-			06/10/2017	[NT]	[NT]	[NT]	[NT]	06/10/2017	[NT]
Date analysed	-			06/10/2017	[NT]	[NT]	[NT]	[NT]	06/10/2017	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	[NT]	[NT]	92	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			05/10/2017	[NT]	[NT]	[NT]	[NT]	05/10/2017	[NT]
Date analysed	-			05/10/2017	[NT]	[NT]	[NT]	[NT]	05/10/2017	[NT]
Free Cyanide in Water	mg/L	0.004	Inorg-014	<0.004	[NT]	[NT]	[NT]	[NT]	104	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

010434

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 54111

PROJECT NAME: Epping DD

DATE NEEDED BY: Std

LABORATORY BATCH NO.:

SAMPLERS:

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) RHammond@jbsg.com.au; (3) .....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TRH/BTEX	PAH (LL)	VOCs	Cyanide	Metals	BTEX	PAH	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
BH01	Water	4-10-17	-	1L glass, 4x40mL Vial, 1x Metals		X	X	X	X	X					
BH04				1x Cyanide		X	X	X	X	X					
BH05						X	X	X	X	X					
(1) QC01-W						X	X	X	X	X					
TS/TB				Vials only							X				
RINS						X	X	X	X	X		X			

ENVIROLAB

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

Job No: 177076

Date Received: 5/10

Time Received: 14.45

Received by: DW

Temp: Cool/Ambient

Cooling: Ice/Icepack 13.4

Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: RHammond DATE: 4-10-17 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: DW DATE: 5/10/17 ~~15:45~~ 14.45 OF: EL	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Appendix O Detailed Quality Assurance / Quality Control Documentation

ESDAT QA Checker
Project:54111
Filter: SDG in('567165','565244','565129')

Overview Summary
- Count of Samples
- Summary By Compound
- Count of Results

Holding Times
- Holding Time Errors (0)

Blanks
- Field Blanks
- Detects in Lab Blanks (0)
- SDG's without Storage Blanks (0)
- SDG's without Method Blanks (0)

Duplicates
- Field and Interlab Duplicates
- Lab Duplicates with high RPDs (2)
- Duplicate Samples with incorrect or missing Parent Samples (0)
- Samples at the same Location/Depth/Time not specified as duplicates (0)

Surrogates
- Surrogate Variation > 30% or outside lab LCL or UCL (14)

Lab Control Samples
- SDG's without a Laboratory Control Sample (0)
- Laboratory Control Samples, Error > 30% (0)

Certified and Standard Reference Materials
- Certified Reference Materials - Error > 30% (0)

Matrix Spikes
- SDG's without a Matrix Spike (0)
- Trip Spikes with invalid Control Sample (0)
- Less than 1 matrix spike in 20 samples, or less than 1 matrix duplicate in 20 samples (0)
- Matrix Spike Recoveries less than 70% or greater than 130% or outside lab LCL or UCL (1)
- Trip Spike Recoveries (70% - 130% is acceptable) (15)

Inorganic
- Na + CL > TDS (0)
- BOD > COD (0)
- BOD > COD (0)

Other
- Unit Conversion Problems (0)
- OriginalChemNames Requiring Validation (0)
- Samples with no Results (0)
- Samples associated with Wells which are not specified in the Well Table (0)
- Aborted Analysis (0)

Contents

Count of Samples

Matrix Type	SOIL	WATER
First Sample Date	25/09/2017	25/09/2017
Last Sample Date	27/09/2017	4/10/2017
Sampling Period (days)	3	10
Number of Samples Submitted	28	8
Number of Non QA Samples Submitted	26	3
Number of Field Blanks	0	0
Number of Trip Blanks	0	2
Number of Rinsates	0	3
Number of Field Duplicates	2	0
Number of Trip Spikes	0	2
Number of Lab Duplicates	8	3
Number of LCSs	14	17
Number of CRMs	0	0
Number of Method Blanks	13	19
Number of Storage Blanks	0	0
Number of Matrix Spikes	10	11
Number of Matrix Spike Dupes	0	0

			Num Results	Holding Times (days)				Lab Control Samples			Method and Storage Blanks			Laboratory Duplicates			Surrogates			Matrix,Trip and Compound Spikes			Field,Rinsate and Trip Blanks			Field Duplicates		
Chem_Group	ChemName	Range	Non QA (Normal + Composite)	Volatility Group	Sample to Extraction	Sample to Analysis	Acceptable	Recovery %	Num Reported	Acceptable	Range	Num Reported	Acceptable	Max RPD > EQL x 1	Num Reported	Acceptable	Recovery %	Num Reported	Acceptable	Recovery %	Num Reported	Acceptable	Range	Num Reported	Acceptable	Max RPD > EQL x 1	Num Reported	Acceptable
Asbestos	Approx. Sample Mass		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
	Asbestos from ACM in Soil		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
	Asbestos from FA & AF in Soil		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
Asbestos	Asbestos Reported Result		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
Asbestos	Mass ACM		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
	Mass AF		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
	Mass Asbestos in ACM		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
	Mass Asbestos in AF		8	Other	2	9	Y		0			0			0	N		0			0			0			1	Y
	Mass Asbestos in FA		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
	Mass Asbestos in FA & AF		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
	Mass FA		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
Asbestos - Trace Analysis	ACM - Comment		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
	AF - Comment		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
	FA - Comment		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
	Organic Fibres - Comment		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
	Respirable Fibres - Comment		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
	Synthetic Fibres - Comment		12	Other	0 to 2	9	Y		0			0			0	N		0			0			0			1	Y
BTEX	Benzene	0.1 mg/kg	14	VOC	7	9	Y	106 to 109	2	Y	ND	2	Y		1	Y		0		79 to 107	2	Y		0			1	Y
	Ethylbenzene	0.1 mg/kg	14	VOC	7	9	Y	100 to 111	2	Y	ND	2	Y		0	N		0		80 to 93	2	Y		0			1	Y
	Toluene	0.1 mg/kg	14	VOC	7	9	Y	105 to 115	2	Y	ND	2	Y		0	N		0		82 to 104	2	Y		0			1	Y
	Xylene (m & p)	0.2 mg/kg	14	VOC	7	9	Y	99 to 101	2	Y	ND	2	Y		0	N		0		82 to 95	2	Y		0			1	Y
	Xylene (o)	0.1 mg/kg	14	VOC	7	9	Y		0		ND	2	Y		0	N		0		81 to 93	2	Y		0			1	Y
	Xylene (Total)	0.3 mg/kg	14	VOC	7	9	Y	100 to 102	2	Y	ND	2	Y		0	N		0		81 to 94	2	Y		0			1	Y
Chlorinated Benzenes	Hexachlorobenzene	0.05 mg/kg	13	SVOC	7	9	Y	90 to 94	2	Y	ND	2	Y		0	N		0		100 to 108	2	Y		0			1	Y
EPA VIC IWRG621 (Lab)	Organochlorine Pesticides EPAVic	0.1 mg/kg	13	SVOC	0 to 3	9	Y		0			0			0	N		0			0			0			1	Y
	Other Organochlorine Pesticides EPAVic	0.1 mg/kg	13	SVOC	0 to 3	9	Y		0			0			0	N		0			0			0			1	Y
Ionic Balance	Cation Exchange Capacity	0.05 meq/100g	3	Other	8	9	Y		0			0			0	N		0			0			0			0	N
	EC 1:5 soil:water	10 µS/cm	3	Other	7	9	Y		0			0		12	1	Y		0			0			0			0	N
	pH 1:5 soil:water	0.1 ph Units	3	Other	7	9	Y		0			0		0	1	Y		0			0			0			0	N
Metals & Metalloids	Arsenic (Total)	2 mg/kg	14	Other	7	9	Y	101 to 109	2	Y	ND	2	Y	5	2	Y		0		97 to 97	2	Y		0		88	1	N
	Cadmium	0.4 mg/kg	14	Other	7	9	Y	105 to 114	2	Y	ND	2	Y		2	Y		0		101 to 107	2	Y		0			1	Y
	Chromium (Total)	5 mg/kg	14	Other	7	9	Y	105 to 114	2	Y	ND	2	Y	9	2	Y		0		99 to 101	2	Y		0		95	1	N
	Copper	5 mg/kg	14	Other	7	9	Y	103 to 117	2	Y	ND	2	Y	11	2	Y		0		104 to 105	2	Y		0		80	1	N
	Lead	5 mg/kg	14	Other	7	9	Y	107 to 120	2	Y	ND	2	Y	4	2	Y		0		103 to 106	2	Y		0		49	1	N
	Mercury (Inorganic)	0.1 mg/kg	14	Other	7	9	Y	102 to 116	2	Y	ND	2	Y		2	Y		0		87 to 102	2	Y		0			1	Y
	Nickel	5 mg/kg	14	Other	7	9	Y	102 to 116	2	Y	ND	2	Y	8	2	Y		0		103 to 104	2	Y		0		39	1	N
	Zinc	5 mg/kg	14	Other	7	9	Y	102 to 113	2	Y	ND	2	Y	0	2	Y		0		98 to 101	2	Y		0		47	1	N
Non-Metallic Inorganics	Cyanide	5 mg/kg	4	Other	7	9	Y	92 to 97	2	Y	ND	2	Y		0	N		0		37 to 37	1	N		0			1	Y
Organochlorine Pesticides	4,4-DDE	0.05 mg/kg	13	SVOC	7	9	Y	97 to 100	2	Y	ND	2	Y		3	Y		0		110 to 115	2	Y		0			1	Y
	Aldrin	0.05 mg/kg	13	SVOC	7	9	Y	95 to 98	2	Y	ND	2	Y	18	3	Y		0		103 to 115	2	Y		0			1	Y
	Aldrin + Dieldrin (Sum of Total)	0.05 mg/kg	13	SVOC	0 to 3	9	Y		0			0			0	N		0			0			0			1	Y
	alpha-BHC	0.05 mg/kg	13	SVOC	7	9	Y	96 to 98	2	Y	ND	2	Y		3	Y		0		104 to 107	2	Y		0			1	Y
	beta-BHC	0.05 mg/kg	13	SVOC	7	9	Y	73 to 94	2	Y	ND	2	Y		3	Y		0		81 to 94	2	Y		0			1	Y
	Chlordane	0.1 mg/kg	13	SVOC	7	9	Y		0		ND	2	Y		3	Y		0			0			0			1	Y
	DDD	0.05 mg/kg	13	SVOC	7	9	Y	105 to 123	2	Y	ND	2	Y		3	Y		0		113 to 129	2	Y		0			1	Y
	DDT	0.05 mg/kg	13	SVOC	7	9	Y	77 to 77	2	Y	ND	2	Y		3	Y		0		79 to 85	2	Y		0			1	Y
	DDT+DDE+DDD (Sum of Total)	0.05 mg/kg	13	SVOC	0 to 3	9	Y		0			0			0	N		0			0			0			1	Y
	delta-BHC	0.05 mg/kg	13	SVOC	7	9	Y	94 to 101	2	Y	ND	2	Y		3	Y		0		103 to 119	2	Y		0			1	Y
	Dieldrin	0.05 mg/kg	13	SVOC	7	9	Y	95 to 99	2	Y	ND	2	Y	33	3	N		0		103 to 124	2	Y		0			1	Y
	Endosulfan alpha	0.05 mg/kg	13	SVOC	7	9	Y	97 to 97	2	Y	ND	2	Y		0	N		0		101 to 119	2	Y		0			1	Y
	Endosulfan beta	0.05 mg/kg	13	SVOC	7	9	Y	93 to 96	2	Y	ND	2	Y		3	Y		0		98 to 114	2	Y		0			1	Y
	Endosulfan sulphate	0.05 mg/kg	13	SVOC	7	9	Y	102 to 111	2	Y	ND	2	Y		3	Y		0		113 to 114	2	Y		0			1	Y
	Endrin	0.05 mg/kg	13	SVOC	7	9	Y	101 to 103	2	Y	ND	2	Y		3	Y		0		102 to 117	2	Y		0			1	Y
	Endrin aldehyde	0.05 mg/kg	13	SVOC	7	9	Y	97 to 107	2	Y	ND	2	Y		3	Y		0		88 to 90	2	Y		0			1	Y
	Endrin ketone	0.05 mg/kg	13	SVOC	7	9	Y	101 to 111	2	Y	ND	2	Y		3	Y		0		104 to 106	2	Y		0			1	Y
	Heptachlor	0.05 mg/kg	13	SVOC	7	9	Y	84 to 104	2	Y	ND	2	Y		3	Y		0		104 to 118	2	Y		0			1	Y
	Heptachlor Epoxide	0.05 mg/kg	13	SVOC	7	9	Y	95 to 99	2	Y	ND	2	Y		3	Y		0		116 to 125	2	Y		0			1	Y
	Lindane	0.05 mg/kg	13	SVOC	7	9	Y	95 to 98	2	Y	ND	2	Y		3	Y		0		102 to 109	2	Y		0			1	Y
	Methoxychlor	0.05 mg/kg	13	SVOC	7	9	Y	75 to 92	2	Y	ND	2	Y		3	Y		0		86 to 109	2	Y		0			1	Y
	Toxaphene	1 mg/kg	13	SVOC	7	9	Y		0		ND	2	Y		3	Y		0			0			0			1	Y
Other	% Moisture 103oC	1 %	16	Other	0 to 3	9	Y		0			0		15	2	Y		0			0			0		11	1	Y
Polychlorinated Biphenyls	Aroclor 1016	0.1 mg/kg	13	SVOC	7	9	Y		0		ND	2	Y		3	Y		0			0			0			1	Y
	Aroclor 1221	0.1 mg/kg	13	SVOC	7	9	Y		0		ND	2	Y		3	Y		0			0			0			1	Y
	Aroclor 1232	0.1 mg/kg	13	SVOC	7	9	Y		0		ND	2	Y		3	Y		0			0			0			1	Y
	Aroclor 1242	0.1 mg/kg	13	SVOC	7	9	Y		0		ND	2	Y		3	Y		0			0			0			1	Y
	Aroclor 1248	0.1 mg/kg	13	SVOC	7	9	Y		0		ND	2	Y		3	Y		0			0			0			1	Y
	Aroclor 1254	0.1 mg/kg	13	SVOC	7	9	Y		0		ND	2	Y		3	Y		0			0			0			1	Y
	Aroclor 1260	0.1 mg/kg	13	SVOC	7	9	Y	97 to 97	1	Y	ND	2	Y		3	Y		0		86 to 86	1	Y		0			1	Y
	PCBs (Total)	0.1 mg/kg	13	SVOC	7	9	Y		0		ND	2	Y		0	N		0			0			0			1	Y
Polycyclic Aromatic Hydrocarbons	Acenaphthene	0.5 mg/kg	14	SVOC	7	9	Y	100 to 101	2	Y	ND	2	Y		1	Y		0		89 to 89	1	Y		0			1	Y
	Acenaphthylene	0.5 mg/kg	14	SVOC	7	9	Y	101 to 105	2	Y	ND	2	Y		1	Y		0		94 to 94	1	Y		0			1	Y
	Anthracene	0.5 mg/kg	14	SVOC	7	9	Y	92 to 101	2	Y	ND	2	Y		1	Y		0		84 to 84	1	Y		0			1	Y
	Benz(a)anthracene	0.5 mg/kg	14	SVOC	7	9	Y	100 to 104	2	Y	ND	2	Y		1	Y		0		96 to 96	1	Y		0			1	Y
	Benzo(a)pyrene	0.5 mg/kg	14	SVOC	7	9	Y	89 to 100	2	Y	ND	2	Y		1	Y		0		90 to 90	1	Y		0			1	Y
	Benzo(a)pyrene TEQ (lower bound)[#]	0.5 mg/kg	14	SVOC	0 to 3	9	Y		0			0			0	N		0			0			0			1	Y
	Benzo(a)pyrene TEQ (medium bound)[#]	0.5 mg/kg	14	SVOC	0 to 3	9	Y		0			0			0	N		0			0			0		0	1	Y
	Benzo(a)pyrene TEQ (upper bound)[#]	0.5 mg/kg	14	SVOC	0 to 3	9	Y		0			0			0	N		0			0			0		0	1	Y
	Benzo(b,j)fluoranthene	0.5 mg/kg	14	SVOC	7	9	Y	91 to 92	2	Y	ND	2	Y		1	Y		0		98 to 98	1	Y		0			1	Y
	Benzo(g,h,i)perylene	0.5 mg/kg	14	SVOC	7	9	Y	104 to 121	2	Y	ND	2	Y		1	Y		0		96 to 96	1	Y		0			1	Y
	Benzo(k)fluoranthene	0.5 mg/kg	14	SVOC	7	9	Y	92 to 111	2	Y	ND	2	Y		1	Y		0		76 to 76	1	Y		0			1	Y
	Chrysene	0.5 mg/kg	14	SVOC	7	9	Y	96 to 103	2	Y	ND	2	Y		1	Y		0		93 to 93	1	Y		0			1	Y
	Dibenz(a,h)anthracene	0.5 mg/kg	14	SVOC	7	9	Y	91 to 104	2	Y	ND	2	Y		1	Y		0		92 to 92	1	Y		0			1	Y
	Fluoranthene	0.5 mg/kg	14	SVOC	7	9	Y	91 to 100	2	Y	ND	2	Y		1	Y		0		99 to 99	1	Y		0			1	Y
	Fluorene	0.5 mg/kg	14	SVOC	7	9	Y	100 to 104	2	Y	ND	2	Y		1	Y		0		92 to 92	1	Y		0			1	Y
	Indeno(1,2,3-c,d)pyrene	0.5 mg/kg	14	SVOC	7	9	Y	91 to 97	2	Y	ND	2	Y		1	Y		0		85 to 85	1	Y		0			1	Y
	Naphthalene	0.5 mg/kg	28	VOC	7	9	Y	99 to 103	4	Y	ND	4	Y		1	Y		0		89 to 124	3	Y		0			2	Y

Filter: SDG in('567165','565244','565129')

	PAHs (Total)	0.5 mg/kg	14	SVOC	0 to 3	9	Y		0			0			0	N		0			0			0			1	Y
	Phenanthrene	0.5 mg/kg	14	SVOC	7	9	Y	100 to 109	2	Y	ND	2	Y		1	Y		0		89 to 89	1	Y		0			1	Y
	Pyrene	0.5 mg/kg	14	SVOC	7	9	Y	89 to 101	2	Y	ND	2	Y		1	Y		0		97 to 97	1	Y		0			1	Y
Surrogate	4-Terphenyl-d14		0	SVOC			Y		0			0			0	N	84 to 134	15	N		0			0			0	N
	Surrogate 2-fluorobiphenyl		0	SVOC			Y		0			0			0	N	86 to 121	15	Y		0			0			0	N
	Surrogate 4-BFB		0	VOC			Y		0			0			0	N	71 to 99	15	Y		0			0			0	N
	Surrogate Dibutylchlorendate		0	SVOC			Y		0			0			0	N	85 to 136	14	N		0			0			0	N
	Surrogate TCMX		0	SVOC			Y		0			0			0	N	97 to 130	14	N		0			0			0	N
TPHs (NEPC 1999)	C10-C14 Fraction	20 mg/kg	14	SVOC	7	9	Y	74 to 94	2	Y	ND	2	Y		1	Y		0		86 to 105	2	Y		0			1	Y
	C10-C36 Fraction (Total)	50 mg/kg	14	SVOC	0 to 3	9	Y		0			0			0	N		0			0			0			1	Y
	C15-C28 Fraction	50 mg/kg	14	SVOC	7	9	Y		0		ND	2	Y	65	1	N		0			0			0			1	Y
	C29-C36 Fraction	50 mg/kg	14	SVOC	7	9	Y		0		ND	2	Y		1	Y		0			0			0			1	Y
	C6-C9 Fraction	20 mg/kg	14	VOC	7	9	Y	111 to 117	2	Y	ND	2	Y		1	Y		0		84 to 99	2	Y		0			1	Y
TRHs (NEPC 2013)	>C10-C16 Fraction	50 mg/kg	14	SVOC	7	9	Y	77 to 96	2	Y	ND	2	Y		0	N		0		89 to 105	2	Y		0			1	Y
	>C10-C16 less Naphthalene (F2)	50 mg/kg	14	SVOC	0 to 3	9	Y		0			0			0	N		0			0			0			1	Y
	>C16-C34 Fraction	100 mg/kg	14	SVOC	7	9	Y		0		ND	2	Y		0	N		0			0			0			1	Y
	>C34-C40 Fraction	100 mg/kg	14	SVOC	7	9	Y		0		ND	2	Y		0	N		0			0			0			1	Y
	C6-C10 Fraction	20 mg/kg	14	VOC	7	9	Y	107 to 108	2	Y	ND	2	Y		1	Y		0		79 to 93	2	Y		0			1	Y
	C6-C10 less BTEX (F1)	20 mg/kg	14	VOC	0 to 3	9	Y		0			0			0	N		0			0			0			1	Y
BTEX	Benzene	0.001 mg/L	3	VOC	3 to 7	8 to 9	Y	90 to 105	4	Y	ND	4	Y		2	Y		0		87 to 110	5	Y	ND	5	Y		1	Y
	Ethylbenzene	0.001 mg/L	3	VOC	3 to 7	8 to 9	Y	77 to 106	4	Y	ND	4	Y		0	N		0		75 to 97	5	Y	ND	5	Y		1	Y
	Toluene	0.001 mg/L	3	VOC	3 to 7	8 to 9	Y	90 to 102	4	Y	ND	4	Y		0	N		0		85 to 97	5	Y	ND	5	Y		1	Y
	Xylene (m & p)	0.002 mg/L	3	VOC	3 to 7	8 to 9	Y	79 to 107	4	Y	ND	4	Y		0	N		0		83 to 97	5	Y	ND	5	Y		1	Y
	Xylene (o)	0.001 mg/L	3	VOC	3 to 7	8 to 9	Y	97 to 110	2	Y	ND	4	Y		0	N		0		84 to 110	5	Y	ND	5	Y		1	Y
	Xylene (Total)	0.003 mg/L	3	VOC	3 to 7	8 to 9	Y	80 to 108	4	Y	ND	4	Y		0	N		0		83 to 97	5	Y	ND	5	Y		1	Y
Chlorinated Alkanes	1,1,1,2-tetrachloroethane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	1,1,1-trichloroethane	0.001 mg/L	3	VOC	7	8	Y	82 to 82	1	Y	ND	1	Y		0	N		0		93 to 93	1	Y	ND	1	Y		1	Y
	1,1,2,2-tetrachloroethane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	1,1,2-trichloroethane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	1,1-dichloroethane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	1,2,3-trichloropropane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	1,2-dichloroethane	0.001 mg/L	3	VOC	7	8	Y	117 to 117	1	Y	ND	1	Y		0	N		0		112 to 112	1	Y	ND	1	Y		1	Y
	1,2-dichloropropane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	1,3-dichloropropane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Bromochloromethane	0.001 mg/L	3	Other	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Carbon tetrachloride	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Chloroethane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Chloromethane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Dichlorodifluoromethane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Dichloromethane	0.001 mg/L	3	SVOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Trichlorofluoromethane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
Chlorinated Alkenes	1,1-dichloroethene	0.001 mg/L	3	VOC	7	8	Y	126 to 126	1	Y	ND	1	Y		0	N		0		127 to 127	1	Y	ND	1	Y		1	Y
	3-chloropropene	0.001 mg/L	3	SVOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	4-chlorotoluene	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	cis-1,2-dichloroethene	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	cis-1,3-dichloropropene	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Tetrachloroethene	0.001 mg/L	3	SVOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	trans-1,2-dichloroethene	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	trans-1,3-dichloropropene	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Trichloroethene	0.001 mg/L	3	VOC	7	8	Y	115 to 115	1	Y	ND	1	Y		0	N		0		115 to 115	1	Y	ND	1	Y		1	Y
	Vinyl Chloride	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
Chlorinated Benzenes	1,2-Dichlorobenzene	0.001 mg/L	3	VOC	7	8	Y	95 to 95	1	Y	ND	1	Y		0	N		0		94 to 94	1	Y	ND	1	Y		1	Y
	1,3-dichlorobenzene	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	1,4-dichlorobenzene	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Chlorobenzene	0.001 mg/L	3	Other	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Hexachlorobenzene		0	SVOC	3 to 8	9	Y	104 to 104	1	Y	ND	2	Y		0	N		0		109 to 109	1	Y	ND	2	Y		0	N
EPA VIC IWRG621 (Lab)	Chlorinated Hydrocarbons EPAVic	5 µg/L	3	VOC	7	8	Y		0			0			0	N		0			0		ND	1	Y		1	Y
	Organochlorine Pesticides EPAVic		0	SVOC	0 to 2	9	Y		0			0			0	N		0			0		ND	2	Y		0	N
	Other Chlorinated Hydrocarbons EPAVic	5 µg/L	3	VOC	7	8	Y		0			0			0	N		0			0		ND	1	Y		1	Y
	Other Organochlorine Pesticides EPAVic		0	SVOC	0 to 2	9	Y		0			0			0	N		0			0		ND	2	Y		0	N
Metals & Metalloids	Arsenic (Total)	0.001 mg/L	3	Other	3 to 8	8 to 9	Y	88 to 111	3	Y	ND	4	Y		0	N		0		91 to 102	3	Y	ND	3	Y	143	1	N
	Cadmium	0.0002 mg/L	3	Other	3 to 8	8 to 9	Y	91 to 106	3	Y	ND	4	Y		0	N		0		81 to 100	3	Y	ND	3	Y	40	1	N
	Chromium (Total)	0.001 mg/L	3	Other	3 to 8	8 to 9	Y	90 to 102	3	Y	ND	4	Y		0	N		0		83 to 101	3	Y	ND	3	Y		1	Y
	Copper	0.001 mg/L	3	Other	3 to 8	8 to 9	Y	87 to 99	3	Y	ND	4	Y		0	N		0		89 to 98	3	Y	ND to 0.002 mg/l	3	N	56	1	N
	Lead	0.001 mg/L	3	Other	3 to 8	8 to 9	Y	89 to 103	3	Y	ND	3	Y		0	N		0		80 to 100	3	Y	ND	3	Y	143	1	N
	Mercury (Inorganic)	0.0001 mg/L	3	Other	3 to 8	8 to 9	Y	90 to 95	3	Y	ND	4	Y		0	N		0		80 to 98	3	Y	ND	3	Y	150	1	N
	Nickel	0.001 mg/L	3	Other	3 to 8	8 to 9	Y	90 to 109	3	Y	ND	4	Y		0	N		0		83 to 100	3	Y	ND to 0.002 mg/l	3	N	46	1	N
	Zinc	0.005 mg/L	3	Other	3 to 8	8 to 9	Y	88 to 110	3	Y	ND	4	Y		0	N		0		90 to 97	3	Y	ND to 0.008 mg/l	3	N	34	1	N
Miscellaneous Hydrocarbons	1,2-dibromoethane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	2-Butanone (MEK)	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y	100	1	N
	4-Methyl-2-pentanone (MIBK)	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Bromomethane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Dibromomethane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Iodomethane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
Monocyclic Aromatic Hydrocarbons	1,2,4-trimethyl benzene	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	1,3,5-trimethyl benzene	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Bromobenzene	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Isopropylbenzene	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
	Styrene	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
Non-Metallic Inorganics	Cyanide	0.005 mg/L	3	Other	3 to 8	8 to 9	Y	86 to 110	3	Y	ND	3	Y		1	Y		0		85 to 85	1	Y	ND	3	Y		0	N
Organic Sulfur Compounds	Carbon disulfide	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		1	Y
Organochlorine Pesticides	4,4-DDE		0	SVOC	3 to 8	9	Y	81 to 81	1	Y	ND	1	Y		0	N		0		84 to 84	1	Y	ND	2	Y		0	N
	Aldrin		0	SVOC	3 to 8	9	Y	88 to 88	1	Y	ND	1	Y		0	N		0		93 to 93	1	Y	ND	2	Y		0	N
	Aldrin + Dieldrin (Sum of Total)		0	SVOC	0 to 2	9	Y		0			0			0	N		0			0		ND	2	Y		0	N
	alpha-BHC		0	SVOC	3 to 8	9	Y	109 to 109	1	Y	ND	1	Y		0	N		0		110 to 110	1	Y	ND	2	Y		0	N
	beta-BHC		0	SVOC	3 to 8	9	Y	109 to 109	1	Y	ND	1	Y		0	N		0		114 to 114	1	Y	ND	2	Y		0	N
	Chlordane		0	SVOC	3 to 8	9	Y	89 to 89	1	Y	ND	1	Y		0	N		0		94 to 94	1	Y	ND	2	Y		0	N
	DDD		0	SVOC	3 to 8	9	Y	86 to 86	1	Y	ND	1	Y		0	N		0		86 to 86	1	Y	ND	2	Y		0	N
	DDT		0	SVOC	3 to 8	9	Y	102 to 102	1	Y	ND	1	Y		0	N		0		82 to 82	1	Y	ND	2	Y		0	N
	DDT+DDE+DDD (Sum of Total)		0	SVOC	0 to 2	9	Y		0			0			0	N		0			0		ND	2	Y		0	N
	delta-BHC		0	SVOC	3 to 8	9	Y	104 to 104	1	Y	ND	1	Y		0	N		0		103 to 103	1	Y	ND	2	Y		0	N
	Dieldrin		0	SVOC	3 to 8	9	Y	90 to 90	1	Y	ND	1	Y		0	N		0		108 to 108	1	Y	ND	2	Y		0	N
	Endosulfan alpha		0	SVOC	3 to 8	9	Y	122 to 122	1	Y	ND	1	Y		0	N		0		107 to 107	1	Y	ND	2	Y		0	N

	Endosulfan beta		0	SVOC	3 to 8	9	Y	94 to 94	1	Y	ND	1	Y		0	**N**		0		112 to 112	1	Y	ND	2	Y		0	**N**
	Endosulfan sulphate		0	SVOC	3 to 8	9	Y	110 to 110	1	Y	ND	1	Y		0	**N**		0		129 to 129	1	Y	ND	2	Y		0	**N**
	Endrin		0	SVOC	3 to 8	9	Y	109 to 109	1	Y	ND	1	Y		0	**N**		0			0		ND	2	Y		0	**N**
	Endrin aldehyde		0	SVOC	3 to 8	9	Y	89 to 89	1	Y	ND	1	Y		0	**N**		0		70 to 70	1	**N**	ND	2	Y		0	**N**
	Endrin ketone		0	SVOC	3 to 8	9	Y	97 to 97	1	Y	ND	1	Y		0	**N**		0		114 to 114	1	Y	ND	2	Y		0	**N**
	Heptachlor		0	SVOC	3 to 8	9	Y	81 to 81	1	Y	ND	1	Y		0	**N**		0		98 to 98	1	Y	ND	2	Y		0	**N**
	Heptachlor Epoxide		0	SVOC	3 to 8	9	Y	93 to 93	1	Y	ND	1	Y		0	**N**		0		109 to 109	1	Y	ND	2	Y		0	**N**
	Lindane		0	SVOC	3 to 8	9	Y	106 to 106	1	Y	ND	1	Y		0	**N**		0		104 to 104	1	Y	ND	2	Y		0	**N**
	Methoxychlor		0	SVOC	3 to 8	9	Y	91 to 91	1	Y	ND	1	Y		0	**N**		0		103 to 103	1	Y	ND	2	Y		0	**N**
	Toxaphene		0	SVOC	3 to 8	9	Y		0		ND	1	Y		0	**N**		0			0		ND	2	Y		0	**N**
Polychlorinated Biphenyls	Aroclor 1016		0	SVOC	3 to 8	9	Y		0		ND	1	Y		0	**N**		0			0		ND	2	Y		0	**N**
	Aroclor 1221		0	SVOC	3 to 8	9	Y		0		ND	1	Y		0	**N**		0			0		ND	2	Y		0	**N**
	Aroclor 1232		0	SVOC	3 to 8	9	Y		0		ND	1	Y		0	**N**		0			0		ND	2	Y		0	**N**
	Aroclor 1242		0	SVOC	3 to 8	9	Y		0		ND	1	Y		0	**N**		0			0		ND	2	Y		0	**N**
	Aroclor 1248		0	SVOC	3 to 8	9	Y		0		ND	1	Y		0	**N**		0			0		ND	2	Y		0	**N**
	Aroclor 1254		0	SVOC	3 to 8	9	Y		0		ND	1	Y		0	**N**		0			0		ND	2	Y		0	**N**
	Aroclor 1260		0	SVOC	3 to 8	9	Y		0		ND	1	Y		0	**N**		0			0		ND	2	Y		0	**N**
	PCBs (Total)		0	SVOC	3 to 8	9	Y		0		ND	1	Y		0	**N**		0			0		ND	2	Y		0	**N**
Polycyclic Aromatic Hydrocarbons	Acenaphthene	0.001 mg/L	3	SVOC	3 to 8	8 to 9	Y	85 to 100	3	Y	ND	3	Y		0	**N**		0		108 to 108	1	Y	ND	3	Y		1	Y
	Acenaphthylene	0.001 mg/L	3	SVOC	3 to 8	8 to 9	Y	87 to 112	3	Y	ND	3	Y		0	**N**		0		110 to 110	1	Y	ND	3	Y		1	Y
	Anthracene	0.001 mg/L	3	SVOC	3 to 8	8 to 9	Y	70 to 121	3	**N**	ND	3	Y		0	**N**		0		123 to 123	1	Y	ND	3	Y		1	Y
	Benz(a)anthracene	0.001 mg/L	3	SVOC	3 to 8	8 to 9	Y	86 to 121	3	Y	ND	3	Y		0	**N**		0		92 to 92	1	Y	ND	3	Y		1	Y
	Benzo(a)pyrene	0.001 mg/L	3	SVOC	3 to 8	8 to 9	Y	86 to 116	3	Y	ND	3	Y		0	**N**		0		123 to 123	1	Y	ND	3	Y		1	Y
	Benzo(b,j)fluoranthene	0.001 mg/L	3	SVOC	3 to 8	8 to 9	Y	75 to 115	3	Y	ND	3	Y		0	**N**		0		120 to 120	1	Y	ND	3	Y		1	Y
	Benzo(g,h,i)perylene	0.001 mg/L	3	SVOC	3 to 8	8 to 9	Y	98 to 118	3	Y	ND	3	Y		0	**N**		0		124 to 124	1	Y	ND	3	Y		1	Y
	Benzo(k)fluoranthene	0.001 mg/L	3	SVOC	3 to 8	8 to 9	Y	94 to 109	3	Y	ND	3	Y		0	**N**		0		120 to 120	1	Y	ND	3	Y		1	Y
	Chrysene	0.001 mg/L	3	SVOC	3 to 8	8 to 9	Y	84 to 114	3	Y	ND	3	Y		0	**N**		0		122 to 122	1	Y	ND	3	Y		1	Y
	Dibenz(a,h)anthracene	0.001 mg/L	3	SVOC	3 to 8	8 to 9	Y	90 to 99	3	Y	ND	3	Y		0	**N**		0		83 to 83	1	Y	ND	3	Y		1	Y
	Fluoranthene	0.001 mg/L	3	SVOC	3 to 8	8 to 9	Y	78 to 116	3	Y	ND	3	Y		0	**N**		0		118 to 118	1	Y	ND	3	Y		1	Y
	Fluorene	0.001 mg/L	3	SVOC	3 to 8	8 to 9	Y	87 to 112	3	Y	ND	3	Y		0	**N**		0		112 to 112	1	Y	ND	3	Y		1	Y
	Indeno(1,2,3-c,d)pyrene	0.001 mg/L	3	SVOC	3 to 8	8 to 9	Y	90 to 117	3	Y	ND	3	Y		0	**N**		0		91 to 91	1	Y	ND	3	Y		1	Y
	Naphthalene	0.001 to 0.01 mg/L	6	VOC	3 to 8	8 to 9	Y	78 to 127	7	Y	ND	7	Y		0	**N**		0		77 to 100	5	Y	ND	7	Y		2	Y
	PAHs (Total)	0.001 mg/L	3	SVOC	0 to 7	8 to 9	Y		0			0			0	**N**		0			0		ND	3	Y		1	Y
	Phenanthrene	0.001 mg/L	3	SVOC	3 to 8	8 to 9	Y	89 to 119	3	Y	ND	3	Y		0	**N**		0		105 to 105	1	Y	ND	3	Y		1	Y
	Pyrene	0.001 mg/L	3	SVOC	3 to 8	8 to 9	Y	78 to 116	3	Y	ND	3	Y		0	**N**		0		124 to 124	1	Y	ND	3	Y		1	Y
Solvents	2-Propanone (Acetone)	1 µg/L	3	Other	7	8	Y		0		ND	1	Y		0	**N**		0			0		ND	1	Y		1	Y
Surrogate	4-Terphenyl-d14		0	SVOC			Y		0			0			0	**N**	to 121 *3Not Determ	6	**N**		0			0			0	**N**
	Surrogate 2-fluorobiphenyl		0	SVOC			Y		0			0			0	**N**	to 104 *3Not Determ	6	**N**		0			0			0	**N**
	Surrogate 4-BFB		0	VOC			Y		0			0			0	**N**	64 to 122	10	**N**		0			0			0	**N**
	Surrogate Dibutylchlorendate		0	SVOC			Y		0			0			0	**N**	68 to 114	2	**N**		0			0			0	**N**
	Surrogate TCMX		0	SVOC			Y		0			0			0	**N**	59 to 76	2	**N**		0			0			0	**N**
	Surrogate toluene-d8		0	VOC			Y		0			0			0	**N**	82 to 92	4	Y		0			0			0	**N**
TPHs (NEPC 1999)	C10-C14 Fraction	0.05 mg/L	3	SVOC	3 to 8	8 to 9	Y	81 to 112	2	Y	ND	2	Y		0	**N**		0		108 to 108	1	Y	ND	3	Y	0	1	Y
	C10-C36 Fraction (Total)	0.1 mg/L	3	SVOC	0 to 7	8 to 9	Y		0			0			0	**N**		0			0		ND	3	Y		1	Y
	C15-C28 Fraction	0.1 mg/L	3	SVOC	3 to 8	8 to 9	Y		0		ND	2	Y		0	**N**		0			0		ND	3	Y		1	Y
	C29-C36 Fraction	0.1 mg/L	3	SVOC	3 to 8	8 to 9	Y		0		ND	2	Y		0	**N**		0			0		ND	3	Y		1	Y
	C6-C9 Fraction	0.02 mg/L	3	VOC	3 to 7	8 to 9	Y	86 to 111	3	Y	ND	3	Y		2	Y		0		88 to 103	4	Y	ND	4	Y		1	Y
TRHs (NEPC 2013)	>C10-C16 Fraction	0.05 mg/L	3	SVOC	3 to 8	8 to 9	Y	83 to 110	2	Y	ND	2	Y		0	**N**		0		111 to 111	1	Y	ND	3	Y		1	Y
	>C10-C16 less Naphthalene (F2)	0.05 mg/L	3	SVOC	0 to 7	8 to 9	Y		0			0			0	**N**		0			0		ND	3	Y		1	Y
	>C16-C34 Fraction	0.1 mg/L	3	SVOC	3 to 8	8 to 9	Y		0		ND	2	Y		0	**N**		0			0		ND	3	Y		1	Y
	>C34-C40 Fraction	0.1 mg/L	3	SVOC	3 to 8	8 to 9	Y		0		ND	2	Y		0	**N**		0			0		ND	3	Y		1	Y
	C6-C10 Fraction	0.02 mg/L	3	VOC	3 to 7	8 to 9	Y	87 to 119	4	Y	ND	4	Y		2	Y		0		93 to 110	4	Y	ND	4	Y		1	Y
	C6-C10 less BTEX (F1)	0.02 mg/L	3	VOC	0 to 7	8 to 9	Y		0			0			0	**N**		0			0		ND	4	Y		1	Y
Trihalomethanes	Bromodichloromethane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	**N**		0			0		ND	1	Y		1	Y
	Chloroform	0.005 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	**N**		0			0		ND	1	Y		1	Y
	Dibromochloromethane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	**N**		0			0		ND	1	Y		1	Y
	Tribromomethane	0.001 mg/L	3	VOC	7	8	Y		0		ND	1	Y		0	**N**		0			0		ND	1	Y		1	Y
VOC	Total MA[HP]	0.003 MG/L	3	Other	7	8	Y		0			0			0	**N**		0			0		ND	1	Y		1	Y

Field Blanks (WATER)
Filter: SDG in('567165','565244','565129')

SDG	567165	565129	565244	567165	565244
Field ID	RINSATE	RINS	RINS	TB	TB
Sampled_Date/Time	4/10/2017	25/09/2017	27/09/2017	4/10/2017	27/09/2017
Sample Type	Rinsate	Rinsate	Rinsate	Trip_B	Trip_B

Chem_Group	ChemName	Units	EQL					
BTEX	Benzene	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Ethylbenzene	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Toluene	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Xylene (o)	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Xylene (m & p)	mg/l	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Xylene (Total)	mg/l	0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chlorinated Alkanes	1,1,1,2-tetrachloroethane	mg/l	0.001	<0.001				
	1,1,1-trichloroethane	mg/l	0.001	<0.001				
	1,1,2,2-tetrachloroethane	mg/l	0.001	<0.001				
	1,1,2-trichloroethane	mg/l	0.001	<0.001				
	1,1-dichloroethane	mg/l	0.001	<0.001				
	1,2,3-trichloropropane	mg/l	0.001	<0.001				
	1,2-dichloroethane	mg/l	0.001	<0.001				
	1,2-dichloropropane	mg/l	0.001	<0.001				
	1,3-dichloropropane	mg/l	0.001	<0.001				
	Bromochloromethane	mg/l	0.001	<0.001				
	Carbon tetrachloride	mg/l	0.001	<0.001				
	Chloroethane	mg/l	0.001	<0.001				
	Chloromethane	mg/l	0.001	<0.001				
	Dichlorodifluoromethane	mg/l	0.001	<0.001				
	Dichloromethane	mg/l	0.001	<0.001				
	Trichlorofluoromethane	mg/l	0.001	<0.001				
Chlorinated Alkenes	1,1-dichloroethene	mg/l	0.001	<0.001				
	3-chloropropene	mg/l	0.001	<0.001				
	4-chlorotoluene	mg/l	0.001	<0.001				
	cis-1,2-dichloroethene	mg/l	0.001	<0.001				
	cis-1,3-dichloropropene	mg/l	0.001	<0.001				
	Tetrachloroethene	mg/l	0.001	<0.001				
	trans-1,2-dichloroethene	mg/l	0.001	<0.001				
	trans-1,3-dichloropropene	mg/l	0.001	<0.001				
	Trichloroethene	mg/l	0.001	<0.001				
	Vinyl Chloride	mg/l	0.001	<0.001				
Chlorinated Benzenes	1,2-Dichlorobenzene	mg/l	0.001	<0.001				
	1,3-dichlorobenzene	mg/l	0.001	<0.001				
	1,4-dichlorobenzene	mg/l	0.001	<0.001				
	Chlorobenzene	mg/l	0.001	<0.001				
	Hexachlorobenzene	mg/l	0.0001		<0.0001	<0.0001		
EPA VIC IWRG621 (Lab)	Chlorinated Hydrocarbons EPAVic	µg/l	5	<5				
	Other Chlorinated Hydrocarbons EPAVic	µg/l	5	<5				
	Organochlorine Pesticides EPAVic	µg/l	1		<1	<1		
	Other Organochlorine Pesticides EPAVic	µg/l	1		<1	<1		
Metals & Metalloids	Arsenic (Total)	mg/l	0.001	<0.001	<0.001	<0.001		
	Arsenic (Total) (Filtered)	mg/l	0.001					
	Cadmium	mg/l	0.0002	<0.0002	<0.0002	<0.0002		
	Cadmium (Filtered)	mg/l	0.0002					
	Chromium (Total)	mg/l	0.001	<0.001	<0.001	<0.001		
	Chromium (Total) (Filtered)	mg/l	0.001					
	Copper	mg/l	0.001	**0.002**	<0.001	<0.001		
	Copper (Filtered)	mg/l	0.001					
	Lead	mg/l	0.001	<0.001	<0.001	<0.001		
	Lead (Filtered)	mg/l	0.001					
	Mercury (Inorganic)	mg/l	0.0001	<0.0001	<0.0001	<0.0001		
	Mercury (Inorganic) (Filtered)	mg/l	0.0001					
	Nickel	mg/l	0.001	**0.002**	**0.001**	<0.001		
	Nickel (Filtered)	mg/l	0.001					
	Zinc	mg/l	0.005	**0.008**	**0.006**	<0.005		
	Zinc (Filtered)	mg/l	0.005					
Miscellaneous Hydrocarbons	1,2-dibromoethane	mg/l	0.001	<0.001				
	2-Butanone (MEK)	mg/l	0.001	<0.001				
	4-Methyl-2-pentanone (MIBK)	mg/l	0.001	<0.001				
	Bromomethane	mg/l	0.001	<0.001				
	Dibromomethane	mg/l	0.001	<0.001				
	Iodomethane	mg/l	0.001	<0.001				
Monocyclic Aromatic Hydrocarbons	1,2,4-trimethyl benzene	mg/l	0.001	<0.001				
	1,3,5-trimethyl benzene	mg/l	0.001	<0.001				
	Bromobenzene	mg/l	0.001	<0.001				
	Isopropylbenzene	mg/l	0.001	<0.001				
	Styrene	mg/l	0.001	<0.001				
Non-Metallic Inorganics	Cyanide	mg/l	0.005	<0.005	<0.005	<0.005		
Organic Sulfur Compounds	Carbon disulfide	mg/l	0.001	<0.001				
Organochlorine Pesticides	4,4-DDE	µg/l	0.1		<0.1	<0.1		
	Aldrin	mg/l	0.0001		<0.0001	<0.0001		
	Aldrin + Dieldrin (Sum of Total)	mg/l	0.0001		<0.0001	<0.0001		
	alpha-BHC	mg/l	0.0001		<0.0001	<0.0001		
	beta-BHC	mg/l	0.0001		<0.0001	<0.0001		
	Dieldrin	mg/l	0.0001		<0.0001	<0.0001		
	DDD	mg/l	0.0001		<0.0001	<0.0001		
	DDT	mg/l	0.0001		<0.0001	<0.0001		
	DDT+DDE+DDD (Sum of Total)	mg/l	0.0001		<0.0001	<0.0001		
	Chlordane	mg/l	0.001		<0.001	<0.001		
	delta-BHC	mg/l	0.0001		<0.0001	<0.0001		
	Endosulfan alpha	mg/l	0.0001		<0.0001	<0.0001		
	Endosulfan beta	mg/l	0.0001		<0.0001	<0.0001		
	Endosulfan sulphate	mg/l	0.0001		<0.0001	<0.0001		
	Endrin	mg/l	0.0001		<0.0001	<0.0001		
	Endrin aldehyde	mg/l	0.0001		<0.0001	<0.0001		
	Endrin ketone	mg/l	0.0001		<0.0001	<0.0001		
	Heptachlor	mg/l	0.0001		<0.0001	<0.0001		
	Heptachlor Epoxide	mg/l	0.0001		<0.0001	<0.0001		
	Lindane	mg/l	0.0001		<0.0001	<0.0001		
	Methoxychlor	mg/l	0.0001		<0.0001	<0.0001		
	Toxaphene	mg/l	0.01		<0.01	<0.01		
Polychlorinated Biphenyls	Aroclor 1016	mg/l	0.001		<0.001	<0.001		
	Aroclor 1221	mg/l	0.001		<0.001	<0.001		
	Aroclor 1232	mg/l	0.001		<0.001	<0.001		
	Aroclor 1242	mg/l	0.001		<0.001	<0.001		
	Aroclor 1248	mg/l	0.001		<0.001	<0.001		
	Aroclor 1254	mg/l	0.001		<0.001	<0.001		
	Aroclor 1260	mg/l	0.001		<0.001	<0.001		
	PCBs (Total)	mg/l	0.001		<0.001	<0.001		
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/l	0.001	<0.001	<0.001	<0.001		
	Acenaphthylene	mg/l	0.001	<0.001	<0.001	<0.001		
	Anthracene	mg/l	0.001	<0.001	<0.001	<0.001		
	Benz(a)anthracene	mg/l	0.001	<0.001	<0.001	<0.001		
	Benzo(a)pyrene	mg/l	0.001	<0.001	<0.001	<0.001		
	Benzo(b,j)fluoranthene	mg/l	0.001	<0.001	<0.001	<0.001		
	Benzo(g,h,i)perylene	mg/l	0.001	<0.001	<0.001	<0.001		
	Benzo(k)fluoranthene	mg/l	0.001	<0.001	<0.001	<0.001		
	Chrysene	mg/l	0.001	<0.001	<0.001	<0.001		
	Dibenz(a,h)anthracene	mg/l	0.001	<0.001	<0.001	<0.001		
	Fluoranthene	mg/l	0.001	<0.001	<0.001	<0.001		
	Fluorene	mg/l	0.001	<0.001	<0.001	<0.001		
	Indeno(1,2,3-c,d)pyrene	mg/l	0.001	<0.001	<0.001	<0.001		
	Naphthalene	mg/l	0.001	<0.01	<0.01	<0.01	<0.01	
	Phenanthrene	mg/l	0.001	<0.001	<0.001	<0.001		
	Pyrene	mg/l	0.001	<0.001	<0.001	<0.001		
	PAHs (Total)	mg/l	0.001	<0.001	<0.001	<0.001		
Solvents	2-Propanone (Acetone)	µg/l	1	<1				
TPHs (NEPC 1999)	C6-C9 Fraction	mg/l	0.02	<0.02	<0.02	<0.02	<0.02	
	C10-C14 Fraction	mg/l	0.05	<0.05	<0.05	<0.05		
	C15-C28 Fraction	mg/l	0.1	<0.1	<0.1	<0.1		
	C29-C36 Fraction	mg/l	0.1	<0.1	<0.1	<0.1		
	C10-C36 Fraction (Total)	mg/l	0.1	<0.1	<0.1	<0.1		
TRHs (NEPC 2013)	>C10-C16 Fraction	mg/l	0.05	<0.05	<0.05	<0.05		
	>C16-C34 Fraction	mg/l	0.1	<0.1	<0.1	<0.1		
	>C34-C40 Fraction	mg/l	0.1	<0.1	<0.1	<0.1		
	>C10-C16 less Naphthalene (F2)	mg/l	0.05	<0.05	<0.05	<0.05		
	C6-C10 Fraction	mg/l	0.02	<0.02	<0.02	<0.02	<0.02	
	C6-C10 less BTEX (F1)	mg/l	0.02	<0.02	<0.02	<0.02	<0.02	
Trihalomethanes	Bromodichloromethane	mg/l	0.001	<0.001				
	Chloroform	mg/l	0.005	<0.005				
	Dibromochloromethane	mg/l	0.001	<0.001				
	Tribromomethane	mg/l	0.001	<0.001				
VOC	Total MAH*	mg/l	0.003	<0.003				

Field Duplicates (SOIL)
Filter: SDG in('567165','565244','565129')

SDG	565129	565129		565129	565129		565129	ENVIROLAB 2017-09-26T00:00:00		565129	ENVIROLAB 2017-09-26T00:00:00	
Field ID	BH11 2.9-3.0	OC01	RPD	BH11 2.9-3.0	OC02	RPD	BH11 2.9-3.0	OC01A	RPD	BH11 2.0-3.0	OC02A	RPD
Sampled Date/Time	25/09/2017	25/09/2017		25/09/2017	25/09/2017		25/09/2017	25/09/2017		25/09/2017	25/09/2017	

Chem_Gr	ChemName	Units	EQL													
EPA VIC N	Organochlorine Pesticides EPAVic	mg/kg	0.1	<0.1	<0.1	0				<0.1						
	Other Organochlorine Pesticides EPAVic	mg/kg	0.1	<0.1	<0.1	0				<0.1						
Metals & M	Arsenic (Total)	mg/kg	2 (Primary): 4 (Interlab)	**3.9**	**10.0**	**88**				3.9	<4.0	0				
	Cadmium	mg/kg	0.4	<0.4	<0.4	0				<0.4	<0.4	0				
	Chromium (Total)	mg/kg	5 (Primary): 1 (Interlab)	**11.0**	**31.0**	**95**				11.0	10.0	10				
	Copper	mg/kg	5 (Primary): 1 (Interlab)	**9.9**	**23.0**	**80**				9.9	10.0	1				
	Lead	mg/kg	5 (Primary): 1 (Interlab)	**28.0**	**46.0**	**49**				**28.0**	**20.0**	**33**				
	Mercury (Inorganic)	mg/kg	0.1	<0.1	<0.1	0				<0.1	<0.1	0				
	Nickel	mg/kg	5 (Primary): 1 (Interlab)	**<5.0**	**7.4**	**39**				<5.0	4.0	0				
	Zinc	mg/kg	5 (Primary): 1 (Interlab)	**36.0**	**58.0**	**47**				36.0	32.0	12				
Non-Metal	Cyanide	mg/kg	5 (Primary): 0.5 (Interlab	<5.0	<5.0	0				<5.0	<0.5	0				
TPHs (NE	C6-C9 Fraction	mg/kg	20 (Primary): 25 (Interlab	<20.0	<20.0	0				<20.0	<25.0	0				
	C10-C14 Fraction	mg/kg	20 (Primary): 50 (Interlab	<20.0	<20.0	0				<20.0	<50.0	0				
	C15-C28 Fraction	mg/kg	50 (Primary): 100 (Interla	<50.0	<50.0	0				<50.0	<100.0	0				
	C29-C36 Fraction	mg/kg	50 (Primary): 100 (Interla	<50.0	<50.0	0				<50.0	<100.0	0				
	C10-C36 Fraction (Total)	mg/kg	50	<50.0	<50.0	0				<50.0						
TRHs (NE	>C10-C16 Fraction	mg/kg	50	<50.0	<50.0	0				<50.0	<50.0	0				
	>C16-C34 Fraction	mg/kg	100	<100.0	<100.0	0				<100.0	<100.0	0				
	>C34-C40 Fraction	mg/kg	100	<100.0	<100.0	0				<100.0	<100.0	0				
	>C10-C16 less Naphthalene (F2)	mg/kg	50	<50.0	<50.0	0				<50.0	<50.0	0				
	C6-C10 Fraction	mg/kg	20 (Primary): 25 (Interlab	<20.0	<20.0	0				<20.0	<25.0	0				
	C6-C10 less BTEX (F1)	mg/kg	20 (Primary): 25 (Interlab	<20.0	<20.0	0				<20.0	<25.0	0				
BTEX	Benzene	mg/kg	0.1 (Primary): 0.2 (Interla	<0.1	<0.1	0				<0.1	<0.2	0				
	Ethylbenzene	mg/kg	0.1 (Primary): 1 (Interlab	<0.1	<0.1	0				<0.1	<1.0	0				
	Toluene	mg/kg	0.1 (Primary): 0.5 (Interla	<0.1	<0.1	0				<0.1	<0.5	0				
	Xylene (o)	mg/kg	0.1 (Primary): 1 (Interlab	<0.1	<0.1	0				<0.1	<1.0	0				
	Xylene (m & p)	mg/kg	0.2 (Primary): 2 (Interlab	<0.2	<0.2	0				<0.2	<2.0	0				
	Xylene (Total)	mg/kg	0.3 (Primary): 1 (Interlab	<0.3	<0.3	0				<0.3	<1.0	0				
Polycyclic	Acenaphthene	mg/kg	0.5 (Primary): 0.1 (Interla	<0.5	<0.5	0				<0.5	<0.1	0				
	Acenaphthylene	mg/kg	0.5 (Primary): 0.1 (Interla	<0.5	<0.5	0				<0.5	<0.1	0				
	Anthracene	mg/kg	0.5 (Primary): 0.1 (Interla	<0.5	<0.5	0				<0.5	<0.1	0				
	Benz(a)anthracene	mg/kg	0.5 (Primary): 0.1 (Interla	<0.5	<0.5	0				<0.5	<0.1	0				
	Benzo(a)pyrene	mg/kg	0.5 (Primary): 0.05 (Interl	<0.5	<0.5	0				<0.5	<0.05	0				
	Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5	<0.5	<0.5	0				<0.5	<0.5	0				
	Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5	0.6	0.6	0				0.6	<0.5					
	Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5	1.2	1.2	0				**1.2**	**<0.5**					
	Benzo(b,j)fluoranthene	mg/kg	0.5	<0.5	<0.5	0				<0.5						
	Benzo(g,h,i)perylene	mg/kg	0.5 (Primary): 0.1 (Interla	<0.5	<0.5	0				<0.5	<0.1	0				
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0				<0.5						
	Chrysene	mg/kg	0.5 (Primary): 0.1 (Interla	<0.5	<0.5	0				<0.5	<0.1	0				
	Dibenz(a,h)anthracene	mg/kg	0.5 (Primary): 0.1 (Interla	<0.5	<0.5	0				<0.5	<0.1	0				
	Fluoranthene	mg/kg	0.5 (Primary): 0.1 (Interla	<0.5	<0.5	0				<0.5	<0.1	0				
	Fluorene	mg/kg	0.5 (Primary): 0.1 (Interla	<0.5	<0.5	0				<0.5	<0.1	0				
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.5 (Primary): 0.1 (Interla	<0.5	<0.5	0				<0.5	<0.1	0				
	Naphthalene	mg/kg	0.5 (Primary): 1 (Interlab	<0.5	<0.5	0				<0.5	<0.1	0				
	Naphthalene	mg/kg	0.5 (Primary): 1 (Interlab	<0.5	<0.5	0				<0.5	<0.1	0				
	Phenanthrene	mg/kg	0.5 (Primary): 0.1 (Interla	<0.5	<0.5	0				<0.5	<0.1	0				
	Pyrene	mg/kg	0.5 (Primary): 0.1 (Interla	<0.5	<0.5	0				<0.5	<0.1	0				
	PAHs (Total)	mg/kg	0.5	<0.5	<0.5	0				<0.5						
Chlorinated	Hexachlorobenzene	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
Polychlorin	Aroclor 1016	mg/kg	0.1	<0.1	<0.1	0				<0.1	<0.1	0				
	Aroclor 1221	mg/kg	0.1	<0.1	<0.1	0				<0.1	<0.1	0				
	Aroclor 1232	mg/kg	0.1	<0.1	<0.1	0				<0.1	<0.1	0				
	Aroclor 1242	mg/kg	0.1	<0.1	<0.1	0				<0.1	<0.1	0				
	Aroclor 1248	mg/kg	0.1	<0.1	<0.1	0				<0.1	<0.1	0				
	Aroclor 1254	mg/kg	0.1	<0.1	<0.1	0				<0.1	<0.1	0				
	Aroclor 1260	mg/kg	0.1	<0.1	<0.1	0				<0.1	<0.1	0				
	PCBs (Total)	mg/kg	0.1	<0.1	<0.1	0				<0.1	<0.1	0				
Organochl	4,4-DDE	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	Aldrin	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	Aldrin + Dieldrin (Sum of Total)	mg/kg	0.05	<0.05	<0.05	0				<0.05						
	alpha-BHC	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	beta-BHC	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	Dieldrin	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	DDD	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	DDT	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	DDT+DDE+DDD (Sum of Total)	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	Chlordane	mg/kg	0.1	<0.1	<0.1	0				<0.1						
	delta-BHC	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	Endosulfan alpha	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	Endosulfan beta	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	Endosulfan sulphate	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	Endrin	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	Endrin aldehyde	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	Endrin ketone	mg/kg	0.05	<0.05	<0.05	0				<0.05						
	Heptachlor	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	Heptachlor Epoxide	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	Lindane	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	Methoxychlor	mg/kg	0.05 (Primary): 0.1 (Interl	<0.05	<0.05	0				<0.05	<0.1	0				
	Toxaphene	mg/kg	1	<1.0	<1.0	0				<1.0						
Asbestos	Approx. Sample Mass	G					694.0	822.0					694.0	817.49		
	Asbestos from ACM in Soil	%w/w					0.0	0.0	0				0.0	0.0	0	
	Asbestos from FA & AF in Soil	%w/w					0.0	0.0005	200				0.0	0.002	200	
	Mass ACM	G					0.0	0.0	0				0.0	0	0	
	Mass Asbestos in ACM	G					0.0	0.0	0				0.0	0	0	
	Mass FA	G					0.0	0.0068	200				0.0			
	Mass Asbestos in FA	G					0.0	0.0027	200				0.0			
	Mass AF	G					0.0	0.0016	200				0.0			
	Mass Asbestos in AF	G					0.0	0.0016	200				0.0			
Asbestos	Asbestos Reported Result	COMMEN					1.0	1.0	0				1.0	1.0	0	
Asbestos	Mass Asbestos in FA & AF	G					0.0	0.0043	200				0.0	0.166	200	
Asbestos -	ACM - Comment	COMMEN					1.0	1.0	0				1.0	1.0	0	
	AF - Comment	COMMEN					1.0	1.0	0				1.0	1.0	0	
	FA - Comment	COMMEN					1.0	1.0	0				1.0	1.0	0	
	Organic Fibres - Comment	COMMEN					1.0	1.0	0				1.0	1.0	0	
	Respirable Fibres - Comment	COMMEN					1.0	1.0	0				1.0	1.0	0	
	Synthetic Fibres - Comment	COMMEN					1.0	1.0	0				1.0	1.0	0	
Other	% Moisture 103oC	%	1	9.0	10.0	11				9.0	8.0	12				

*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 (1-20 x EQL); 30 (20-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Field Duplicates (WATER)
Filter: SDG in('567165'

	SDG	567165	566246		567165	ENVIROLAB 2017-10-05T00:00:00	
	Field ID	BH05	QC01-WA	RPD	BH05	QC01_W	RPD
	Sampled Date/Time	4/10/2017	4/10/2017		4/10/2017	4/10/2017	

Chem_Gro	ChemNam	Units	EQL						
EPA VIC IV	Chlorinated	µg/l	5	<5.0	<5.0	0	<5.0		
	Other Chlo	µg/l	5	<5.0	<5.0	0	<5.0		
VRG621 (Lab)									
VOC	Total MAH	mg/l	0.003	<0.003	<0.003	0	<0.003		
Metals & M	Arsenic (To	mg/l	0.001	**0.006**	**<0.001**	**143**	**0.006**	**<0.001**	**143**
	Cadmium (	mg/l	0.0002 (Primary): 0.0001	**0.0002**	**0.0003**	**40**	0.0002	0.0002	0
	Chromium	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Copper (Fi	mg/l	0.001	**0.016**	**0.009**	**56**	**0.016**	**0.008**	**67**
	Lead (Filte	mg/l	0.001	**0.006**	**<0.001**	**143**	**0.006**	**<0.001**	**143**
	Mercury (In	mg/l	0.0001 (Primary): 0.0000	**0.0007**	**<0.0001**	**150**	**0.0007**	**<0.0001**	**173**
	Nickel (Filt	mg/l	0.001	**0.14**	**0.088**	**46**	**0.14**	**0.086**	**48**
	Zinc (Filter	mg/l	0.005 (Primary): 0.001 (	**0.31**	**0.22**	**34**	**0.31**	**0.21**	**38**
etalloids									
Chlorinated	1,1,1,2-tetr	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,1,1-trichl	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,1,2,2-tetr	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,1,2-trichl	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,1-dichlor	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,2,3-trichl	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,2-dichlor	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,2-dichlor	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,3-dichlor	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Bromochlo	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Carbon tet	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Chloroetha	mg/l	0.001 (Primary): 0.01 (In	<0.001	<0.001	0	<0.001	<0.01	0
	Chlorometh	mg/l	0.001 (Primary): 0.01 (In	<0.001	<0.001	0	<0.001	<0.01	0
	Dichlorodif	mg/l	0.001 (Primary): 0.01 (In	<0.001	<0.001	0	<0.001	<0.01	0
	Dichlorome	mg/l	0.001	<0.001	<0.001	0	<0.001		
	Trichlorofl	mg/l	0.001 (Primary): 0.01 (In	<0.001	<0.001	0	<0.001	<0.01	0
l Alkanes									
Chlorinated	1,1-dichlor	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	3-chloropro	mg/l	0.001	<0.001	<0.001	0	<0.001		
	4-chlorotol	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	cis-1,2-dich	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	cis-1,3-dich	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Tetrachlor	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	trans-1,2-d	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	trans-1,3-d	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Trichloroet	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Vinyl Chlor	mg/l	0.001 (Primary): 0.01 (In	<0.001	<0.001	0	<0.001	<0.01	0
l Alkenes									
Trihalomet	Bromodich	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Chloroform	mg/l	0.005 (Primary): 0.001 (	<0.005	<0.005	0	<0.005	<0.001	0
	Dibromoch	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Tribromom	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
anes									
TPHs (NEP	C6-C9 Fra	mg/l	0.02 (Primary): 0.01 (Int	<0.02	<0.02	0	<0.02	<0.01	0
	C10-C14 F	mg/l	0.05	<0.05	0.05	0	**<0.05**	**0.073**	**37**
	C15-C28 F	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	C29-C36 F	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	C10-C36 F	mg/l	0.1	<0.1	<0.1	0	<0.1		
C 1999)									
TRHs (NEP	>C10-C16	mg/l	0.05	<0.05	<0.05	0	**<0.05**	**0.1**	**67**
	>C16-C34	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	>C34-C40	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	>C10-C16	mg/l	0.05	<0.05	<0.05	0	**<0.05**	**0.1**	**67**
	C6-C10 Fra	mg/l	0.02 (Primary): 0.01 (Int	<0.02	<0.02	0	<0.02	<0.01	0
	C6-C10 les	mg/l	0.02 (Primary): 0.01 (Int	<0.02	<0.02	0	<0.02	<0.01	0
C 2013)									
BTEX	Benzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Ethylbenze	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Toluene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Xylene (o)	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Xylene (m	mg/l	0.002	<0.002	<0.002	0	<0.002	<0.002	0
	Xylene (To	mg/l	0.003	<0.003	<0.003	0	<0.003		
Polycyclic A	Acenaphth	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.0001	0	<0.001		
	Acenaphth	mg/l	0.001 (Primary): 0.0001	<0.001			<0.001	<0.0001	0
	Acenaphth	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.0001	0	<0.001		
	Acenaphth	mg/l	0.001 (Primary): 0.0001	<0.001			<0.001	<0.0001	0
	Anthracene	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.0001	0	<0.001		
	Anthracene	mg/l	0.001 (Primary): 0.0001	<0.001			<0.001	<0.0001	0
	Benz(a)ant	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.0001	0	<0.001		
	Benz(a)ant	mg/l	0.001 (Primary): 0.0001	<0.001			<0.001	<0.0001	0
	Benzo(a)py	mg/l	0.001 : 0.00001 (Dupe)	<0.001	<0.0	0	<0.001		
	Benzo(a)py	mg/l	0.001 (Primary): 0.0001	<0.001			<0.001	<0.0001	0
	Benzo(b,j)fl	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.0001	0	<0.001		
	Benzo(g,h,	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.0001	0	<0.001		
	Benzo(g,h,	mg/l	0.001 (Primary): 0.0001	<0.001			<0.001	<0.0001	0
	Benzo(k)flu	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.0001	0	<0.001		
	Chrysene	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.0001	0	<0.001		
	Chrysene	mg/l	0.001 (Primary): 0.0001	<0.001			<0.001	<0.0001	0
	Dibenz(a,h	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.0001	0	<0.001		
	Dibenz(a,h	mg/l	0.001 (Primary): 0.0001	<0.001			<0.001	<0.0001	0
	Fluoranthe	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.0001	0	<0.001		
	Fluoranthe	mg/l	0.001 (Primary): 0.0001	<0.001			<0.001	<0.0001	0
	Fluorene	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.0001	0	<0.001		
	Fluorene	mg/l	0.001 (Primary): 0.0001	<0.001			<0.001	<0.0001	0
	Indeno(1,2	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.0001	0	<0.001		
	Indeno(1,2	mg/l	0.001 (Primary): 0.0001	<0.001			<0.001	<0.0001	0
	Naphthaler	mg/l	0.01 (Primary): 0.001 (In	<0.01	<0.01	0	<0.01	<0.0002	0
	Naphthaler	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.0001	0	<0.001		
	Naphthaler	mg/l	0.001 (Primary): 0.0002	<0.001			<0.001	<0.0002	0
	Phenanthre	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.0001	0	<0.001		
	Phenanthre	mg/l	0.001 (Primary): 0.0001	<0.001			<0.001	<0.0001	0
	Pyrene	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.0001	0	<0.001		
	Pyrene	mg/l	0.001 (Primary): 0.0001	<0.001			<0.001	<0.0001	0
	PAHs (Tota	mg/l	0.001 : 0.00005 (Dupe)	<0.001	<0.001	0	<0.001		

Field Duplicates (WATER) Filter: SDG in('567165'	SDG	567165	566246		567165	ENVIROLAB 2017-10-05T00:00:00	
	Field ID	BH05	QC01-WA	RPD	BH05	QC01_W	RPD
	Sampled Date/Time	4/10/2017	4/10/2017		4/10/2017	4/10/2017	

Aromatic Hydrocarbons									
Monocyclic	1,2,4-trime	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,3,5-trime	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Bromoben	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Isopropylbe	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Styrene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
Aromatic Hydrocarbons									
Miscellane	1,2-dibrom	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	2-Butanone	mg/l	0.001	**0.003**	**<0.001**	**100**	0.003		
	4-Methyl-2	mg/l	0.001	<0.001	<0.001	0	<0.001		
	Bromomet	mg/l	0.001 (Primary): 0.01 (In	<0.001	<0.001	0	<0.001	<0.01	0
	Dibromome	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Iodometha	mg/l	0.001	<0.001	<0.001	0	<0.001		
ous Hydrocarbons									
Chlorinated	1,2-Dichlor	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,3-dichlor	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	1,4-dichlor	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Chloroben	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
l Benzenes									
Solvents	2-Propanol	µg/l	1	<1.0	<1.0	0	<1.0		
Organic Su	Carbon dis	mg/l	0.001	<0.001	<0.001	0	<0.001		

*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 (1-20 x EQL); 30 (20-30 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 thos

Contents

Lab Duplicates with high RPDs

SDG	Lab_Report_Number	Matrix_Type	Lab_Duplicate	Field_ID	Depth	Sampled_Date-Time	Method_Name	Compound	Parent_Result	Dupe_Result	Result_Unit	EQL	RPD
565129	565129	SOIL	S17-Se32622-DUP	BH11 0.9-1.0	BH110.9 - 1	25/09/2017	LTM-ORG-2220 OCP & PCB in Soil and Water	Dieldrin	<0.05	0.07	MG/KG	0.05 mg/kg	33
565129	565129	SOIL	S17-Se32638-DUP	BH07 0.9-1.0	BH070.9 - 1	25/09/2017	LTM-ORG-2010 TRH C6-C36	TRH C15-C28	98	<50	MG/KG	50 mg/kg	65

Contents

Surrogate Variation > 30% or outside lab LCL or UCL

SDG	Expr1001	Lab_Report_Number	Sample_Type	Matrix_Type	SampleCode	Field_ID	Depth	Sampled_Date-Time	Compound	Recovery %	Unit	LCL	UCL	Lab_Qualifier	Lab_Comments
565244	565244	565244	Normal	SOIL	S17-Se33418	DRUM	DRUM	27/09/2017	p-Terphenyl-d14 (surr.)	134	%	50	150		
565244	565244	565244	Normal	SOIL	S17-Se33416	BH06_0-0.1	BH060 - 0.1	27/09/2017	Dibutylchlorendate (surr.)	136	%	50	150		
565244	565244	565244	Trip_B	WATER	S17-Se33421	TB	TB	27/09/2017	4-Bromofluorobenzene (surr.)	64	%	50	150		
565244	565244	565244	Rinsate	WATER	S17-Se33422	RINS	RINS	27/09/2017	2-Fluorobiphenyl (surr.)	63	%	50	150		
565244	565244	565244	Rinsate	WATER	S17-Se33422	RINS	RINS	27/09/2017	4-Bromofluorobenzene (surr.)	69	%	50	150		
565244	565244	565244	Rinsate	WATER	S17-Se33422	RINS	RINS	27/09/2017	Dibutylchlorendate (surr.)	68	%	50	150		
565244	565244	565244	Rinsate	WATER	S17-Se33422	RINS	RINS	27/09/2017	Tetrachloro-m-xylene (surr.)	59	%	50	150		
567165	567165	567165	Normal	WATER	S17-Oc12118	BH01	BH01	4/10/2017	4-Bromofluorobenzene (surr.)	69	%	70	130		
567165	567165	567165	Normal	WATER	S17-Oc12119	BH04	BH04	4/10/2017	2-Fluorobiphenyl (surr.)	-999	%	30	130		INT
567165	567165	567165	Normal	WATER	S17-Oc12119	BH04	BH04	4/10/2017	p-Terphenyl-d14 (surr.)	-999	%	30	130		INT
567165	567165	567165	Normal	WATER	S17-Oc12120	BH05	BH05	4/10/2017	2-Fluorobiphenyl (surr.)	-999	%	30	130		INT
567165	567165	567165	Normal	WATER	S17-Oc12120	BH05	BH05	4/10/2017	p-Terphenyl-d14 (surr.)	-999	%	30	130		INT
567165	567165	567165	Rinsate	WATER	S17-Oc12121	RINSATE	RINSATE	4/10/2017	2-Fluorobiphenyl (surr.)	-999	%	30	130		INT
567165	567165	567165	Rinsate	WATER	S17-Oc12121	RINSATE	RINSATE	4/10/2017	p-Terphenyl-d14 (surr.)	-999	%	30	130		INT

Contents

Count of Results

Matrix_Type	Sample_Type	Reg	Leached	Spike_Compounds	Surrogate
SOIL	Normal	1316	0	0	68
SOIL	MB	138	0	0	0
SOIL	LAB_D	138	0	0	0
SOIL	LCS	109	0	0	0
SOIL	Field_D	99	0	0	5
SOIL	MS	0	0	94	0
WATER	Normal	282	0	0	12
WATER	Rinsate	248	0	0	14
WATER	MB	206	0	0	0
WATER	LCS	137	0	0	0
WATER	MS	0	0	94	0
WATER	LAB_D	28	0	0	0
WATER	Trip_B	16	0	0	2
WATER	Trip_S	15	0	0	2

Contents

Less than 1 matrix spike in 20 samples, or less than 1 matrix duplicate in 20 samples

Matrix_Type	Number_of_Samples	Number_of_Matrix_Spike_Samples	Number_of_Matrix_Spike_Dupe_Samples
SOIL	73	10	0
WATER	60	11	0

Contents

Trip Spike Recoveries (70% - 130% is acceptable)

SDG	Lab_Report_Number	Matrix_Type	SampleCode	Field_ID	Method_Name	Compound	Trip_Spike_Result	Trip_Spike_Control	Result_Units	Spike_Recovery_%	Acceptable	Result_Type	Lab_Comments
565244	565244	WATER	S17-Se33420	TS	TRH C6-C40 - LTM-ORG-2010	Benzene	NA	NA	NA	94	Y	REG	
565244	565244	WATER	S17-Se33420	TS	TRH C6-C40 - LTM-ORG-2010	Ethylbenzene	NA	NA	NA	88	Y	REG	
565244	565244	WATER	S17-Se33420	TS	TRH C6-C40 - LTM-ORG-2010	m&p-Xylenes	NA	NA	NA	85	Y	REG	
565244	565244	WATER	S17-Se33420	TS	TRH C6-C40 - LTM-ORG-2010	o-Xylene	NA	NA	NA	94	Y	REG	
565244	565244	WATER	S17-Se33420	TS	TRH C6-C40 - LTM-ORG-2010	Toluene	NA	NA	NA	94	Y	REG	
565244	565244	WATER	S17-Se33420	TS	TRH C6-C40 - LTM-ORG-2010	Xylenes - Total	NA	NA	NA	88	Y	REG	
567165	567165	WATER	S17-Oc12123	TS	E016 Volatile Aromatic Compounc	Naphthalene	NA	NA	NA	77	Y	REG	
567165	567165	WATER	S17-Oc12123	TS	TRH C6-C36 - LTM-ORG-2010	TRH C6-C9	NA	NA	NA	94	Y	REG	
567165	567165	WATER	S17-Oc12123	TS	TRH C6-C40 - LTM-ORG-2010	Benzene	NA	NA	NA	110	Y	REG	
567165	567165	WATER	S17-Oc12123	TS	TRH C6-C40 - LTM-ORG-2010	Ethylbenzene	NA	NA	NA	96	Y	REG	
567165	567165	WATER	S17-Oc12123	TS	TRH C6-C40 - LTM-ORG-2010	m&p-Xylenes	NA	NA	NA	90	Y	REG	
567165	567165	WATER	S17-Oc12123	TS	TRH C6-C40 - LTM-ORG-2010	o-Xylene	NA	NA	NA	110	Y	REG	
567165	567165	WATER	S17-Oc12123	TS	TRH C6-C40 - LTM-ORG-2010	Toluene	NA	NA	NA	97	Y	REG	
567165	567165	WATER	S17-Oc12123	TS	TRH C6-C40 - LTM-ORG-2010	TRH C6-C10	NA	NA	NA	100	Y	REG	
567165	567165	WATER	S17-Oc12123	TS	TRH C6-C40 - LTM-ORG-2010	Xylenes - Total	NA	NA	NA	96	Y	REG	

Appendix P Statistical Analyses

Appendix P Statistical Analyses

Nonparametric UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	20/10/2017 4:39:38 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Nickel

General Statistics

Total Number of Observations	13	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	5	Mean	19.53
Maximum	86	Median	5
SD	28.3	Std. Error of Mean	7.848
Coefficient of Variation	1.449	Skewness	1.854
Mean of logged Data	2.269	SD of logged Data	1.087

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	33.52	95% Adjusted-CLT UCL (Chen-1995)	36.75
		95% Modified-t UCL (Johnson-1978)	34.19

Nonparametric Distribution Free UCLs

95% CLT UCL	32.44	95% Jackknife UCL	33.52
95% Standard Bootstrap UCL	32.03	95% Bootstrap-t UCL	54.28
95% Hall's Bootstrap UCL	36.3	95% Percentile Bootstrap UCL	32.52
95% BCA Bootstrap UCL	37.31		
90% Chebyshev(Mean, Sd) UCL	43.07	95% Chebyshev(Mean, Sd) UCL	53.74
97.5% Chebyshev(Mean, Sd) UCL	68.54	99% Chebyshev(Mean, Sd) UCL	97.62

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	53.74

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Appendix Q Monitoring Well Location Survey

STUART DE NETT
LAND SURVEYORS

4 October 2017

Our Ref: 11962

RE: MONITORING WELLS
PROPERTY: 240-244 BEECROFT ROAD, EPPING (NRT SITE)

	MGA COORDINATES		AHD HEIGHTS		
Point	**Easting**	**Northing**	**Top of Pipe**	**Surface Level**	**Type**
BH1	322237.6	6261636.7	82.925	83.015	Flush
BH4	322253.1	6261653.1	83.06	83.18	Flush
BH5	322232.8	6261687.9	80.53	80.64	Flush

Methodology: RTK GNSS for position (+/-10mm)
Differential leveling for MW height (+/-3mm)

AHD Origin: SSM 180033 RL 85.032

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