REPORT TO

URBIS PTY LTD

ON

STAGE 1 AND STAGE 2 ENVIRONMENTAL SITE ASSESSMENT

FOR

PROPOSED BROOKVALE OVAL REDEVELOPMENT

AT

BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Date: 10 October 2019

Ref: E32596BDrpt

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Executive Summary

Urbis Pty Ltd ('the client') commissioned JK Environments (JKE) to undertake a Stage 1 and Stage 2 Environmental Site Assessment (ESA) for the proposed Brookvale Oval redevelopment at Brookvale Oval, Pittwater Road, Brookvale, NSW. The site location is shown on Figure 1 and the assessment was confined to the site boundaries as shown on Figure 2.

The assessment was limited to the two areas of investigation which both form part of the proposed development. The proposed Centre of Excellence and Grandstand which occupies the northern end of the Brookvale Oval and the extension of the existing on-grade carpark located between the South-Western Stand and Alfred Road. For the purpose of this report, the two development/investigation areas have been referred to as 'the site', whilst the whole property has been referred to as 'Brookvale Oval'.

The ESA included a review of site history records, a site inspection, soil sampling from 40 boreholes and groundwater sampling from three monitoring wells. The review if the site history and site inspection identified the following potential contamination sources at the site: Imported fill material, use of pesticides and hazardous building materials.

Concentrations above the human health Site Assessment Criteria (SAC) were encountered at the proposed Centre of Excellence and Grandstand site, including Fibrous Asbestos (FA) in two bulk field fill samples and Asbestos Fines (AF)/FA in threes fill samples submitted for laboratory analysis. The sampling locations and contamination data are shown in Figure 3. The source of the friable asbestos is likely to be associated with importation of fill material used to create the spectator hill. Based on review of aerial photographs, the hill appeared to have constructed between approximately 1961 and 1970. Remediation will be required for the proposed Centre of Excellence and Grandstand development.

Other contaminants including Polycyclic Aromatic Hydrocarbons (PAHs) and Total Recoverable Hydrocarbons (TRH) were identified in the fill soil samples above the human health and ecological SAC. However, further analysis, statistical calculations and review of the results to the Conceptual Site Model (CSM) suggested that the risk of exposure was low and does not warrant further consideration/remediation.

The zinc results for the groundwater samples MW206 and MW228 were greater than the ecological SAC. The groundwater monitoring well sampling locations and contamination data are shown in Figures 4. JKE are of the opinion that the zinc groundwater elevations are associated with a regional issue that does not warrant further consideration/remediation. The zinc concentrations do not pose a risk to human health.

Considering the information reviewed for this assessment (risk maps, subsurface conditions and laboratory results etc.), Potential Acid Sulfate Soils (ASS) or actual ASS are not likely to be present at the site or disturbed during the proposed development. Therefore an ASS management plan is not considered to be necessary.

Based on the findings of the assessment, JKE are of the opinion that the proposed Centre of Excellence and grandstand site can be made suitable for the proposed development provided the following is implemented:

- The data gaps identified in Section 10.4 are addressed. This can be done prior to commencement of remediation works and the requirements for this work are to be outlined in the Remediation Action Plan (RAP);
- A RAP and Asbestos Management Plan (AMP) are prepared;
- A Validation Report is prepared on completion of the remediation works; and
- A long-term Environmental Management Plan (EMP) is prepared at the completion of remediation and validations works, in the event that the capping and containment approached to remediation is adopted.

Based on the findings of the assessment, JKE are of the opinion that the proposed car park extension site is suitable from a contamination view point for the proposed civil infrastructure works development. Remediation is not required.

The conclusions and recommendations should be read in conjunction with the limitations presented in the body of this report.

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Abbreviations

Asbestos Fines/Fibrous Asbestos	**AF/FA**
Ambient Background Concentrations	**ABC**
Added Contaminant Limits	**ACL**
Asbestos Containing Material	**ACM**
Australian Drinking Water Guidelines	**ADWG**
Area of Environmental Concern	**AEC**
Australian Height Datum	**AHD**
Acid Sulfate Soil	**ASS**
Above-Ground Storage Tank	**AST**
Below Ground Level	**BGL**
Benzo(a)pyrene Toxicity Equivalent Factor	**BaP TEQ**
Benzene, Toluene, Ethylbenzene, Xylene	**BTEX**
Cation Exchange Capacity	**CEC**
Contaminated Land Management	**CLM**
Contaminant(s) of Potential Concern	**CoPC**
Chain of Custody	**COC**
Conceptual Site Model	**CSM**
Development Application	**DA**
Dial Before You Dig	**DBYD**
Data Quality Indicator	**DQI**
Data Quality Objective	**DQO**
Detailed Site Investigation	**DSI**
Ecological Investigation Level	**EIL**
Environmental Investigation Services	**EIS**
Ecological Screening Level	**ESL**
Environmental Management Plan	**EMP**
Excavated Natural Material	**ENM**
Environment Protection Authority	**EPA**
Environmental Site Assessment	**ESA**
Ecological Screening Level	**ESL**
Fibre Cement Fragment(s)	**FCF**
Health Investigation Level	**HILs**
Health Screening Level	**HSL**
Health Screening Level-Site Specific Assessment	**HSL-SSA**
International Organisation of Standardisation	**ISO**
JK Environments	**JKE**
Lab Control Spike	**LCS**
Light Non-Aqueous Phase Liquid	**LNAPL**
Map Grid of Australia	**MGA**
National Association of Testing Authorities	**NATA**
National Environmental Protection Measure	**NEPM**
Organochlorine Pesticides	**OCP**
Organophosphate Pesticides	**OPP**
Polycyclic Aromatic Hydrocarbons	**PAH**
Potential ASS	**PASS**
Polychlorinated Biphenyls	**PCBs**
Photo-ionisation Detector	**PID**
Protection of the Environment Operations	**POEO**
Practical Quantitation Limit	**PQL**
Quality Assurance	**QA**
Quality Control	**QC**
Remediation Action Plan	**RAP**
Relative Percentage Difference	**RPD**

Site Assessment Criteria	**SAC**
Sampling, Analysis and Quality Plan	**SAQP**
Site Specific Assessment	**SSA**
Source, Pathway, Receptor	**SPR**
Specific Contamination Concentration	**SCC**
Standard Penetration Test	**SPT**
Standard Sampling Procedure	**SSP**
Standing Water Level	**SWL**
Trip Blank	**TB**
Toxicity Characteristic Leaching Procedure	**TCLP**
Total Recoverable Hydrocarbons	**TRH**
Trip Spike	**TS**
Upper Confidence Limit	**UCL**
United States Environmental Protection Agency	**USEPA**
Underground Storage Tank	**UST**
Virgin Excavated Natural Material	**VENM**
Volatile Organic Compounds	**VOC**
World Health Organisation	**WHO**
Work Health and Safety	**WHS**

Units

Litres	**L**
Metres BGL	**mBGL**
Metres	**m**
Millivolts	**mV**
Millilitres	**ml or mL**
Milliequivalents	**meq**
micro Siemens per Centimetre	**µS/cm**
Micrograms per Litre	**µg/L**
Milligrams per Kilogram	**mg/kg**
Milligrams per Litre	**mg/L**
Parts Per Million	**ppm**
Percentage	**%**

1 INTRODUCTION

Urbis Pty Ltd ('the client') commissioned JK Environments (JKE) to undertake a Stage 1 and Stage 2 Environmental Site Assessment (ESA) for the proposed Brookvale Oval redevelopment at Brookvale Oval, Pittwater Road, Brookvale, NSW. The site location is shown on Figure 1 and the assessment was confined to the site boundaries as shown on Figure 2.

The assessment was limited to the two areas of investigation which both form part of the proposed development. The proposed Centre of Excellence and Grandstand which occupies the northern end of the Brookvale Oval and the extension of the existing on-grade carpark located between the South-Western Stand and Alfred Road. For the purpose of this report, the two development/investigation areas have been referred to as 'the site', whilst the whole property has been referred to as 'Brookvale Oval'.

This report has been prepared to support the lodgement of a Development Application (DA) with Northern Beaches Council.

A geotechnical and hydrogeological investigation was undertaken in conjunction with this assessment by JK Geotechnics (JKG). The results of the investigation are presented in a separate report (Ref: 32596YJrpt, dated 25 September 2019)[1]. This report should be read in conjunction with the JKG report 2019.

Environmental Investigation Services (EIS) has recently been re-branded to JK Environments and will continue to function as the environmental division of JK Group alongside JK Geotechnics and JK Drilling.

1.1 Proposed Development Details

The JKE proposal (Ref: EP49724BTrev1) of 12 August 2019 was prepared based on information provided by the client at the time, including the Hassell Architectural plans (drawing ref: SK_0100 Brookvale Strategy 03_A- Site Plan, Revision K, dated 8 August 2019) received by JKE on 9 August 2019. It was understood that the proposed development included demolition of the existing scoreboard building, removal of existing hardstand and construction of a new state of the art Centre of Excellence and grandstand structure at the northern of Brookvale Oval. Additionally, the existing on-grade car park in the south-west section of Brookvale Oval, to the east of Alfred Street was to be extend to the north.

Based on the plans provided, JKE estimated the following areas for the proposed development/investigation:

- Centre of Excellence and Grandstand – approximately 5,250m^2; and
- Car park extension (west of oval) – approximately 550m^2.

The proposed development details have been amended a number of times since the preparation of the proposal and completion of field work associated with this ESA. Based on current plans received by JKE on 9 August 2019 (drawing project number ref: 014340, Revision B and F, dated 29 September 2019), the following additional development details are noted:

[1] Referred to as JKG report 2019

- The proposed Centre of Excellence and Grandstand development area has been increased to the north-west and north-east. Additionally, the proposed development will encroach southwards onto the existing playing field by approximately 3.5m. The total increase in the proposed development area is approximately 375m^2;
- The proposed Centre of Excellence building consists of a two storey structure that incorporates grandstand seating over the field side of the structure and two levels of coaching, training and administration facilities. A proposed player's tunnel is located beneath the building, providing access to the field. In addition, below the eastern end of the building, provision has been made for balance, rainwater, on-site stormwater detection tanks and other plant. Access to the building is gained via the external forecourt area in the east section of the site. The forecourt is to be landscaped hardstand and softscape;
- Earthworks for the proposed Centre of Excellence and Grandstand development include excavation for the tunnel, tanks and plant to maximum depths of approximately 4.5m below ground level (mBGL). A locally deeper excavation may be required for the lift over run, which may extend approximately 1.5m further below the level of the tunnel. To achieve the proposed site levels, minor cuts (approximately 0.5mBGL) and filling (to approximately 2m above the existing ground level) may be required. JKE understand that further soil is to be imported for filling purposes to achieve the design levels;
- The large trees in the north section of the site are to be removed;
- The existing stormwater line which runs through the east section of the Centre of Excellence and Grandstand section of the site is to be realigned to the north and east of the site; and
- We understand that the proposed on-grade carpark will be constructed at or close to existing levels. Potential excavation details are unknown at this stage. The proposed finished surface includes a compacted gravel layer.

1.2 Aims and Objectives

The primary aims of the ESA were to identify any past or present potentially contaminating activities at the site, identify the potential for site contamination, and make a preliminary assessment of the soil and groundwater contamination conditions. The assessment objectives were to:

- Provide an appraisal of the past site use(s) based on a review of historical records;
- Assess the current site conditions and use(s) via a site walkover inspection;
- Identify potential contamination sources/areas of environmental concern (AEC) and contaminants of potential concern (CoPC);
- Assess the soil and groundwater contamination conditions via implementation of a sampling and analysis program;
- Assess the potential for Acid Sulfate Soil (ASS) occurrence;
- Prepare a conceptual site model (CSM);
- Assess the potential risks posed by contamination to the receptors identified in the CSM (Tier 1 assessment);
- Provide a preliminary waste classification for off-site disposal of soil;
- Assess whether the site is suitable or can be made suitable for the proposed development (from a contamination viewpoint); and

- Assess whether further intrusive investigation and/or remediation is required.

1.3 Scope of Work

The assessment was undertaken generally in accordance with a JKE proposal (Ref: EP49724BTrev1) of 12 August 2019 and sub-consultant agreement of 21 August 2019. The scope of work included the following:

- Review of site information, including background and site history information from a Lotsearch Pty Ltd *Environmental Risk and Planning Report,* review of major services identified by the 'Dial Before You Dig', review of Section 10.7(2 & 5) planning certificates and historical records maintained by the local council and review of SafeWork NSW license record for the storage of generous goods;
- Preparation of a CSM;
- Design and implementation of a sampling, analysis and quality plan (SAQP);
- Interpretation of the analytical results against the adopted Site Assessment Criteria (SAC);
- Data Quality Assessment; and
- Preparation of a report including a Tier 1 risk assessment.

The scope of work was undertaken with reference to the National Environmental Protection (Assessment of Site Contamination) Measure 1999 as amended (2013)[2], other guidelines made under or with regards to the Contaminated Land Management Act (1997)[3], State Environmental Planning Policy No.55 – Remediation of Land (1998)[4] and Acid Sulfate Soil Management Advisory Committee (ASSMAC) Acid Sulfate Soil Manual (1998)[5]. A list of reference documents/guidelines is included in the appendices.

[2] National Environment Protection Council (NEPC), (2013). *National Environmental Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013).* (referred to as NEPM 2013)

[3] Contaminated Land Management Act 1997 (NSW) (referred to as CLM Act 1997)

[4] *State Environmental Planning Policy No. 55 – Remediation of Land 1998* (NSW) (referred to as SEPP55)

[5] Acid Sulfate Soils Management Advisory Committee (ASSMAC), (1998). *Acid Sulfate Soils Manual* (ASS Manual 1998)

2 SITE INFORMATION

2.1 Site Identification

Table 2-1: Site Identification

Current Site Owner:	Northern Beaches Council
Site Address:	Brookvale Oval, Pittwater Road, Brookvale NSW
Lot & Deposited Plan:	Part of Lot 1 DP 784268, Lot 1 DP114027, Lot 6 DP785409 and Lot B DP966128
Current Land Use:	Recreational public open space and sporting events
Proposed Land Use:	Recreational public open space and sporting events
Local Government Authority:	Northern Beaches Council
Current Zoning:	RE1 Public Recreation (Warringah Local Environmental Plan 2011)
Site Area (m^2):	Centre of Excellence – 5,625m^2; and Parking – 550m^2.
RL (AHD in m) (approx.):	28
Geographical Location (decimal degrees) (approx.):	Centre of Excellence and Grandstand Latitude: -33.759341 Longitude: 151.273348 Parking Latitude: -33.759838 Longitude: 151.272515
Site Location Plan:	Figure 1
Sample Location Plan:	Figure 2

2.2 Site Location and Regional Setting

The site is located within the north and south-west sections of Brookvale Oval. Brookvale Oval is bound by Pittwater Road to the South, Alfred Road to the west, parkland to the north and Pine Avenue to the east. Brookvale Oval is utilised for football matches and is open to the public for recreational purposes.

Brookvale Oval is located in a predominantly residential area, however commercial and industrial land use is permissible to the south beyond Pittwater Road. The site/oval is located approximately 230m to the north-west of Greendale Creek.

2.3 Topography

The regional topography is characterised by a south-east facing hillside that falls towards Greendale Creek. Brookvale Oval is located towards the toe of the hillside and has a gentle slope towards the south at approximately 3°, although the playing field area has been levelled to account for the slope.

The proposed Centre of Excellence and Grandstand site was characterised by a man-made spectator hill which occupied the majority of the site. The north section of the site sloped towards the north and north-east at approximately 3° to 10°. The central section of the site (i.e. the spectator hill) sloped towards the south at approximately 10° to 20°. The south section of the site was generally level before sloping towards the south at 5°.

The proposed car park extension site appeared to follow the regional topography which slopes towards the south at approximately 3°.

2.4 Site Inspection

A walkover inspection of the site was undertaken by JKE on 26 August 2019. The inspection was limited to the site and immediate surrounds. An internal inspection of buildings was not undertaken. Selected site photographs obtained during the inspection are attached in the appendices.

A summary of the other inspection findings are outlined in the following subsections:

2.4.1 Current Site Use and/or Indicators of Former Site Use

At the time of the inspection, the proposed Centre of Excellence and Grandstand site was occupied by man-made spectator hill which faced south towards the playing field for match viewing purposes. The proposed car park extension site was vacant. Indicators of former site use were not observed.

2.4.2 Buildings, Structures and Pavements

A number of small building were located in the north and north-east sections of the proposed Centre of Excellence and Grandstand site. The buildings appeared to be utilised for catering and ticket sales during events. A scoreboard screen was located on top of the building. The buildings appeared to be construed of brick, timber and fibre cement sheeting. Concrete and asphaltic concrete pavements were evident in north and south section of the site. In the south section of the site and towards the toe of the spectator hill was a masonry wall approximately 0.7m high which retained the lower part of the hill. Timber bench seating was located along the south at the edge of the grassed field.

An asphaltic concrete driveway traversed (north/south) the west section of the proposed car park extension site.

2.4.3 Boundary Conditions, Soil Stability and Erosion

Brookvale Oval is surrounded by a metal fence. JKE understand that public access is restricted at night by locked gates. The fencing captures the proposed Centre of Excellence and Grandstand site. The proposed car park extension site was not fenced.

The spectator hill within the proposed Centre of Excellence and Grandstand site was primarily grassed. However, the grass cover was limited in areas and there was some evidence of erosion in the east section of the site. The erosion appeared to be associated with funnelling of patron foot traffic during events.
The grass cover within the proposed car park extension site is very limited and some evidence of erosion associated with surface water run off was observed in the south section of the site.

2.4.4 Visible or Olfactory Indicators of Contamination and Fill Material

Exposed silty sand fill soils was evident at the site in areas were grass cover was limited. The fill contained inclusions of gravel and minor amounts of building rubble (e.g. brick, tile and concrete fragments).

A fibre cement fragment was identified on the surface in the north-west section of Brookvale Oval (outside the site boundaries). The material was considered to be a potential Asbestos Containing Material (ACM) and was sampled (sample ref: AMF3) by our field staff. The location of AMF3 is shown in Figure 2.

2.4.5 Presence of Drums/Chemicals

Stored chemicals were not identified at the site. However, two large above ground plastic tanks were located in the north section of the Centre of Excellence and Grandstand site, north of the scoreboard building. The tanks appeared to be approximately 4m in diameter and were most likely used for irrigation purposes.

2.4.6 Drainage and Services

Surface water at the proposed Centre of Excellence and Grandstand site were expected to run off the paved surfaces in the north section of the site in sympathy with the topography before infiltrating into the grassed areas. Surface water from the paved area in the south section of the site were expected to run towards the surface drain collection pits, before entering the stormwater system.

Surface water at the proposed car park extension site were expected to run off the paved surfaces before infiltrating into grassed areas. There appeared to be no provisions for surface water collection, and as discussed in Section 2.4.3, some erosion was evident and attributed to excess surface flows in the proposed car park extension site.

2.4.7 Sensitive Environments

Sensitive environments such as wetlands, ponds, creeks or extensive areas of natural vegetation were not identified on site or in the immediate surrounds.

2.4.8 Landscaped Areas and Visible Signs of Plant Stress

A number of large trees up to approximately 20m in height were observed along the northern boundary of the proposed Centre of Excellence and Grandstand site and to the west of the proposed car park extension site. The trees appeared healthy and showed no obvious indicators of dieback/stress.

2.5 Surrounding Land Use

During the site inspection, JKE observed the following land uses in the immediate surrounds of Brookvale Oval:

- North and up gradient – A public park and residential land use beyond Federal Parade. A child care centre and groundsman's shed were located approximately 50m to the north-east and cross gradient of the proposed Centre of Excellence and Grandstand site;
- South and down gradient – Commercial and industrial land use beyond Pittwater Road. A service station was located approximately 200m to the south-east of the proposed Centre of Excellence and Grandstand site and the proposed car park extension site;
- East and cross gradient – Residential land use beyond Pine Avenue; and
- West and cross gradient – St Augustine's School College beyond Alfred Road.

Based on the regional and site topography, the land uses in the immediate surrounds were not considered to be potential contamination sources for the site, particularly the service station due to it's down/cross gradient location.

2.6 Underground Services

The 'Dial Before You Dig' (DBYD) plans were reviewed for the assessment in order to establish whether any major underground services exist at the site or in the immediate vicinity that could act as a preferential pathway for contamination migration.

The DBYD plans indicated that a stormwater service extends through the north-east section of the proposed Centre of Excellence and Grandstand site (see Figure 2). There is a potential for the stormwater trench to act as a preferential pathway for contamination migration (i.e. through relatively permeable backfill), however this is unlikely to be of concern based on the low-risk land uses (i.e. residential/recreational) surrounding this infrastructure.

2.7 Section 10.7 Planning Certificate

The section 10.7 (2 and 5) planning certificates were reviewed for the assessment. Copies of the certificates are attached in the appendices. A summary of the relevant information is outlined below:

- The land is not deemed to be: significantly contaminated; subject to a management order; subject of an approved voluntary management proposal; or subject to an on-going management order under the provisions of the CLM Act 1997;
- The land is not the subject of a Site Audit Statement (SAS);
- The residential dwelling erected on Lot 1 DP114027 was not identified in the Loose-Fill Asbestos insulation register as containing loose-fill asbestos ceiling insulation. A residential dwelling was not observed on this Lot at the time of the site inspection;
- The land is not located in a heritage conservation area;
- The land does not include or comprise critical habitat; and
- An environmental heritage item is situated on the land as identified in Schedule 5 of the Warringah Local Environmental Plan 2011.

3 GEOLOGY AND HYDROGEOLOGY

3.1 Regional Geology

Regional geological information presented in the Lotsearch report (attached in the appendices) indicated that the site is underlain by Triassic aged deposits of medium to fine-grained quartz sandstone, very minor shale and laminate lenses.

3.2 Acid Sulfate Soil (ASS) Risk and Planning

The site is not located in an ASS risk area according to the risk maps prepared by the Department of Land and Water Conservation.

ASS information presented in the Lotsearch report indicated that the site is located within a Class 5 area. Works in Class 5 areas that could pose an environmental risk in terms of ASS include works within 500m of adjacent Class 1,2,3,4 land which are likely to lower the water table below 1m AHD on the adjacent Class 1,2,3,4 land. Although the proposed development works would not represent a risk with regards to the above description, the ESA included soil sampling and analysis for confirmatory purposes as discussed later in this report.

3.3 Hydrogeology

Hydrogeological information presented in the Lotsearch report indicated that the regional aquifer on-site and in the areas immediately surrounding the site includes porous, extensive aquifers of low to moderate productivity. There were a total of 35 registered bores within the report buffer of 2,000m. In summary:

- There was a bore (ref: GW108144) registered for recreation purposes, which appeared to be located within the proposed Centre of Excellence and Grandstand site area. JKE are of the opinion that the groundwater pumped from the bore is likely to be utilised for irrigation of the pitch and surrounding grounds. Additionally, the two plastic tanks located at the site are likely associated with the storage of pumped groundwater. The drillers log information for the bore identified sand to a depth of 4.0mBGL, clay between depths of 4.0-15mBGL underlain by sandstone and shale bedrock. The bore was installed to 150mBGL and the Standing water levels (SWLs) was given as 15mBGL;
- The majority of the surrounding bores were registered for monitoring purposes and located to the south and down gradient from the site. The closest registered bore to the site was located approximately 557m to the south; and
- There appeared to be a cluster of bores registered for domestic purposes approximately 1,000m to the south-east of the site. The area appeared to be occupied for residential purposes and is considered to be down gradient of the site and located on the far side of Greendale Creek.

The information reviewed for this assessment indicated that the subsurface conditions at the site are expected to consist of moderate to high permeability (alluvial) soils overlying relatively deep bedrock. Abstraction and use of groundwater at the site or in the immediate surrounds appears to be viable under these conditions. This is evident by the registration of a bore at the site for recreational purposes.

The site is located within an urban/residential, commercial and industrial area. The use of groundwater for drinking water purposes is considered highly unlikely. Additionally, there is a reticulated water supply in the area and plans supplied show connection of the proposed Centre of Excellence and Grandstand building to the supply. However, potential secondary human exposure to contaminated groundwater could occur via direct contact and accidental ingestion of water intended for irrigation purposes. The assessment of groundwater in the ESA has therefore considered this potential source, pathway and receptor (SPR) linkage.

Considering the local topography and surrounding land features, JKE would generally expect groundwater to flow towards the south-east towards Greendale Creek. Greendale Creek runs through a commercial and industrial area of Brookvale and is not considered suitable for recreational use.

3.4 Receiving Water Bodies

The site location and regional topography indicates that excess surface water flows have the potential to enter the local stormwater system stormwater system which likely flows to Greendale Creek. This water body is a potential receptor (fresh water ecological system).

4 SITE HISTORY INFORMATION

4.1 Review of Historical Aerial Photographs

Historical aerial photographs were included in the Lotsearch report. JKE has reviewed the photographs and summarised relevant information in the following table:

Table 4-1: Summary of Historical Aerial Photographs

Year	Details
1943	The north section of the oval extended onto the north and central section of the proposed Centre of Excellence and Grandstand site. There appeared to be three rectangular shaped buildings in the north section of the site. A row of trees extended along the northern boundary. The remainder of the site appeared to be grassed with the exception of an internal driveway which extended onto the site from the south-east and ran towards the buildings. The proposed car park extension site appeared to be partially occupied by a two rectangular shaped buildings which occupied part of the north and south sections of the site. Brookvale Oval appeared to be occupied for recreational purposes, possibly including a race track and cricket pitch. There appeared to be a number of large rectangular shaped buildings in the north-west section of the oval. The surrounding area appeared to be occupied for residential purposes with some evidence of commercial/light industrial use to the south. Parts of the surrounding area, particularly to the north and west, appeared undeveloped.
1951	The proposed Centre of Excellence and Grandstand site generally appeared similar to the previous photograph. However, two of the rectangular shaped buildings in the north section of the site appeared to have been demolished. The proposed car park extension site generally appeared similar to the previous photograph. Brookvale Oval and the surrounding area generally appeared similar to the previous photograph. However, the residential land use to the west and east appeared to have increased.
1956	The proposed Centre of Excellence and Grandstand site, and the car park extension site, generally appeared similar to the previous photograph. Brookvale Oval generally appeared similar to the previous photograph. However, additions appeared to have been undertaken to the buildings and new buildings had been constructed in the north-west section of the oval. The surrounding area generally appeared similar to the previous photograph. However, the residential and commercial/light industrial development to the south appeared to have increased. Additionally, what appeared to be buildings associated with a school (St Augustine's College) were evident to the west of Brookvale Oval.
1961	The proposed Centre of Excellence and Grandstand site appeared to have been altered to accommodate spectator seating areas. The hillside adjacent to the track/oval appeared to have undergone some earthworks to facilitate this development via the creation of a sloping embankment around the northern side of the track/oval. , car park extension site and the surrounding areas generally appeared similar to the previous photograph.
1965	The site and the surrounding area generally appeared similar to the previous photograph.

Year	Details
1970	The proposed Centre of Excellence and Grandstand site had been redeveloped (in conjunction with Brookvale Oval in general) to accommodate a spectator hill, the new rectangular playing field and surrounding footpaths and seating. Significant earthworks would have occurred on the proposed Centre of Excellence and Grandstand site to facilitate this. The proposed car park extension site generally appeared similar to the previous photograph. Brookvale Oval had been redeveloped to accommodate the rectangular playing field. Significant earthworks had been undertaken to construct the spectator mounds. The surrounding area generally appeared similar to the previous photograph. The residential and commercial/light industrial development in the surrounding areas appeared to have increased.
1982	The proposed Centre of Excellence and Grandstand site generally appeared similar to the previous photograph. However, the last of the rectangular shaped buildings appeared to have been demolished and a smaller rectangular shaped building constructed approximately in the same location. The building appeared consistent with the existing (2019) score board building observed by JKE during the site inspection. The proposed car park extension site generally appeared similar to the previous photograph. The building which formally occupied part of the north section of the site appeared to have been demolished. Brookvale Oval generally appeared similar to the previous photograph. However, what appeared to be new grandstand's had been constructed to the west and south of the playing field. The commercial/light industrial use to the south of the site appeared to have increased and residential land use decreased. Additionally, what appeared to be a grassed recreational open space area, was evident to the north of the site.
1991	The proposed Centre of Excellence and Grandstand site generally appeared similar to the previous photograph. The proposed car park extension site generally appeared similar to the previous photograph. The majority of the buildings in the north-west section of Brookvale Oval appeared to have been demolished. The surrounding area generally appeared similar to the previous photograph.
2005	The proposed Centre of Excellence and grandstand site generally appeared similar to the previous photograph. However, what appeared to be a concrete paved pedestrian path extended onto the site from the west. The proposed car park extension site generally appeared similar to the previous photograph. The remaining building which occupied part of the south section of the site appeared to have been demolished. A new grandstand had been constructed in the south-west section of Brookvale Oval, linking to the grandstand to the west and south of the playing field. The surrounding area generally appeared similar to the previous photograph.
2009	The site and the surrounding area generally appeared similar to the previous photograph.

4.2 Review of Historical Land Title Records

Historical land title records were reviewed for the assessment. The record search was undertaken by Advance Legal Searchers Pty Ltd. Copies of the title records are attached in the appendices. The title records indicate the following:

- Lot 6 DP 785409 and Lot 1 DP 784268 were privately owned between 1911 and 1929. The owners were listed as a spinster and survey draftsman. These lots were subsequently owned by The Council of the Shire of Warringah from 1929; and
- Lot B DP 966128 and Lot 1 DP 114027 were privately owned between 1907 and 1911. The owner was listed as a spinster. These Lots have been owned by The Council of the Shire of Warringah since 1911.

The historical land title records did not identify any particular land uses which could have resulted in significant contamination. The professions of the individuals listed on the title records are unlikely to be associated with site related activities.

4.3 Review of Council Records

Council records for Brookvale Oval were sourced under an informal access to information request and were reviewed for the assessment. The available records only dated back to 1993. The review of the records did not identify anything particularly relevant potential site contamination or hazardous building materials. However, a Manly Daily newspaper article, dated 25 May 1996, suggested that eight large brush box trees located along the west section of the Brookvale Oval and along Alfred Street appeared to have been poisoned. The exact location of the poisoned trees could not be determined from the available information. JKE note that there are no trees present within the proposed car park extension site.

4.4 SafeWork NSW Records

SafeWork NSW records were reviewed for the assessment. Copies of relevant documents are attached in the appendices. The search did not identify any licences to store dangerous goods including underground fuel storage tanks (USTs), above ground storage tanks (ASTs) or chemicals at the site.

4.5 NSW EPA Records

The Lotsearch report included information from the NSW EPA databases for the following:

- Records maintained in relation to contaminated land under Section 58 of the CLM Act 1997;
- Records of sites notified in accordance with the Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997 (2015)[6]; and
- Licensed activities under the Protection of the Environment Operations Act (1997)[7].

[6] NSW EPA, (2015). *Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997.* (referred to as Duty to Report Contamination)

[7] Protection of the Environment Operations Act 1997 (NSW) (referred to as POEO Act 1997)

The search included the site area and surrounding areas in the report buffer of 1,000m. The search indicated the following:

- On-Site:
  - There were no records for the site under Section 58 of the CLM Act 1997;
  - The site has not been notified with regards to the Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997; and
  - There were no records for licenced activities at the site under the POEO Act 1997.
- Off-Site:
  - There were no records for off-site properties in the report buffer under Section 58 of the CLM Act 1997;
  - There were seven properties listed/notified under the CLM Act 1997 within in the report buffer. Regulation of the properties was not required. The majority of the properties were associated with storage of petroleum products (e.g. service stations). All of the listed properties were located to the south-west, south and south-east of Brookvale Oval and are down gradient of the site. These listed properties are not considered to be a potential source of contamination which has the potential to migrate on to the site; and
  - The records included current licenced activities under the POEO Act 1997 for three properties within the report buffer. The listed activities included petroleum products and fuel production, resource recovery and waste storage. All of the listed properties were located to the south-west of Brookvale Oval and are down/cross gradient of the site. These listed properties and site activities are not considered to be a potential source of contamination which has the potential to migrate on to the site.

4.6 Historical Business Directory and Additional Lotsearch Information

Historical business records for the site and surrounding areas in the report buffer were included in the Lotsearch report. The records indicated the following:

- There were no historical business records for the site;
- There were approximately 55 motor mechanics businesses registered within the report buffer during the 1950s and 1990s;
- There were approximately two dry cleaner business registered within the report buffer during the 1950s and 1980s;
- There was a business registered approximately 75m to the west of Brookvale Oval for clothing – manufacturing and/or wholesale purposes (including waterproof clothing) during between 1965 and 1982. The approximate location of the business appears consistent with the location of St Augustine's College, which has occupied the premises since approximately 1956. JKE are of the opinion that the clothing business is likely associated with the College uniform shop and is therefore not considered to be a potential off-site source of Per-and poly-fluoroalkyl substances (PFAS); and
- There were numerous business registered to the south-west, south and south-east of the site within the reporting buffer during the 1950s and 1990s. Registered business activities included the manufacturing or wholesale of metal, leather goods, clothing, transformers, electrical equipment,

umbrellas, surgical equipment and plastic products. Other identified business activities included engineering, metal fabrication, die and press tool makers, printers/letterpress and motor wreckers

JKE are of the opinion that the historical businesses in the report buffer are unlikely to represent potential off-site sources of site contamination. The majority of the listed properties were located to the south-west, south and south-east of Brookvale Oval and are cross or down gradient of the site. The listed properties are not considered to be a potential source of contamination which has the potential to migrate on to the site.

In addition to the above, JKE have reviewed additional information contained within the Lotsearch report and note the following:

- The site and the buffer area are not listed under the PFAS investigation programs;
- The site and the buffer area are not listed as former Gasworks sites;
- The site and the buffer area are not listed as James Hardie Asbestos Waste Sites;
- The site and buffer area are located within a UPSS sensitive area;
- The site Brush Box and Camphor Laurel tress surrounding Brookvale Park are identified as Local Environmental Planning Instrument heritage item;
- There were no state heritage items at the site or in the immediate surrounds; and
- There were no significant ecological constraints at the site or in the immediate surrounds.

Considering the above, JKE are of the opinion that PFAS is unlikely to pose a risk at the site based on the proposed land use and development details.

4.7 Summary of Site History Information

A time line summary of the historical land uses and activities is presented in the table below. The information presented in the table is based on a weight of evidence assessment of the site history documentation and observations made by JKE.

Table 4-2: Summary of Historical Land Uses

Year(s)	Potential Land Use / Activities
Pre-1911	Land use unknown.
1911 to current	Used for recreational purposes, possibly including a race track and sports ground. Two buildings appeared to have been demolished at the proposed Centre of Excellence and Grandstand site between 1943 and 1951. The site appeared to have been excavated around the 1960s then filled to create the existing spectator mound around the 1970s. A third building appeared to have been demolished between 1970 and 1982. A building appeared to have been demolished at the proposed car park extension site between 1970 and 1982. A second building appeared to have been demolished between 19914 and 2005.

4.8 Integrity of Site History Information

The majority of the site history information was obtained from government organisations as outlined in the relevant sections of this report. The veracity of the information from these sources is considered to be relatively high. A certain degree of information loss can be expected given the lack of specific land use details over time. JKE have relied upon the Lotsearch report and have not independently verified any information contained within. However, it is noted that the Lotsearch report is generated based on databases maintained by various government agencies and is expected to be reliable.

5 CONCEPTUAL SITE MODEL

NEPM (2013) defines a CSM as a representation of site related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The CSM for the site is presented in the following sub-sections and is based on the site information (including the site inspection information) and the review of site history information. Reference should also be made to the figures attached in the appendices.

A review of the CSM in relation to SPR linkages has been undertaken as part of the Tier 1 risk assessment process, as outlined in Section 10.

5.1 Potential Contamination Sources/AEC and CoPC

The potential contamination sources/AEC and CoPC are presented in the following table:

Table 5-1: Potential (and/or known) Contamination Sources/AEC and Contaminants of Potential Concern

Source / AEC	CoPC
Fill material – The site appears to have been historically filled to achieve the existing levels. The fill may have been imported from various sources and could be contaminated. The aerial photographs indicate that the proposed Centre of Excellence and Grandstand site was filled sometime between 1965 and 1970 to create the spectator hill. The fill is likely to have been imported from off-site.	Heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), petroleum hydrocarbons (referred to as total recoverable hydrocarbons – TRHs), benzene, toluene, ethylbenzene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), organophosphate pesticides (OPPs), polychlorinated biphenyls (PCBs) and asbestos.
Use of pesticides – Pesticides may have been used beneath the buildings and/or around the site for pest control.	Heavy metals and OCPs
Hazardous Building Material – Hazardous building materials may be present as a result of former building and demolition activities. These materials may also be present in the existing buildings located in the north section of the proposed Centre of Excellence and Grandstand site. During the site inspection a fibre cement fragment (sample ref: AMF3) was identified on the surface in the north-west section of Brookvale Oval as shown on Figure 2.	Asbestos, lead and PCBs

5.2 Mechanism for Contamination, Affected Media, Receptors and Exposure Pathways

The mechanisms for contamination, affected media, receptors and exposure pathways relevant to the potential contamination sources/AEC are outlined in the following CSM table:

Table 5-2: CSM

Potential mechanism for contamination	Potential mechanisms for contamination include: • Fill material – importation of impacted material, 'top-down' impacts (e.g. placement of fill, leaching from surficial material etc), or sub-surface release (e.g. impacts from buried material); • Use of pesticides – 'top-down' and spills (e.g. during normal use, application and/or improper storage); • Hazardous building materials – 'top-down' (e.g. demolition resulting in surficial impacts in unpaved areas); and • Stormwater service – 'top down' filling or 'sub-surface release' (e.g. from trench backfill).
Affected media	Soil and groundwater have been identified as potentially affected media.
Receptor identification	Human receptors include site occupants/users (including adults and children), ground maintenance staff, construction workers and intrusive maintenance workers. Off-site human receptors include adjacent land users and groundwater users. Ecological receptors include terrestrial organisms and plants within unpaved areas (including the proposed landscaped areas), and freshwater ecology in Greendale Creek.
Potential exposure pathways	Potential exposure pathways relevant to the human receptors include ingestion, dermal absorption and inhalation of dust (all contaminants) and vapours (volatile TRH, naphthalene and BTEX). The potential for exposure would typically be associated with the construction and excavation works, and future use of the site. Potential exposure pathways for ecological receptors include primary/direct contact and ingestion. Exposure during future site use could occur via direct contact with soil in unpaved areas, inhalation of airborne asbestos fibres during soil disturbance, or inhalation of vapours within enclosed spaces such as the buildings. Groundwater is not expected to be encountered based on the proposed development details provided. However, there is groundwater bore (ref: GW108144) in use at the proposed Centre of Excellence and Grandstand site for recreational (irrigation) purposes. Potential exposure pathways for human receptors include secondary contact as a result of bore water use on site for irrigation. Groundwater in the area is considered likely to flow towards Greendale Creek located to the south-west of the site. Greendale Creek is considered unlikely to be utilised for human recreational activities. However, potential exposure pathways for freshwater ecological receptors include primary/direct contact and ingestion.
Potential exposure mechanisms	The following have been identified as potential exposure mechanisms for site contamination: • Vapour intrusion into the proposed building (either from soil contamination or volatilisation of contaminants from groundwater);

	• Contact (dermal, ingestion or inhalation) with exposed soils in landscaped areas and/or unpaved areas; • Migration of groundwater off-site and into Greendale Creek, including the freshwater aquatic ecosystems; and • Use of groundwater on-site for irrigation purposes and migration of groundwater off-site into areas where groundwater is or may be utilised as a resource.
Presence of preferential pathways for contaminant movement	The DBYD plans indicated that a stormwater service extends through the north-east section of the proposed Centre of Excellence and Grandstand site (see Figure 2). There is a potential for the stormwater trench to act as a preferential pathway for contamination migration (i.e. through relatively permeable backfill), however this is unlikely to be of concern based on the low-risk land uses (i.e. residential/recreational) surrounding this infrastructure.

6 SAMPLING, ANALYSIS AND QUALITY PLAN

6.1 Data Quality Objectives (DQO)

Data Quality Objectives (DQOs) were developed to define the type and quality of data required to achieve the project objectives outlined in Section 1.2. The DQOs were prepared with reference to the process outlined in Schedule B2 of NEPM (2013) and the Guidelines for the NSW Site Auditor Scheme, 3rd Edition (2017)[8]. The seven-step DQO approach for this project is outlined in the following sub-sections.

The DQO process is validated in part by the Data Quality Assurance/Quality Control (QA/QC) Evaluation. The Data (QA/QC) Evaluation is summarised in Section 8.1 and the detailed evaluation is provided in the appendices.

6.1.1 Step 1 - State the Problem

The CSM identified potential sources of contamination/AEC at the site that may pose a risk to human health and the environment. Investigation data is required to assess the contamination status of the site, assess the risks posed by the contaminants in the context of the proposed development/intended land use, and assess whether remediation is required.

A waste classification is required prior to off-site disposal of excavated soil/bedrock.

6.1.2 Step 2 - Identify the Decisions of the Study

The objectives of the assessment are outlined in Section 1.2. The decisions to be made reflect these objectives and are as follows:

- Did the site inspection, or does the historical information identify potential contamination sources/AEC at the site?
- Are any results above the SAC?
- Do potential risks associated with contamination exist, and if so, what are they?
- Is remediation required?
- Is the site characterisation sufficient to provide adequate confidence in the above decisions?
- Is the site suitable for the proposed development, or can the site be made suitable subject to further characterisation and/or remediation?

6.1.3 Step 3 - Identify Information Inputs

The primary information inputs required to address the decisions outlined in Step 2 include the following:

- Site information, including site observations and site history documentation;
- Sampling of potentially affected media, including soil and groundwater;
- Observations of sub-surface variables such as soil type, photo-ionisation detector (PID) concentrations, odours and staining, and groundwater physiochemical parameters;
- Laboratory analysis of soils, potential ACM and groundwater for the CoPC identified in the CSM; and

[8] NSW EPA (2017). *Guidelines for the NSW Site Auditor Scheme, 3rd ed.* (referred to as Site Auditor Guidelines 2017)

- Field and laboratory QA/QC data.

6.1.4 Step 4 - Define the Study Boundary

The sampling will be confined to the site boundaries as shown in Figure 2 (spatial boundary). The sampling was completed between 21 August 2019 and 4 September 2019 (temporal boundary). The assessment of potential risk to adjacent land users has been made based on data collected within the site boundary.

Sampling was not undertaken within the existing building footprints or on the pitch due to access constraints associated with the proposed Centre of Excellence and grandstand site.

6.1.5 Step 5 - Develop an Analytical Approach (or Decision Rule)

6.1.5.1 Tier 1 Screening Criteria

The laboratory data will be assessed against relevant Tier 1 screening criteria (referred to as SAC), as outlined in Section 7. Exceedances of the SAC do not necessarily indicate a requirement for remediation or a risk to human health and/or the environment. Exceedances are considered in the context of the CSM and valid SPR-linkages.

For this assessment, the individual results have been assessed as either above or below the SAC. Where appropriate, data are assessed against valid statistical parameters to characterise the data population. This may include calculation and application of mean values and/or 95% upper confidence limit (UCL) values for the data set, with regards to the NEPM (2013) framework and other relevant guidelines made under the CLM Act 1997. UCLs are considered acceptable where the UCL is below the SAC, the standard deviation of the data is less than 50% of the SAC and none of the individual concentrations are more than 250% of the SAC.

6.1.5.2 Field and Laboratory QA/QC

Field QA/QC included analysis of inter-laboratory duplicates, intra-laboratory duplicates, trip spike, trip blank and rinsate samples. Further details regarding the sampling and analysis undertaken, and the acceptable limits adopted, is provided in the Data Quality (QA/QC) Evaluation in the appendices.

The suitability of the laboratory data is assessed against the laboratory QA/QC criteria which is outlined in the attached laboratory reports. These criteria were developed and implemented in accordance with the laboratory's National Association of Testing Authorities, Australia (NATA) accreditation and align with the acceptable limits for QA/QC samples as outlined in NEPM (2013) and other relevant guidelines.

In the event that acceptable limits are not met by the laboratory analysis, other lines of evidence are reviewed (e.g. field observations of samples, preservation, handling etc) and, where required, consultation with the laboratory is undertaken in an effort to establish the cause of the non-conformance. Where uncertainty exists, JKE typically adopt the most conservative concentration reported (or in some cases, consider the data from the affected sample as an estimate).

6.1.5.3 Appropriateness of Practical Quantitation Limits (PQLs)

The PQLs of the analytical methods are considered in relation to the SAC to confirm that the PQLs are less than the SAC. In cases where the PQLs are greater than the SAC, a discussion of this is provided.

6.1.6 Step 6 – Specify Limits on Decision Errors

To limit the potential for decision errors, a range of quality assurance processes are adopted. A quantitative assessment of the potential for false positives and false negatives in the analytical results is undertaken with reference to Schedule B(3) of NEPM (2013) using the data quality assurance information collected.

Decision errors can be controlled through the use of hypothesis testing. The test can be used to show either that the baseline condition is false or that there is insufficient evidence to indicate that the baseline condition is false. The null hypothesis is an assumption that is assumed to be true in the absence of contrary evidence. For this assessment, the null hypothesis has been adopted which is that, there is considered to be a complete SPR linkage for the CoPC identified in the CSM unless this linkage can be proven not to (or unlikely to) exist. The null hypothesis has been adopted for this assessment.

6.1.7 Step 7 - Optimise the Design for Obtaining Data

The most resource-effective design will be used in an optimum manner to achieve the assessment objectives. Adjustment of the assessment design can occur following consultation or feedback from project stakeholders. For this investigation, the design was optimised via consideration of the various lines of evidence used to select the sample locations, the media being sampled, and also by the way in which the data were collected.

The sampling plan and methodology are outlined in the following sub-sections.

6.2 Soil Sampling Plan and Methodology

The soil sampling plan and methodology adopted for this assessment is outlined in the table below:

Table 6-1: Soil Sampling Plan and Methodology

Aspect	Input
Sampling Density	The sampling density for asbestos in soil included sampling at twice the minimum sampling density recommended in the Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2009)[9] (endorsed in NEPM 2013). This sampling density is appropriate for detailed site characterisation, such as for a Stage 2 ESA. Samples for other contaminants were collected from 14 locations (BH201, BH203, BH205, BH207, BH209, BH211, BH213, BH215, BH217, BH219, BH221, BH223, BH224 and BH227) within the proposed Centre of Excellence and Grandstand development area and six locations (BH229, BH232,

[9] Western Australian (WA) Department of Health (DoH), (2009). Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia. (referred to as WA DoH 2009)

Aspect	Input
	BH233, BH236, BH237 and BH240) with the proposed car park extension development area. The sampling locations are shown on the attached Figure 2. The sampling densities meet the minimum density recommended number of locations for hotspot identification (relevant to each of the site areas), as outlined in the NSW EPA Contaminated Sites Sampling Design Guidelines (1995)[10]. Samples for the preliminary ASS assessment were obtained from four sampling locations (BH206, BH210, BH228 and BH239). This number of sampling locations meet the minimum sampling density recommended in the ASS Manual 1988 of a minimum of four sampling locations for a site with an area up to 1ha (10,000m^2).
Sampling Plan	A systematic sampling plan was proposed and generally maintained for the proposed car park extension site. However, the systematic sampling plan for the proposed Centre of Excellence and Grandstand site was altered to account for access limitations as a result of buildings, water tanks, steep gradient of the spectator hill, timber bench seating etc. The sampling locations for the proposed carpark extension site were placed approximately on a systematic plan with a grid spacing of approximately 10m between sampling locations. The sampling locations for the proposed Centre of Excellence and Grandstand site were placed approximately on an as near to systematic plan as possible with a spacing of approximately 20m between sampling locations. A systematic plan was considered suitable to identify hotspots to a 95% confidence level and calculate UCLs for specific data populations (UCLs were only applied were appropriate and in accordance with the DQOs).
Set-out and Sampling Equipment	Sampling locations were set out using a hand held GPS unit (with an accuracy of ±5m). In-situ sampling locations were checked for underground services by an external contractor prior to sampling. Samples were primarily collected using a drill rig equipped with 150mm diameter spiral flight augers. Soil samples were obtained from a Standard Penetration Test (SPT) split-spoon sampler, or directly from the auger when conditions did not allow use of the SPT sampler. Some soil samples for bulk asbestos quantification were collected using hand tools (shovel, crow bar and hand auger).
Sample Collection and Field QA/QC	Soil samples were obtained on 21 August 2019 to 26 August 2019 in accordance with the standard sampling procedure (SSP) attached in the appendices. Soil samples were collected from the fill and natural profiles based on field observations. The sample depths are shown on the logs attached in the appendices. Samples were placed in glass jars with plastic caps and Teflon seals with minimal headspace. Samples for asbestos analysis were placed in zip-lock plastic bags. During sampling, soil at selected depths was split into primary and duplicate samples for field QA/QC analysis.

[10] NSW EPA, (1995), *Contaminated Sites Sampling Design Guidelines.* (referred to as EPA Sampling Design Guidelines 1995)

Aspect	Input
	Soil ASS samples were placed in plastic bags and sealed with plastic ties with minimal headspace.
Field Screening	A portable Photoionisation Detector (PID) fitted with a 10.6mV lamp was used to screen the samples for the presence of volatile organic compounds (VOCs). PID screening for VOCs was undertaken on soil samples using the soil sample headspace method. VOC data was obtained from partly filled zip-lock plastic bags following equilibration of the headspace gases. PID calibration records are maintained on file by JKE. The field screening for asbestos quantification included the following: • A representative bulk sample was collected from fill at 1m intervals, or from each distinct fill profile. The bulk sample intervals are shown on the attached borehole logs (shown as "DB" in the sample column); • Each sample was weighed using an electronic scale. Due to the use of the auger, a 10L sample could not be obtained at all times; • Each bulk sample was passed through a sieve with a 7.1mm aperture and inspected for the presence of fibre cement; • The condition of fibre cement or any other suspected asbestos materials was noted on the field records; and • If observed, any fragments of fibre cement or potential FA in the bulk sample were collected, placed in a zip-lock bag and assigned a unique identifier. Calculations for asbestos content were undertaken based on the requirements outlined in Schedule B1 of NEPM (2013), as summarised in Section 7.1.
Decontami-nation and Sample Preservation	Sampling personnel used disposable nitrile gloves during sampling activities. Soil samples were preserved by immediate storage in an insulated sample container with ice in accordance with the SSP. On completion of the fieldwork, the samples were stored temporarily in fridges in the JKE warehouse before being delivered in the insulated sample container to a NATA registered laboratory for analysis under standard chain of custody (COC) procedures.

6.3 Groundwater Sampling Plan and Methodology

The groundwater sampling plan and methodology is outlined in the table below:

Table 6-2: Groundwater Sampling Plan and Methodology

Aspect	Input
Sampling Plan	Groundwater monitoring wells were installed in BH206 (MW206), BH210 (MW210) and BH228 (MW228). The wells were positioned to gain a snap-shot of the groundwater conditions in the proposed Centre of Excellence and Grandstand portion of the site. Considering the topography and the location of the nearest down-gradient water body, MW210 and MW228 were considered to be in the up-gradient area of the site and would be expected to provide an indication of groundwater flowing onto (beneath) the site from the north-west. MW206 was considered to be in the intermediate to down-gradient area of the site and would be expected to provide an indication of groundwater flowing across (beneath) the site and beyond the down-gradient site boundary.
Monitoring Well Installation Procedure	The monitoring well construction details are documented on the appropriate borehole logs attached in the appendices. The monitoring wells were installed to depths of approximately 9m to 12mBGL. The wells were generally constructed as follows: • 50mm diameter Class 18 PVC (machine slotted screen) was installed in the lower section of the well to intersect groundwater; • 50mm diameter Class 18 PVC casing was installed in the upper section of the well (screw fixed); • A 2mm sand filter pack was used around the screen section for groundwater infiltration; • A hydrated bentonite seal/plug was used on top of the sand pack to seal the well; and • A gatic cover was installed at the surface with a concrete plug to limit the inflow of surface water.
Monitoring Well Development	The monitoring wells were developed on 29 August 2019 using a submersible electrical pump in accordance with the SSP. Due to the hydrogeological conditions (which included mostly clayey sand soils), groundwater inflow into the wells was relatively low, therefore the wells were pumped until they were effectively dry. The field monitoring records and calibration data are attached in the appendices.
Groundwater Sampling	The monitoring wells were allowed to recharge for approximately five to seven days after development. Groundwater samples were obtained on 4 September 2019. Prior to sampling, the monitoring wells were checked for the presence of Light Non-Aqueous Phase Liquids (LNAPLs) using an inter-phase probe electronic dip meter. The monitoring well head space was checked for VOCs using a calibrated PID unit. The samples were obtained using a peristaltic pump. During sampling, the following parameters were monitored using calibrated field instruments (see SSP): • SWLs using an electronic dip meter; and • pH, temperature, electrical conductivity (EC), dissolved oxygen (DO) and redox potential (Eh) using a YSI Multi-probe water quality meter. Steady state conditions were considered to have been achieved when the difference in the pH measurements was less than 0.2 units, the difference in conductivity was less than 10%, and when the well was not in drawdown. Due to the hydrogeological conditions (which included mostly clayey sand soils), groundwater inflow into the wells was relatively low and steady state conditions were not achieved during sampling. Groundwater samples were obtained directly from the single use PVC tubing and placed in the sample containers.

Aspect	Input
	Duplicate samples were obtained by alternate filling of sample containers. This technique was adopted to minimise disturbance of the samples and loss of volatile contaminants associated with mixing of liquids in secondary containers, etc. Groundwater removed from the wells during development and sampling was transported to JKE's yard in jerry cans and stored in holding drums prior to collection by a licensed waste water contractor for off-site disposal. The field monitoring record and calibration data are attached in the appendices.
Decontaminant and Sample Preservation	The decontamination procedure adopted during sampling is outlined in the SSP attached in the appendices. During development, the pump and hose were flushed between monitoring wells with potable water followed by a pulse of demineralised water. The samples were preserved with reference to the analytical requirements and placed in an insulated container with ice in accordance with the SSP. On completion of the fieldwork, the samples were temporarily stored in a fridge at the EIS office, before being delivered in the insulated sample container to a NATA registered laboratory for analysis under standard COC procedures.

6.4 Analytical Schedule

The analytical schedule (for primary samples) is outlined in the following table:

Table 6-3: Analytical Schedule (Primary Samples)

Analyte/CoPC	Fill Samples	Natural Soil Samples	ACM Samples	Groundwater Samples
Heavy Metals	35	11	-	3
TRH/BTEX	35	11	-	3
PAHs	36	11	-	3
OCPs/OPPs	28	3	-	3
PCBs	28	3	-	3
Asbestos	56	-	3 in fill and 1 surface	-
ASS (sPOCAS)	-	12	-	-
pH/CEC/Clay Content (%)	3	-	-	-
pH/EC	-	-	-	3
Toxicity characteristic leachate procedure (TCLP) PAHs for waste classification purposes	2	-	-	-

6.4.1 Laboratory Analysis

Samples were analysed by an appropriate, NATA Accredited laboratory using the analytical methods detailed in Schedule B(3) of NEPM 2013. Reference should be made to the laboratory reports attached in the appendices for further details.

Table 6-4: Laboratory Details

Samples	Laboratory	Report Reference
All primary samples and field QA/QC samples including (intra-laboratory duplicates, trip blanks, trip spikes and field rinsate samples)	Envirolab Services Pty Ltd NSW, NATA Accreditation Number – 2901 (ISO/IEC 17025 compliance)	224849, 224849-A, 224846 and 225518
Inter-laboratory duplicates	Envirolab Services Pty Ltd VIC, NATA Accreditation Number – 2901 (ISO/IEC 17025 compliance)	17925

7 SITE ASSESSMENT CRITERIA (SAC)

The SAC were derived from the NEPM 2013 and other guidelines as discussed in the following sub-sections. The guideline values for individual contaminants are presented in the attached report tables and further explanation of the various criteria adopted is provided in the appendices.

7.1 Soil

Soil data were compared to relevant Tier 1 screening criteria in accordance with NEPM (2013) as outlined below.

7.1.1 Human Health

- Health Investigation Levels (HILs) for a 'public open space, secondary schools and footpaths' exposure scenario (HIL-C);
- Health Screening Levels (HSLs) for a 'low-high density residential' exposure scenario (HSL-A & HSL-B). These HSLs were considered to be most applicable for the initial Tier 1 screening because the HSL-C criteria for recreational land use do not account for vapour intrusion into buildings and because the HSL-D (commercial/industrial) criteria do not account for potential exposure to children within a building (i.e. the potential for exposure would be applicable for the Centre of Excellence and Grandstand development area). The HSL-A/HSL-B criteria are overly conservative in relation to the proposed car park extension development area, however this will be addressed where required as part of the Tier 1 risk assessment. HSLs were calculated based on conservative assumptions including a 'sand' type and a depth interval of 0m to 1m;
- Where exceedances of the HSLs were reported for hydrocarbons (TRH/BTEX and naphthalene), the soil health screening levels for direct contact presented in the CRC Care Technical Report No. 10 – Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document (2011)[11] were considered; and
- Asbestos was assessed against the HSL-C criteria. A summary of the asbestos criteria is provided in the table below:

Table 7-1: Details for Asbestos SAC

Guideline	Applicability
Asbestos in Soil	The HSL-C criteria were adopted for the assessment of asbestos in soil. The SAC adopted for asbestos were derived from the NEPM 2013 and are based on WA DoH (2009) guidance. The SAC include the following: • <0.02% w/w bonded ACM in soil; and • <0.001% w/w asbestos fines/fibrous asbestos (AF/FA) in soil. The NEPM (2013) and WA DoH (2009) also specify that the surface should be free of visible asbestos. Concentrations for bonded ACM concentrations in soil are based on the following equation which is presented in Schedule B1 of NEPM (2013):

[11] Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC Care), (2011). Technical Report No. 10 - *Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document*

Guideline	Applicability
	% w/w asbestos in soil = $\frac{\text{**% asbestos content x bonded ACM (kg)**}}{\text{Soil volume (L) x soil density (kg/L)}}$ We are of the opinion that the actual soil volume in a 10L bucket (as specified in the guidelines) varies considerably due to the presence of voids, particularly when assessing cohesive soils. Therefore, each bucket sample was weighed using electronic scales and the above equation was adjusted as follows (we note that the units have also converted to grams): **% w/w asbestos in soil =** $\frac{\text{**% asbestos content x bonded ACM (g)**}}{\text{Soil weight (g)}}$ In circumstance where AF or FA is observed in the bulk sample, these materials have been weighed and the above equation applied. However, we note that where matted FA is encountered we assume an asbestos content of 100%. Where degraded (friable) asbestos cement fragments are encountered as asbestos content of 15% is applied.

7.1.2 Environment (Ecological – terrestrial ecosystems)

- Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) for an 'urban residential and public open space' (URPOS) exposure scenario. These have been applied to all soil samples to account for cut to fill scenarios and the potential for the soil to be located within the top 2m as outlined in NEPM (2013). The criterion for benzo(a)pyrene has been increased from the value presented in NEPM (2013) based on the Canadian Soil Quality Guidelines[12];
- ESLs were adopted based on the most conservative soil texture (coarse grained); and
- EILs for selected metals were calculated using average site specific soil parameters for pH, cation exchange capacity and clay content. These data were used to select the added contaminant limit (ACL) values presented in Schedule B(1) of NEPM (2013), and published ambient background concentration (ABC) presented in the document titled Trace Element Concentrations in Soils from Rural and Urban Areas of Australia (1995)[13]. This method is considered to be adequate for the Tier 1 screening.

7.1.3 Management Limits and Direct Contact for Petroleum Hydrocarbons

Management limits for petroleum hydrocarbons (as presented in Schedule B1 of NEPM 2013) soil health screening levels for direct contact presented in the CRC Care Technical Report No. 10 – Heath screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document (2011)[14] were considered (if required) following review of the data and CSM.

[12] Canadian Council of Ministers of the Environment, (1999). *Canadian soil quality guidelines for the protection of environmental and human health: Benzo(a)Pyrene (1997)* (referred to as the Canadian Soil Quality Guidelines)

[13] Olszowy, H., Torr, P., and Imray, P., (1995), *Trace Element Concentrations in Soils from Rural and Urban Areas of Australia. Contaminated Sites Monograph Series No. 4*. Department of Human Services and Health, Environment Protection Agency, and South Australian Health Commission.

[14] Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC Care), (2011). Technical Report No. 10 - *Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document*

7.1.4 Waste Classification

Data for the waste classification assessment were assessed in accordance with the Waste Classification Guidelines, Part 1: Classifying Waste (2014)[15] as outlined in the following table:

Table 7-2: Waste Categories

Category	Description
General Solid Waste (non-putrescible)	• If Specific Contaminant Concentration (SCC) ≤ Contaminant Threshold (CT1) then Toxicity Characteristics Leaching Procedure (TCLP) not needed to classify the soil as general solid waste; and • If TCLP ≤ TCLP1 and SCC ≤ SCC1 then treat as general solid waste.
Restricted Solid Waste (non-putrescible)	• If SCC ≤ CT2 then TCLP not needed to classify the soil as restricted solid waste; and • If TCLP ≤ TCLP2 and SCC ≤ SCC2 then treat as restricted solid waste.
Hazardous Waste	• If SCC > CT2 then TCLP not needed to classify the soil as hazardous waste; and • If TCLP > TCLP2 and/or SCC > SCC2 then treat as hazardous waste.
Virgin Excavated Natural Material (VENM)	Natural material (such as clay, gravel, sand, soil or rock fines) that meet the following: • That has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial mining or agricultural activities; • That does not contain sulfidic ores or other waste; and • Includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved from time to time by a notice published in the NSW Government Gazette.

7.1.5 Acid Sulfate Soil

Soil data for the ASS assessment were compared to the action criteria for presented in the Acid Sulfate Soil Manual (1998)[16] as summarised below. The action criteria for 'coarse textured soils' were adopted.

Table 7-3: ASS Action Criteria

Category	Description	Criteria
Coarse Textured Soils	Sands to loamy sands	• pH - less than 5; • Total Actual Acidity (TAA)/Total Sulfide Acidity (TSA)/ Total Potential Acidity (TPA) (pH5.5) – greater than 18mol H^+/tonne; and • S_{pos} – greater than 0.03% sulfur oxidisable.
Medium Textured Soils	Sandy loams to light clays	• pH - less than 5; • TAA/TSA/TPA (pH5.5) – greater than 36mol H^+/tonne; and • S_{pos} – greater than 0.06% sulfur oxidisable.
Fine Textured Soils	Medium to heavy clays and silty clays	• pH - less than 5; • TAA/TSA/TPA (pH5.5) – greater than 62mol H^+/tonne; and • S_{pos} – greater than 0.1% sulfur oxidisable.

[15] NSW EPA, (2014). *Waste Classification Guidelines, Part 1: Classifying Waste.* (referred to as Waste Classification Guidelines 2014)

[16] Acid Sulfate Soils Management Advisory Committee (ASSMAC), (1998). *Acid Sulfate Soils Manual* (referred to as ASS Manual 1998)

7.2 Groundwater

Groundwater data were compared to relevant Tier 1 screening criteria in accordance with NEPM (2013), following an assessment of environmental values in accordance with the Guidelines for the Assessment and Management of Groundwater Contamination (2007)[17]. Environmental values for this assessment include aquatic ecosystems, human uses, and human-health risks in non-use scenarios.

7.2.1 Human Health

- The NEPM (2013) HSL-C criteria for recreational exposure scenarios are not limiting as they assume that no buildings are present and therefore no potential for vapour intrusion. JKE have selected the HSLs for a 'low-high density residential' exposure scenario (HSL-A/HSL-B). The HSLs were calculated based on the most conservative soil type (sand) and the likely depth at which groundwater will be encountered (2-4mBGL) based on the provided proposed development details;
- The NEPM (2013) does not provided HSLs for VOCs with the exception of BTEX. On this basis, JKE have adopted the Australian Drinking Water Guidelines 2011 (updated 2018)[18] for selected VOCs; and
- The SAC for recreational water quality has been derived from the National Health and Medical Research Council (NHMRC) Recreational Water Guidelines (2018)[19] which recommends that recreational criteria be adopted at 10 times that stipulated in the ADWG 2018. These guidelines are adopted as screening criteria to assess potential human-health risks in a scenario where a person may be incidentally exposed to irrigation water from the shallow groundwater system, or where other temporary exposure to shallow groundwater may occur.

7.2.2 Environment (Ecological - aquatic ecosystems)

Groundwater Investigation Levels (GILs) for 95% protection of freshwater species were adopted based on the Default Guideline Values in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2018)[20]. The 99% trigger values were adopted where required to account for bioaccumulation. Low and moderate reliability trigger values were also adopted for some contaminants where high-reliability trigger values don't exist.

[17] NSW Department of Environment and Conservation, (2007). *Guidelines for the Assessment and Management of Groundwater Contamination*

[18] National Health and Medical Research Council (NHMRC), (2018). *National Water Quality Management Strategy, Australian Drinking Water Guidelines 2011* (referred to as ADWG 2011)

[19] National Health and Medical Research Council (NHMRC), (2018). *Guidelines for Managing Risks in Recreational Water* (referred to as NHMRC 2018)

[20] Australian and New Zealand Governments (ANZG), (2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.* Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia (referred to as ANZG 2018)

8 RESULTS

8.1 Summary of Data (QA/QC) Evaluation

The data evaluation is presented in the appendices. In summary, JKE are of the opinion that the data are adequately precise, accurate, representative, comparable and complete to serve as a basis for interpretation to achieve the investigation objectives.

8.2 Subsurface Conditions

A summary of the subsurface conditions encountered during the investigation is presented in the following table. Reference should be made to the borehole logs attached in the appendices for further details.

Table 8-1: Summary of Subsurface Conditions

Profile	Description
Pavement	Asphaltic Concrete (AC) or concrete pavement was encountered at the surface in BH201, BH202, BH203, BH204, BH205, BH206, BH207, BH208, and BH225 extended to depths of approximately 0.03mBGL to 0.12mBGL.
Fill	Fill was encountered at the surface or beneath the pavement in all boreholes and extended to depths of approximately 0.2mBGL to 2.7mBGL. BH209, BH217, BH224, BH225, BH230, BH231 to BH235 were terminated in the fill due to obstructions at a maximum depth of approximately 1.5mBGL. The fill typically comprised silty clay, sandy clay, gravelly sand, clayey sand and silty sand with inclusions of ironstone, igneous and sandstone gravel, with some minor inclusions of ash, slag and building rubble (bricks, concrete and glass fragments). Potential ACM were identified in boreholes BH211, BH213 and BH214.
Natural Soil	Natural silty sand, sandy clay and clayey sand soils were encountered in all boreholes except boreholes BH201, BH202, BH203, BH204, BH205, BH206, BH207, BH208 and BH225. The natural soil extended to the termination of the boreholes and at a maximum depth of approximately 12.0mBGL (BH210 and BH218).
Bedrock	Bedrock was not encountered during the investigation.
Groundwater	Groundwater seepage was encountered during auger drilling in boreholes BH206, BH210 and BH228 at depths ranging from 7.5mBGL to 11.2m BGL. SWLs in the boreholes at the completion of drilling ranged from 7.35mBGL to 11.8mBGL. The remaining boreholes were dry during and a short time after completion of drilling. Further details regarding groundwater are provided in Section 0.

8.3 Field Screening

A summary of the field screening results are presented in the following table:

Table 8-2: Summary of Field Screening

Aspect	Details
PID Screening of Soil Samples for VOCs	PID soil sample headspace readings are presented in attached report tables and the COC documents attached in the appendices. The soil PID results in the soil samples ranged from 0ppm to 0.7ppm equivalent isobutylene. These results indicate a general lack of PID detectable VOCs in the soil samples.
Bulk Screening for Asbestos	The bulk field screening results are summarised in the attached report Tables H1 and H2. A bonded fragment of ACM (sample ref: AMF1) was identified in the bulk sample BH213 (0.3-1.4m). The ACM concentration of 0.0048%w/w was below the SAC of 0.02% w/w. All other ACM concentrations were below the SAC. Friable asbestos (assessed as FA) was identified in two bulk samples as summarised below: • A degraded ACM (sample ref: AMF4) was identified in the bulk sample BH211 (0.4-1.2m). The FA concentration of 0.0027%w/w (calculated based on the field data) was above the SAC of 0.001% w/w; and • Matted material (sample ref: AMF2) was identified in the bulk sample BH214 (0-0.3m). The FA concentration of 0.1046%w/w (calculated based on the field data) was above the SAC of 0.001% w/w.
PID Screening of Groundwater Samples for VOCs	The groundwater PID results ranged from 0ppm to 2.7ppm equivalent isobutylene. These results indicate a general lack of PID detectable VOCs in the monitoring well headspace and are consistent with expectations based on the groundwater analysis results.
Groundwater Depth & Flow	Groundwater monitoring wells were installed in BH206 (MW206), BH210 (MW210) and BH228 (MW228), and are shown on Figure 2. SWLs were measured in the monitoring wells during development on 29 August 2019. The SWLs ranged from approximately 6.54mBGL (MW206) to 9.22mBGL (MW228). SWLs measured in the wells during sampling on 4 September 2019 ranged from approximately 5.37mBGL (MW206) to 8.6mBGL (MW228). Groundwater RLs estimated based on these measurements ranged from RL19.4m (MW228) to RL21.0, (MW210). The groundwater RLs indicate that bulk excavations will not intercept groundwater. Groundwater may be intercepted during piling. Preparation of a groundwater contour plot was outside of the scope of works. Based on the topography and the groundwater levels encountered, JKE are of the opinion that groundwater likely flows southwards.
Groundwater Field Parameters	Field measurements recorded during sampling were as follows: - pH ranged from 4.49 to 5.36; - EC ranged from 279.9µS/cm to 367.2µS/cm; - Eh ranged from 77.2mV to 182.4mV; and - DO ranged from 1.5ppm to 2.9ppm.
LNAPLs petroleum hydrocarbons	Phase separated product (i.e. LNAPL) were not detected using the interphase probe during groundwater sampling.

8.4 Soil Laboratory Results

The soil laboratory results are compared to the relevant SAC in the attached report tables. A summary of the results assessed against the SAC is presented below:

8.4.1 Human Health and Environmental (Ecological) Assessment

Table 8-3: Summary of Soil Laboratory Results – Human Health and Environmental (Ecological)

Analyte	Results Compared to SAC
Heavy Metals	All heavy metals results were below the SAC.
TRH	The TRH (F2) result of 130mg/kg for the fill soil sample DUPAM4 (duplicate for sample BH227 0-0.2m) was above the HSL SAC of 110mg/kg and ESL SAC of 120mg/kg. The TRH (F3) result for this sample of 650mg/kg was also above the ESL SAC of 300mg/kg. Subsequent analysis of the DUPAM4 sample for TRH, following silica gel clean-up, indicted that the TRH >C_{10}-C_{16} (broadly equivalent to F2) result of 50mg/kg was below the HSL and ESL SAC. Additionally the TRH >C_{16}-C_{34} (F3) result of 140mg/kg was below the ESL SAC. The TRH (F3) results of 460mg/kg in BH221 (0-0.2m), 360mg/kg in BH227 (0-0.2m) and 370mg/kg in BH229 (0-0.2m) were above the ESL SAC of 300mg/kg. All remaining TRH results were below the HSL and ESL SAC.
BTEX	All BTEX results were below the SAC.
PAHs	All total PAH results were below the SAC. The Carcinogenic PAHs result of 5.1mg/kg for the fill sample BH233 (0.3-0.4m) was above HIL SAC of 3mg/kg.
OCPs and OPPs	All OCP and OPP results were below the SAC.
PCBs	All PCB results were below the SAC.
Asbestos	Laboratory analysis confirmed the presence of asbestos in the material samples AMF1, AMF2 and AMF4 encountered during the asbestos bulk screening, and in the surface material sample AMF3 found on the ground surface outside the site area. Laboratory analysis identified asbestos in the 500ml soil samples BH211 (0.5-0.75m), BH213 (1.2-1.4m) and BH217 (0-0.2m). The calculated AF/FA concentration of 0.0018% w/w (BH211 0.5-0.75m), 0.0014% w/w (BH213 1.2-1.4m) and 0.1710% w/w (BH217 0-0.2m) were above the HSL SAC of 0.001% w/w. All remaining asbestos soil results were below the SAC.

8.4.2 Human Health Assessment (Direct Contact and Management Limits)

The TRH, BTEX and naphthalene results were compared to the Management Limits (*Residential, Parkland and Public Open Space*) and the Direct Contact criteria (*Residential with Accessible Soil* - also suitably protective of intrusive maintenance workers) for petroleum hydrocarbons (NEPM 2013). The results were below the relevant criteria.

8.4.3 Waste Classification Assessment

The laboratory results were assessed against the criteria presented in Part 1 of the Waste Classification Guidelines, as summarised previously in this report. The results are presented in the report tables attached in the appendices. A summary of the results is presented in the following table:

Table 8-4: Summary of Soil Laboratory Results (Primary samples) Compared to CT and SCC Criteria

Analyte	No. of Samples Analysed	No. of Results > CT Criteria	No. of Results > SCC Criteria	Comments
Heavy Metals	46	0	0	-
TRH	46	0	0	-
BTEX	46	0	0	-
Total PAHs	46	0	0	-
Benzo(a)pyrene	46	2	0	Benzo(a)pyrene concentrations exceeded the CT1 criterion in two fill samples. The maximum concentration was 3.8mg/kg in BH233 (0.3-0.7m).
OCPs & OPPs	31	0	0	-
PCBs	31	0	0	-
Asbestos	59	NA	NA	Laboratory analysis confirmed the presence of asbestos in the material samples AMF1, AMF2 and AMF4 encountered during the asbestos bulk screening. Laboratory analysis confirmed the presence of asbestos in the 500ml fill samples BH211 (0.5-0.75m), BH213 (1.2-1.4m) and BH217 (0-0.2m).

Table 8-5: Summary of Soil Laboratory Results Compared to TCLP Criteria

Analyte	No. of Samples Analysed	No. of Results > TCLP Criteria	Comments
Benzo(a)pyrene	2	0	The fill samples with benzo(a)pyrene concentrations above the CT1 criterion were analysed for TCLP PAHs. All results were below the TCLP1 criterion.

8.4.4 Statistical Analysis

The Carcinogenic PAHs result of 5.1mg/kg for the fill sample BH233 (0.3-0.4m) was above the HIL SAC of 3mg/kg. The result was less than 250% of the HIL SAC.

Statistical calculations were undertaken using ProUCL (Version 5.1) on the fill carcinogenic PAHs results for the fill samples obtained from the proposed car park extension site. The primary, duplicate and laboratory replicate data were included. Where laboratory results were reported as less than the PQL, half of the PQL was assumed. The calculation sheets together with a summary of the dataset used in the calculation are attached in the appendices. In summary:

- The standard deviation (SD) was 1.38mg/kg, which is below 50% of the HIL SAC of 3mg/kg; and
- The 95% UCL concentration for carcinogenic PAHs on the mean was 2.663mg/kg, which is below the HIL SAC of 3mg/kg.

8.4.5 Acid Sulfate Soil Assessment

The soil laboratory results were assessed against the action criteria adopted for the assessment. The results are presented in the attached report Table S and summarised fin the following table:

Table 8-6: Summary of ASS Results

Analyte	Results Compared to ASS Guidelines
pH_{kcl} and pH_{ox}	The pH_{KCl} results ranged from 4.2 to 7.0. The pH_{KCl} results for the natural soils samples BH206 (3.3-3.45m), BH206 (5.4-5.6m), BH206 (7.7-7.95m), BH210 (2.9-3.15m), BH210 (5.9-6.15m), BH228 (3.0-3.45m), BH228 (4.5-4.95m), BH228 (7.5-7.95m) and BH239 (1.3-1.6m) exceeded (i.e. were below) the action criterion of pH 5. Following oxidation, the pH_{ox} results for the samples ranged from 4.5 to 6.6. The results for the same samples listed above exceeded (i.e. were below) the action criterion of pH 5. The pH of the samples typically dropped by a maximum of 0.4 units following oxidation.
Acid Trail	• TAA results ranged from 6mol H^+/tonne to71mol H^+/tonne. The results of the soil samples BH206 (3.3-3.45m), BH206 (5.4-5.6m), BH206 (7.7-7.95m), BH210 (5.9-6.15m), BH228 (3.0-3.45m), BH228 (4.5-4.95m), BH228 (7.5-7.95m) and BH239 (1.3-1.6m) were above the action criterion of 18mol H^+/tonne; • TPA results ranged from 5mol H^+/tonne to 62mol H^+/tonne. The results of the soil samples BH206 (3.3-3.45m), BH206 (5.4-5.6m), BH206 (7.7-7.95m), BH210 (2.9-3.15m), BH210 (5.9-6.15m), BH228 (3.0-3.45m), BH228 (4.5-4.95m), BH228 (7.5-7.95m) and BH239 (1.3-1.6m) were above the action criterion of 18mol H^+/tonne; and • TSA results ranged from less than PQL to 8mol H^+/tonne. All of the results were less than the action criterion of 18mol H^+/tonne.
Sulfur Trail	All of the S_{pos}% results were less than the action criterion of 0.03%w/w.
Liming Rate	The liming rate required for neutralisation ranged from 0.85kg$CaCO_3$/tonne to 5.4kg$CaCO_3$/tonne.

8.5 Groundwater Laboratory Results

The groundwater laboratory results are compared to the relevant SAC in the attached report tables. A summary of the results assessed against the SAC is presented in the following table:

Table 8-7: Summary of Groundwater Laboratory Results – Human Health and Environmental (Ecological)

Analyte	Results Compared to SAC
Heavy Metals	All heavy metals results were below the human health-based SAC. The zinc results of 22µg/L (MW206) and 20µg/L (MW228) were above the ecological SAC of 8µg/L. All of the remaining heavy metals results were below the SAC.
TRH	All TRH results were below the laboratory PQLs and the SAC.
BTEX	All BTEX results were below the laboratory PQLs and the SAC.
Other VOCs	All VOCs results were below the SAC. A minor detection of chloroform (10µg/L) was identified in MW206 which may indicate the presence of a potable water leak in this vicinity.
PAHs	All PAH results were below the laboratory PQLs and the SAC.
Other Parameters	The results for pH and EC are summarised below: • pH ranged from 4.9 to 6.3; and • EC ranged from 340µS/cm to 450µS/cm.

9 WASTE CLASSIFICATION ASSESSMENT

9.1 Waste Classification of Fill

Based on the results of the assessment, and at the time of reporting, the fill material is classified as the following waste streams:

- Proposed Centre of Excellence and Grandstand site **- General Solid Waste (non-putrescible) containing Special Waste (asbestos) (GSW Asbestos)**; and
- Proposed carpark extension site - **General Solid Waste (non-putrescible) (GSW).**

Waste fill/soil should be disposed of to a facility that is appropriately licensed to receive the waste stream. The facility should be contacted to obtain the required approvals prior to commencement of excavation.

9.2 Preliminary Classification of Natural Soil

Based on the scope of work undertaken for this assessment, and at the time of reporting, JKE are of the opinion that the natural soil at the site would meet the definition of **VENM** for off-site disposal or re-use purposes. However, due to the presence of contaminated fill overlying the natural soil, the VENM classification should be confirmed subject to suitable removal/segregation of the overlying fill.

VENM is considered suitable for re-use on-site (from a contamination viewpoint), or alternatively, the information included in this report may be used to assess whether the material is suitable for beneficial reuse at another site as fill material.

In accordance with Part 1 of the Waste Classification Guidelines, the VENM is pre-classified as GSW and can also be disposed of accordingly to a facility that is licensed to accept it.

10 DISCUSSION

10.1 Tier 1 Risk Assessment and Review of CSM

For a contaminant to represent a risk to a receptor, the following three conditions must be present:

1. Source – The presence of a contaminant;
2. Pathway – A mechanism or action by which a receptor can become exposed to the contaminant; and
3. Receptor – The human or ecological entity which may be adversely impacted following exposure to contamination.

If one of the above components is missing, the potential for adverse risks is relatively low.

10.1.1 Soil

10.1.1.1 AF/FA in Fill - Human Health Receptors

Elevated concentrations of FA (a degraded ACM and matted material) were encountered in two bulk field samples. The calculated AF concentrations of 0.0027% w/w (BH211 0.4-1.2m) and 0.1046% w/w (BH214 0-0.3m) were above the HSL SAC of 0.001% w/w.

Laboratory analysis confirmed the presence of asbestos in the 500ml soil samples from BH211 (0.5-0.75m), BH213 (1.2-1.4m) and BH217 (0-0.2m). The calculated AF/FA concentration of 0.0018% w/w (BH211 0.5-0.75m), 0.0014% w/w (BH213 1.2-1.4m) and 0.1710% w/w (BH217 0-0.2m) were above the SAC of 0.001% w/w. These sampling locations are located within proposed Centre of Excellence and Grandstand development area. The sampling locations and contamination data are shown in Figure 3.

The source of the AF/FA is likely to be associated with importation of fill material used to create the spectator hill. Based on review of aerial photographs, the hill appeared to have constructed between approximately 1961 and 1970.

The grass cover over the hill was limited in areas. AF/FA identified in exposed surface soils has the potential to generate air borne asbestos fibres during high winds or other disturbance, including during heavy foot traffic and excavation. This was of particular concern at sampling location BH217, where exposed soils were evident at the surface, and AF/FA concentrations for the surface sample exceed the SAC. Based on the above, JKE were of the opinion that the asbestos posed a potential risk to the human receptors.

To further assess the immediate risk of asbestos exposure to the receptors, JKE recommended that the site owner engage a hygienist or equivalent specialist to undertake an asbestos health risk assessment. A risk assessment was subsequently undertaken by JBS&G Australia Pty Ltd and presented in a report titled "*Assessment of Accessible Asbestos in Soils*" [21]. The JBS&G risk assessment included a site inspection, airborne respirable fibre monitoring between 7 September 2019 and 11 September 2019, collection of 500ml surface soil samples to 300mm below the ground surface from an additional 70 locations across Brookvale Oval

[21] Report to Northern Beaches Council, on Assessment of Accessible Asbestos in Soils, Brookvale Park and Oval, Brookvale, NSW (JBS&G ref: 54783-124573, dated 12 September 2019) (referred to as JBS&G assessment)

(including the site) and Brookvale Park (the recreational park to the north of Brookvale Oval), and laboratory analysis. Additional ACM or AF/FA were not encountered during the JBS&G assessment. Based on the results of the risk assessment, JBS&G concluded that the asbestos hazards were not present at levels that pose a potential human health risk and that there was no requirement to notify the asbestos impacts to the NSW EPA under section 60(3)(b) of the CLM Act 1997. JBS&G recommended that an Asbestos Management Plan (AMP) be prepared to manage the residual asbestos risks.

JBS&G subsequently prepared an AMP[22] for Brookvale Oval. The AMP indicated that asbestos related control measures (encapsulation) were implemented including the placement on non-contaminated soils in areas where the asbestos impacted soils were present at depth, and placement of artificial turf where asbestos impacted soils were potentially present in the near surface soils. These asbestos related controls were reportedly implemented within the proposed Centre of Excellence and Grandstand development site. The AMP was applicable to site future operation as a publicly accessible park and was not intended to apply to major excavations, earthworks or construction activities, or serve as a remediation plan.

JKE attended site on 3 October 2019 and observed some of the asbestos related controls implemented within the proposed Centre of Excellence and Grandstand development site. Photographs obtained at the time of this inspection are attached in the appendices.

JKE are of the opinion that the extent of the AF/FA impacted fill soil in the proposed Centre of Excellence and Grandstand development site cannot be assessed as being confined to a distinct fill profile or area. Therefore, at this stage, the fill within the entire the proposed Centre of Excellence and Grandstand development site is considered to contain AF/FA.

A Remediation Action Plan (RAP) and AMP will be required for the proposed Centre of Excellence and Grandstand development to address the risk to construction workers and on-going use of the site for recreational/open space use. JKE understand that cut to fill earthworks are proposed and further soil is to be imported for filling purposes to achieve the design ground floor levels. Therefore, the preferred remedial approach would include capping of the asbestos impacted soils across the entire development footprint. A long-term Environmental Management Plan (EMP) will be required should the capping and containment approach be adopted.

JKE note that ACM or AF/FA impacted soils were not encountered within the proposed car park extension site, therefore this area does not require remediation or management based on the outcome of the ESA.

10.1.1.2 TRH, Human Health and Ecological Receptors

The initial TRH (F2) result for the fill soil sample DUPAM4 (duplicate for sample BH227 0-0.2m) was above the HSL SAC. Additionally, the initial TRH (F2 and F3) results for the fill soil sample DUPAM4 were above the ESL SAC. Subsequent analysis of the above sample for TRH, following silica gel clean-up, indicted that the TRH results were below the HSL SAC and ESL SAC.

[22] Report to Northern Beaches Council, on Asbestos Management Plan, Brookvale Oval, Brookvale, NSW (JBS&G ref: 54783-124460 (Rev)), dated 11 September 2019)

In our view, the silica gel clean-up has demonstrated that the initial TRH results likely included interference from polar compounds, possibly associated with natural occurring plant matter, as can be expected in vegetated area beneath trees. There were no odours or staining in the soil that suggested there were impacts from petroleum and all PID readings for the samples were negligible.

The TRH (F3) fill soils results BH221 (0-0.2m), BH227 (0-0.2m) and BH229 (0-0.2m) were above the ESL SAC. Silica gel clean-up analysis for TRH was not undertaken on these samples. It is noted that the results of silica-gel clean-up on the fill soil sample DUPAM4 which encountered the highest concentration of TRH (F3) of 650mg/kg significantly reduced the concentration of TRH (F3) to 140mg/kg. JKE anticipate that similar TRH (F3) results would have been encountered for the other fill soil samples should additional TRH analysis have been undertaken following silica gel clean-up.

The sampling locations and TRH contamination data are shown in Figures 3 and 4. The source of TRH is likely associated with the importation of fill to the area in addition to natural occurring plant matter.

JKE are of the opinion that TRH results above the ESL SAC represent a very low risk to the ecological receptors and remediation is not considered necessary for the following reasons:

- The TRHs are likely to be associated with the existing vegetation rather than a petroleum source;
- The vegetation at the site did not appear to be showing any obvious signs of stress (e.g. die back) and largely appeared healthy and well established. However, it is noted that some of the grass cover was limited, this was generally attributed to the canopy of well-established tree cover and pedestrian foot traffic;
- Sensitive ecological receptors were not identified;
- The proposed Centre of Excellence and Grandstand development includes covering the site with hardstand and the proposed car park extension development includes covering the site surface with a compacted gravel layer. This will prevent access to the underling fill soils; and
- Elevated concentrations of TRH were not encountered in the groundwater samples analysed which confirms there is no migration risk to groundwater.

10.1.1.3 Carcinogenic PAHs

The carcinogenic PAHs result of 5.1mg/kg for the fill sample BH233 (0.3-0.4m) was above HIL SAC of 3mg/kg. The sample was obtained from the proposed car park extension development area. The PAHs are likely to be associated with imported fill material.

JKE note that the NEPM (2013) HIL-C SAC for 'public open space, secondary schools and footpaths' assume inhalation, dermal contact and ingestion exposure pathways for adults and children for two hours per day, 365 days of the year. Following review of the CSM and the results, the HIL-C SAC are considered conservative in their applicability to the proposed car park extension development and remediation is not considered necessary for the following reasons:

- Subsequent statistical calculations discussed in Section 8.4.4, indicted that the 95% UCL for PAHs was below the HIL-C SAC;

- The site currently has little appeal as a public open space which would be regularly visited at a frequency considered under the HIL-C exposure scenario;
- The carcinogenic PAHs result for the overlying fill sample BH233 (0-0.2m) was below the HIL-C SAC, therefore limiting potential exposure to the underlying soils; and
- The proposed car park extension development includes covering the site surface with a compacted gravel layer, further limiting potential exposure to the underlying soils.

10.1.2 Surface ACM

A surface ACM was identified in the north-west section of Brookvale Oval and outside of the proposed development area. The surface ACM sampling location is shown on Figure 3. The source of the ACM is considered to be associated the demolition of buildings between 1982 and 1991.

The JBS&G assessment confirmed that based on their inspection the Brookvale Oval site surface was free of potentially viable ACM.

10.1.3 Groundwater

The zinc results for the groundwater samples MW206 and MW228 were greater than the ecological SAC. The groundwater monitoring well sampling locations and contamination data are shown in Figures 4.

Elevated concentrations of zinc were not encountered is the soil samples analysed for the assessment. Elevations of heavy metals (particularly zinc) are very common in urban groundwater as a result surface run-off and leaking water infrastructure such as the stormwater line running through the north-east section of the proposed Centre of Excellence and Grandstand site.

JKE are of the opinion that the zinc groundwater elevations are associated with a regional issue that does not warrant further consideration/remediation. The zinc concentrations do not pose a risk to human health.

10.2 Acid Sulfate Soils

sPOCAS results for several samples identified acidic conditions greater than the action criteria. These results are considered to be indicative of mildly acidic soils associated with organic/humic material rather than PASS as significant concentrations of oxidisable sulfur (indicated by the low S_{pos}% results) were not encountered in the samples.

Considering the information reviewed for this assessment (risk maps, subsurface conditions and laboratory results etc.), PASS or ASS are not likely to be present at the site or disturbed during the proposed development. Therefore an ASS management plan is not considered to be necessary.

10.3 Decision Statements

The decision statements are addressed below:

> *Did the site inspection, or does the historical information identify potential contamination sources/AEC at the site?*

Yes. The AEC are summarised in the CSM in Section 5.

> *Are any results above the SAC?*

Yes. The results of the assessment are summarised in Section 8.

> *Do potential risks associated with contamination exist, and if so, what are they?*

Yes. The AF/FA identified in the fill soils in the proposed Centre of Excellence and Grandstand development area represent a human health risk if disturbed and/or not appropriately managed/remediated.

> *Is remediation required?*

Yes. A RAP is required for the proposed Centre of Excellence and Grandstand development.

A RAP is not considered necessary for the proposed car park extension development.

> *Is the site characterisation sufficient to provide adequate confidence in the above decisions?*

Yes. However, the data gaps identified in Section 10.4 should be considered.

> *Is the site suitable for the proposed development, or can the site be made suitable subject to further characterisation and/or remediation?*

The proposed Centre of Excellence and Grandstand site can be made suitable for the proposed development subject to the preparation and implementation of a RAP and (if required) a long-term EMP.

JKE are of the opinion that the proposed car park extension site is suitable for the proposed development.

10.4 Data Gaps

An assessment of data gaps is provided in the following table:

Table 10-1: Data Gap Assessment

Data Gap	Assessment
Additional site area associated Stormwater realignment works	Based on current supplied development plans, the proposed Centre of Excellence and Grandstand development includes realignment of the existing stormwater line in the north and east of the site and beyond the nominated boundary of the site. Further assessment of these areas is required should the stormwater realignment works form part of the area to be assessed for site suitability by the consent authority.
Borehole refusal within fill	Borehole refusal was encountered within fill material at some of the sampling locations. This was a results of physical obstructions within the fill or limitations of sampling methods (e.g. use of hand tools). Although, identified as a data gap, the refusal in fill is not considered to have impacted on the recommendations and conclusions presented in this report.

11 CONCLUSIONS AND RECOMMENDATIONS

The assessment included a review of historical information and sampling from 40 boreholes. The site has historically been used for recreational purposes since approximately 1911. Significant filling of the Centre of Excellence and Grandstand site occurred circa 1970 for the construction of the spectator hill.

JKE consider that the report objectives outlined in Section 1.2 have been addressed. Specific reconditions to the proposed site/development areas are details in the subsequent sections below.

11.1 Proposed Centre of and Grandstand Development

Based on the findings of the assessment, JKE are of the opinion that the proposed Centre of Excellence and grandstand site can be made suitable for the proposed development described in Section 1.1 provided the following is implemented:

- The data gaps identified in Section 10.4 are addressed. This can be done prior to commencement of remediation works and the requirements for this work are to be outlined in the RAP;
- A RAP and AMP are prepared;
- A Validation Report is prepared on completion of the remediation works; and
- A long-term EMP is prepared at the completion of remediation and validations works, in the event that the capping and containment approached to remediation is adopted.

11.2 Proposed Car Park Extension Development

Based on the findings of the assessment, JKE are of the opinion that the proposed car park extension site is suitable from a contamination view point for the proposed civil infrastructure works development described in Section 1.1. Remediation is not required.

11.3 Regulatory Requirements

The regulatory requirements applicable for the development are outlined below:

Table 11-1: Regulatory Requirements

Regulator	Requirements
NSW EPA – Duty to Report	Based on the results, the interim asbestos related controls implemented and the asbestos air fibre monitoring, JKE consider that there is no requirement to notify the NSW EPA under the NSW EPA Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997 (2015)[23]..
SafeWork	Sites with asbestos become a 'workplace' when work is carried out there and require a register and asbestos management plan. Appropriate SafeWork NSW notification will be required for asbestos removal works or handling. Contractors are also required to be appropriately licensed for the asbestos works undertaken (i.e. friable asbestos works).

[23] NSW EPA, (2015). *Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997* (referred to as Duty to Report Contamination)

Regulator	Requirements
Waste Management	Section 143 of the POEO Act 1997 states that if waste is transported to a place that cannot lawfully be used as a waste facility for that waste, then the transporter and owner of the waste are each guilty of an offence. The transporter and owner of the waste have a duty to ensure that the waste is disposed of in an appropriate manner.

12 LIMITATIONS

The report limitations are outlined below:

- JKE accepts no responsibility for any unidentified contamination issues at the site. Any unexpected problems/subsurface features that may be encountered during development works should be inspected by an environmental consultant as soon as possible;
- Previous use of this site may have involved excavation for the foundations of buildings, services, and similar facilities. In addition, unrecorded excavation and burial of material may have occurred on the site. Backfilling of excavations could have been undertaken with potentially contaminated material that may be discovered in discrete, isolated locations across the site during construction work;
- This report has been prepared based on site conditions which existed at the time of the investigation; scope of work and limitation outlined in the JKE proposal; and terms of contract between JKE and the client (as applicable);
- The conclusions presented in this report are based on investigation of conditions at specific locations, chosen to be as representative as possible under the given circumstances, visual observations of the site and immediate surrounds and documents reviewed as described in the report;
- Subsurface soil and rock conditions encountered between investigation locations may be found to be different from those expected. Groundwater conditions may also vary, especially after climatic changes;
- The investigation and preparation of this report have been undertaken in accordance with accepted practice for environmental consultants, with reference to applicable environmental regulatory authority and industry standards, guidelines and the assessment criteria outlined in the report;
- Where information has been provided by third parties, JKE has not undertaken any verification process, except where specifically stated in the report;
- JKE has not undertaken any assessment of off-site areas that may be potential contamination sources or may have been impacted by site contamination, except where specifically stated in the report;
- JKE accept no responsibility for potentially asbestos containing materials that may exist at the site. These materials may be associated with demolition of pre-1990 constructed buildings or fill material at the site;
- JKE have not and will not make any determination regarding finances associated with the site;
- Additional investigation work may be required in the event of changes to the proposed development or landuse. JKE should be contacted immediately in such circumstances;
- Material considered to be suitable from a geotechnical point of view may be unsatisfactory from a soil contamination viewpoint, and vice versa; and
- This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose.

Important Information About This Report

These notes have been prepared by JKE to assist with the assessment and interpretation of this report.

The Report is based on a Unique Set of Project Specific Factors

This report has been prepared in response to specific project requirements as stated in the JKE proposal document which may have been limited by instructions from the client. This report should be reviewed, and if necessary, revised if any of the following occur:

- The proposed land use is altered;
- The defined subject site is increased or sub-divided;
- The proposed development details including size, configuration, location, orientation of the structures or landscaped areas are modified;
- The proposed development levels are altered, eg addition of basement levels; or
- Ownership of the site changes.

JKE will not accept any responsibility whatsoever for situations where one or more of the above factors have changed since completion of the assessment. If the subject site is sold, ownership of the assessment report should be transferred by JKE to the new site owners who will be informed of the conditions and limitations under which the assessment was undertaken. No person should apply an assessment for any purpose other than that originally intended without first conferring with the consultant.

Changes in Subsurface Conditions

Subsurface conditions are influenced by natural geological and hydrogeological process and human activities. Groundwater conditions are likely to vary over time with changes in climatic conditions and human activities within the catchment (e.g. water extraction for irrigation or industrial uses, subsurface waste water disposal, construction related dewatering). Soil and groundwater contaminant concentrations may also vary over time through contaminant migration, natural attenuation of organic contaminants, ongoing contaminating activities and placement or removal of fill material. The conclusions of an assessment report may have been affected by the above factors if a significant period of time has elapsed prior to commencement of the proposed development.

This Report is based on Professional Interpretations of Factual Data

Site assessments identify actual subsurface conditions at the actual sampling locations at the time of the investigation. Data obtained from the sampling and subsequent laboratory analyses, available site history information and published regional information is interpreted by geologists, engineers or environmental scientists and opinions are drawn about the overall subsurface conditions, the nature and extent of contamination, the likely impact on the proposed development and appropriate remediation measures.

Actual conditions may differ from those inferred, because no professional, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than an assessment indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to prevent the unanticipated, but steps can be taken to help minimise the impact. For this reason, site owners should retain the services of their consultants throughout the development stage of the project, to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

Assessment Limitations

Although information provided by a site assessment can reduce exposure to the risk of the presence of contamination, no environmental site assessment can eliminate the risk. Even a rigorous professional assessment may not detect all contamination on a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which showed no signs of contamination when sampled. Contaminant analysis cannot possibly cover every type of contaminant which may occur; only the most likely contaminants are screened.

Misinterpretation of Site Assessments by Design Professionals

Costly problems can occur when other design professionals develop plans based on misinterpretation of an assessment report. To minimise problems associated with misinterpretations, the environmental consultant should be retained to work with appropriate professionals to explain relevant findings and to review the adequacy of plans and specifications relevant to contamination issues.

Logs Should not be Separated from the Assessment Report

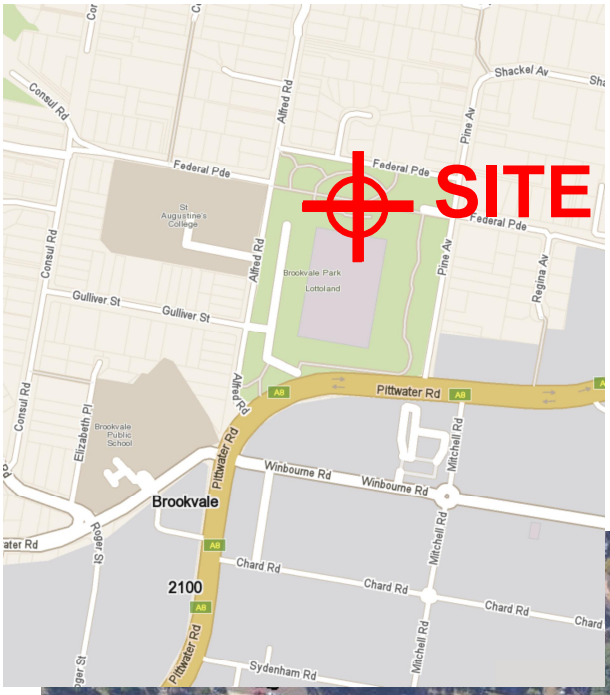
Borehole and test pit logs are prepared by environmental scientists, engineers or geologists based upon interpretation of field conditions and laboratory evaluation of field samples. Logs are normally provided in our reports and these should not be re-drawn for inclusion in site remediation or other design drawings, as subtle but significant drafting errors or omissions may occur in the transfer process. Photographic reproduction can eliminate this problem, however contractors can still misinterpret the logs during bid preparation if separated from the text of the assessment. If this occurs, delays, disputes and unanticipated costs may result. In all cases it is necessary to refer to the rest of the report to obtain a proper understanding of the assessment. Please note that logs with the 'Environmental Log' header are not suitable for geotechnical purposes as they have not been peer reviewed by a Senior Geotechnical Engineer.

To reduce the likelihood of borehole and test pit log misinterpretation, the complete assessment should be available to persons or organisations involved in the project, such as contractors, for their use. Denial of such access and disclaiming responsibility for the accuracy of subsurface information does not insulate an owner from the attendant liability. It is critical that the site owner provides all available site information to persons and organisations such as contractors.

Read Responsibility Clauses Closely

Because an environmental site assessment is based extensively on judgement and opinion, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, model clauses have been developed for use in written transmittals. These are definitive clauses designed to indicate consultant responsibility. Their use helps all parties involved recognise individual responsibilities and formulate appropriate action. Some of these definitive clauses are likely to appear in the environmental site assessment, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to any questions.

Appendix A: Report Figures



LEGEND

Approximate Extent of the Site

Approximate Extent of Brookvale Oval

Notes: Reference should be made to the report text for a full understanding of this plan. Image Sources: https://maps.six.nsw.gov.au/ and whereis.com.au/

Title: **SITE LOCATION PLAN**

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Report No: E32596BDrpt

Figure No: 1

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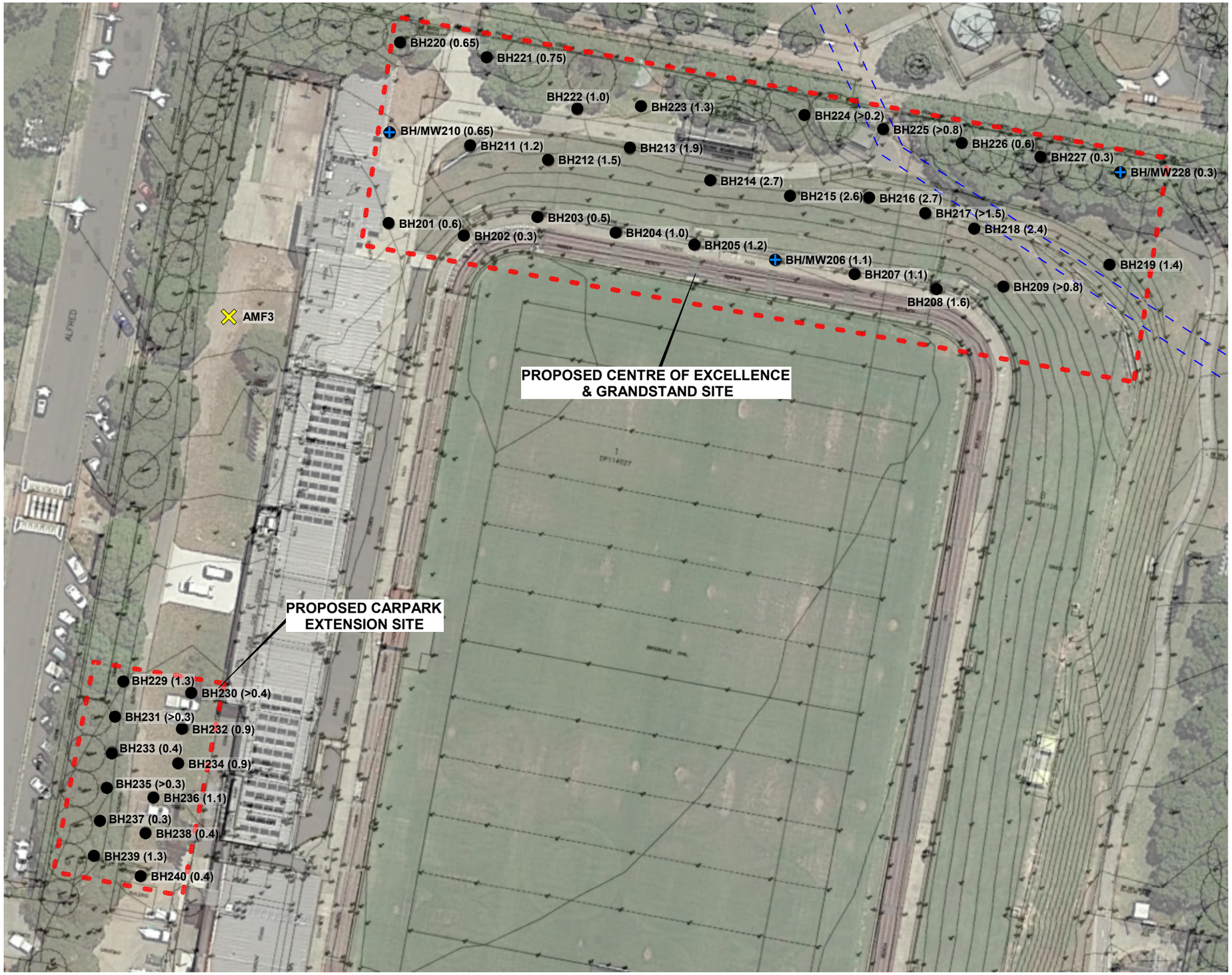

LEGEND:

- APPROXIMATE SITE BOUNDARY
- APPROXIMATE EXTENT OF EXISTING STORMWATER
- BH200 (0.1) — JKE BOREHOLE LOCATION, NUMBER AND FILL DEPTH (m)
- MW200 — JKE MONITORING WELL LOCATION AND NUMBER
- AMF — POTENTIAL ASBESTOS FRAGMENT SURFACE LOCATION

Scale (m) @A3: 0 7 14 21 28 35

Notes: Reference should be made to the report text for a full understanding of this plan.
Image Sources: Google Earth and Warringah Council Survery Plan, Murray Hastings MDH1245-D-07, 3 April 2008

Title: **SAMPLING LOCATION PLAN**

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Report No: E32596BDrpt | Figure No: 2

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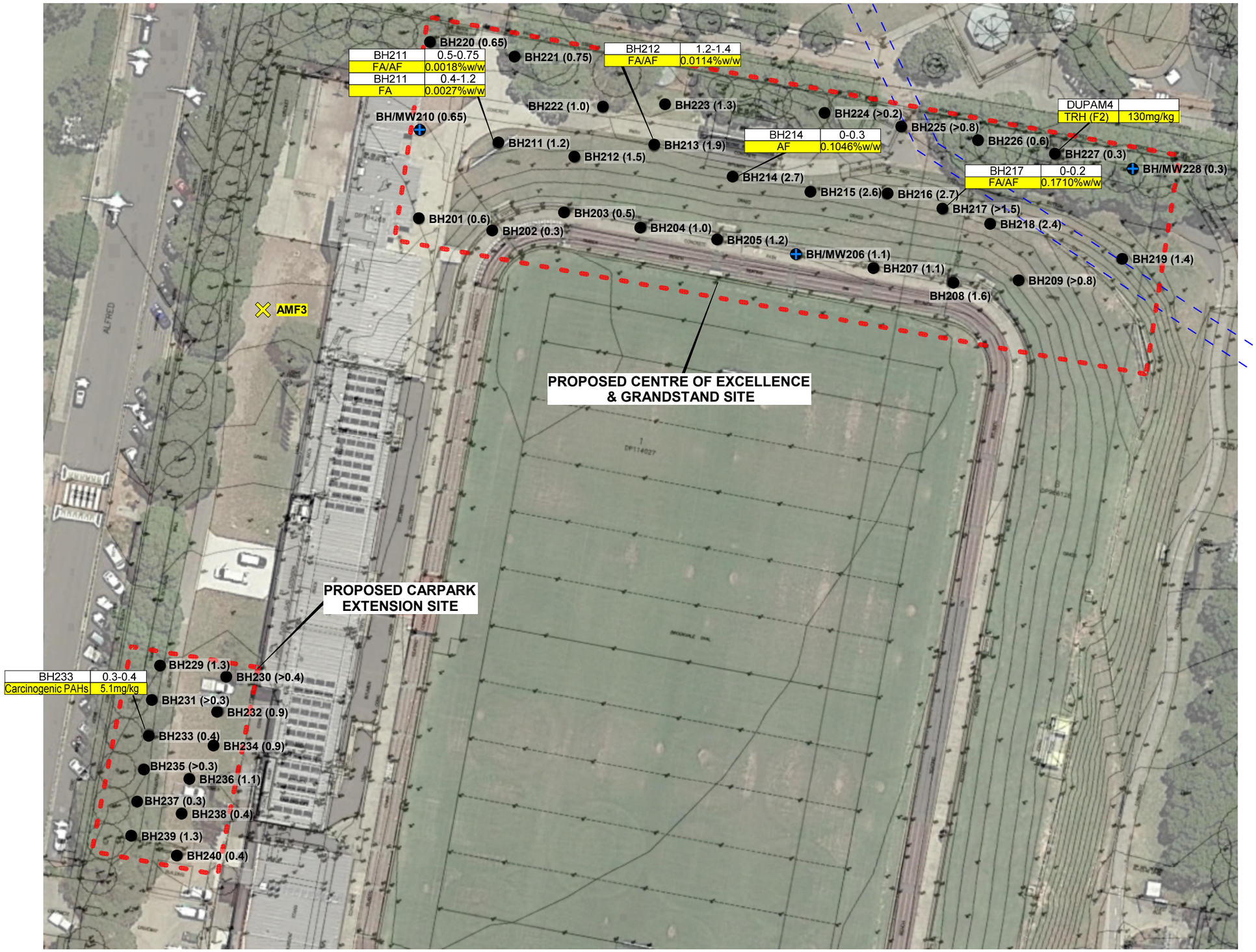

LEGEND:

- APPROXIMATE SITE BOUNDARY
- BH200 (0.1) — JKE BOREHOLE LOCATION, NUMBER AND FILL DEPTH (m)
- MW200 — JKE MONITORING WELL LOCATION AND NUMBER
- AMF — ASBESTOS FRAGMENT SURFACE LOCATION
- SOIL CONTAMINATION ABOVE SAC FOR HUMAN HEALTH RISK (%w/w or mg/kg)
- APPROXIMATE EXTENT OF EXISTING STORMWATER

Scale (m) @A3: 0 7 14 21 28 35

Notes: Reference should be made to the report text for a full understanding of this plan.
Image Sources: Google Earth and Warringah Council Survery Plan, Murray Hastings MDH1245-D-07, 3 April 2008

Title: **CONTAMINATION DATA PLAN - HUMAN HEALTH**

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Report No: E32596BDrpt

Figure No: 3

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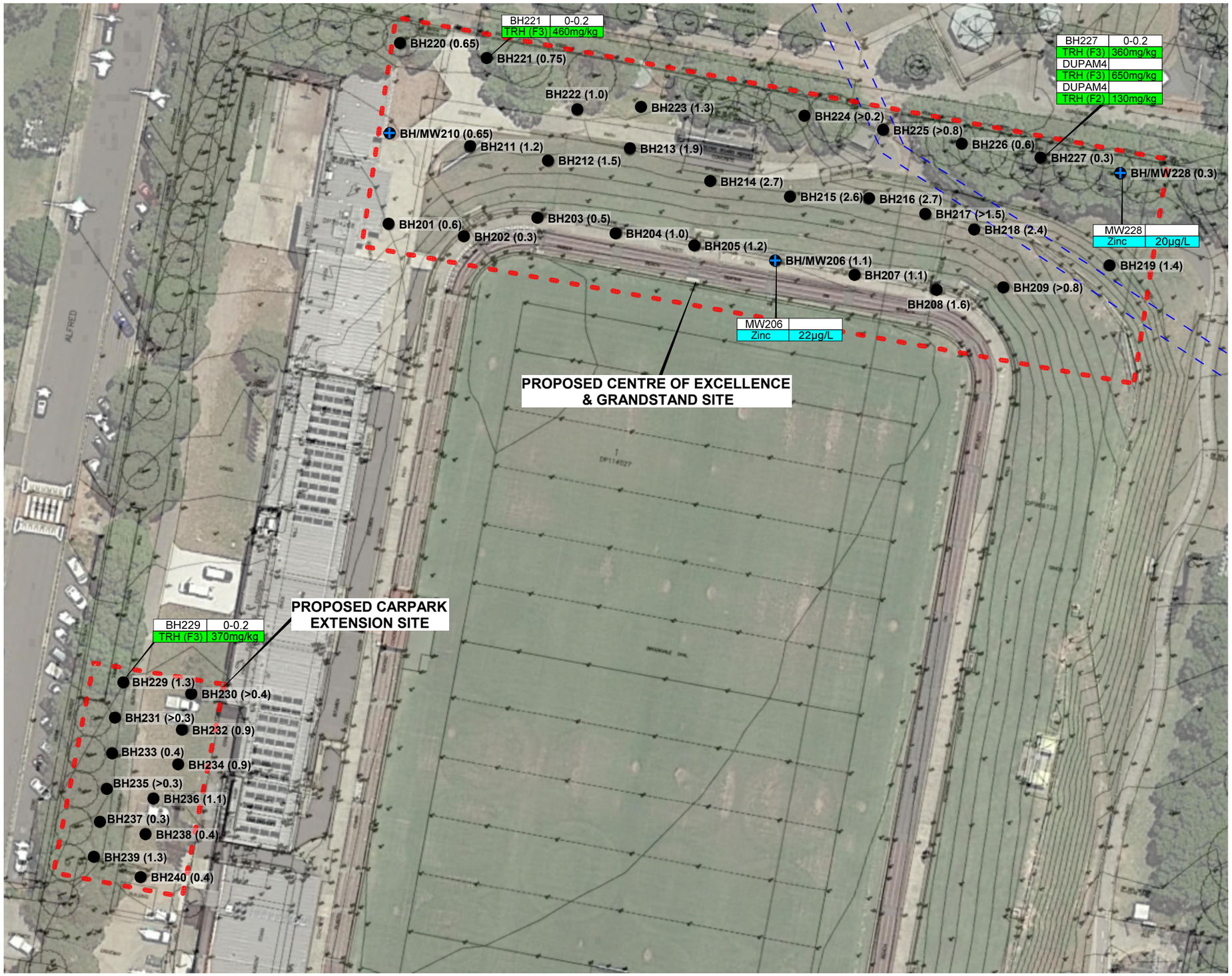

LEGEND:

- APPROXIMATE SITE BOUNDARY
- BH200 (0.1) — JKE BOREHOLE LOCATION, NUMBER AND FILL DEPTH (m)
- MW200 — JKE MONITORING WELL LOCATION AND NUMBER
- APPROXIMATE EXTENT OF EXISTING STORMWATER

SOIL CONTAMINATION ABOVE SAC FOR ECOLOGICAL RISK (mg/kg)

GROUNDWATER CONTAMINATION ABOVE SAC FOR ECOLOGICAL RISK (µg/L)

Scale (m) @A3: 0 7 14 21 28 35

Notes: Reference should be made to the report text for a full understanding of this plan.
Image Sources: Google Earth and Warringah Council Survery Plan, Murray Hastings MDH1245-D-07, 3 April 2008

Title: **CONTAMINATION DATA PLAN - ECOLOGICAL**

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Report No: E32596BDrpt | Figure No: 4

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Appendix B: Laboratory Summary Tables

ABBREVIATIONS AND EXPLANATIONS

Abbreviations used in the Tables:

ABC:	Ambient Background Concentration	**PCBs:**	Polychlorinated Biphenyls
ACM:	Asbestos Containing Material	**PCE:**	Perchloroethylene (Tetrachloroethylene or Teterachloroethene)
ADWG:	AustralianDrinking Water Guidelines	**pH_{KCL} :**	pH of filtered 1:20, 1M KCL extract, shaken overnight
AF:	Asbestos Fines	**pH_{ox} :**	pH of filtered 1:20 1M KCl after peroxide digestion
ANZG	Australian and New Zealand Guidelines	**PQL:**	Practical Quantitation Limit
B(a)P:	Benzo(a)pyrene	**RS:**	Rinsate Sample
CEC:	Cation Exchange Capacity	**RSL:**	Regional Screening Levels
CRC:	Cooperative Research Centre	**SAC:**	Site Assessment Criteria
CT:	Contaminant Threshold	**SCC:**	Specific Contaminant Concentration
EILs:	Ecological Investigation Levels	**S_{Cr}:**	Chromium reducible sulfur
ESLs:	Ecological Screening Levels	**S_{POS}:**	Peroxide oxidisable Sulfur
FA:	Fibrous Asbestos	**SSA:**	Site Specific Assessment
GIL:	Groundwater Investigation Levels	**SSHSLs:**	Site Specific Health Screening Levels
HILs:	Health Investigation Levels	**TAA:**	Total Actual Acidity in 1M KCL extract titrated to pH6.5
HSLs:	Health Screening Levels	**TB:**	Trip Blank
HSL-SSA:	Health Screening Level-SiteSpecific Assessment	**TCA:**	1,1,1 Trichloroethane (methyl chloroform)
NA:	Not Analysed	**TCE:**	Trichloroethylene (Trichloroethene)
NC:	Not Calculated	**TCLP:**	Toxicity Characteristics Leaching Procedure
NEPM:	National Environmental Protection Measure	**TPA:**	Total Potential Acidity, 1M KCL peroxide digest
NHMRC:	National Health and Medical Research Council	**TS:**	Trip Spike
NL:	Not Limiting	**TRH:**	Total Recoverable Hydrocarbons
NSL:	No Set Limit	**TSA:**	Total Sulfide Acidity (TPA-TAA)
OCP:	Organochlorine Pesticides	**UCL:**	Upper Level Confidence Limit on Mean Value
OPP:	Organophosphorus Pesticides	**USEPA**	United States Environmental Protection Ager
PAHs:	Polycyclic Aromatic Hydrocarbons	**VOCC:**	Volatile Organic Chlorinated Compounds
ppm:	Parts per million	**WHO:**	World Health Organisation

Table Specific Explanations:

HIL Tables:

- The chromium results are for Total Chromium which includes Chromium III and VI. For initial screening purposes, we have assumed that the samples contain only Chromium VI unless demonstrated otherwise by additional analysis.
- Carcinogenic PAHs is a toxicity weighted sum of analyte concentrations for a specific list of PAH compounds relative to B(a)P. It is also refered to as the B(a)P Toxic Equivalence Quotient (TEQ).
- Statistical calculations are undertaken using ProUCL (USEPA). Statistical calculation is usually undertaken using data from fill samples.

EIL/ESL Table:

- ABC Values for selected metals have been adopted from the published background concentrations presented in Olszowy et. al., (1995), Trace Element Concentrations in Soils from Rural and Urban New South Wales (the 25th percentile values for old suburbs with high traffic have been quoted).

Waste Classification and TCLP Table:

- Data assessed using the NSW EPA Waste Classification Guidelines, Part 1: Classifying Waste (2014).
- The assessment of Total Moderately Harmful pesticides includes: Dichlorovos, Dimethoate, Fenitrothion, Ethion, Malathion and Parathion.
- Assessment of Total Scheduled pesticides include: HBC, alpha-BHC, gamma-BHC, beta-BHC, Heptachlor, Aldrin, Heptachlor Epoxide, gamma-Chlordane, alpha-chlordane, pp-DDE, Dieldrin, Endrin, pp-DDD, pp-DDT, Endrin Aldehyde.

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TABLE A1
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013.
HIL-C: 'Public open space; secondary schools; and footpaths'

All data in mg/kg unless stated otherwise			HEAVY METALS								PAHs		ORGANOCHLORINE PESTICIDES (OCPs)							OP PESTICIDES (OPPs)	TOTAL PCBs
			Arsenic	Cadmium	Chromium VI	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	Carcinogenic PAHs	HCB	Endosulfan	Methoxychlor	Aldrin & Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor	Chlorpyrifos	
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Site Assessment Criteria (SAC)			300	90	300	17000	600	80	1200	30000	300	3	10	340	400	10	70	400	10	250	1
Sample Reference	**Sample Depth**	**Sample Description**																			
BH201	0.12-0.2	Fill: Gravelly Sand	<4	<0.4	20	36	29	<0.1	15	68	0.66	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH201 (lab replicate)	0.12-0.2	Fill: Gravelly Sand	<4	<0.4	13	6	16	<0.1	3	21	0.4	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH201 (lab triplicate)	0.12-0.2	Fill: Gravelly Sand	<4	<0.4	16	20	28	<0.1	9	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH203	0.12-0.2	Fill: Silty Sand	<4	<0.4	8	6	4	<0.1	2	4	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH203	0.4-0.5	Fill:Silty Clay	9	<0.4	27	1	10	<0.1	2	4	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH203	0.6-0.95	Sandy Clay	<4	<0.4	8	<1	3	<0.1	2	<1	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH205	0.12-0.2	Fill: Silty Sand	5	<0.4	4	8	1	<0.1	1	4	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH205	0.2-0.4	Fill:Silty Clay	<4	<0.4	11	2	10	<0.1	1	3	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH205	1.2-1.4	Sandy Clay	<4	<0.4	11	<1	6	<0.1	2	3	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH207	0.12-0.2	Fill: Silty Sand	<4	<0.4	4	12	1	<0.1	1	4	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH207	0.5-0.95	Fill:Silty Clay	<4	<0.4	11	<1	9	<0.1	<1	2	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH209	0-0.2	Fill:Silty Clay	<4	<0.4	12	9	28	<0.1	4	28	0.4	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH209	0.3-0.5	Fill:Silty Clay	6	<0.4	15	3	15	<0.1	2	10	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH209 (lab replicate)	0.3-0.5	Fill:Silty Clay	5	<0.4	14	3	14	<0.1	2	9	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH211	0-0.2	Fill: Silty Sand	<4	<0.4	11	6	18	<0.1	2	20	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH211	0.5-0.75	Fill: Clayey Sand	<4	<0.4	17	2	9	<0.1	2	10	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH211	1.3-1.5	Silty Sand	<4	<0.4	7	1	3	<0.1	<1	5	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH213	0-0.2	Fill: Silty Sand	<4	<0.4	6	5	11	1	3	21	<0.05	<0.5	<0.1	<0.1	<0.1	0.3	<0.1	0.2	<0.1	<0.1	<0.1
BH213	0.3-0.5	Fill: Silty Sand	<4	<0.4	6	3	26	<0.1	3	23	2.6	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH213	1.2-1.4	Fill: Silty Sand	<4	<0.4	6	5	32	<0.1	3	29	18	2.1	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH213	1.4-1.9	Fill: Clayey Sand	<4	<0.4	33	<1	2	<0.1	<1	5	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH215	0-0.2	Fill: Silty Sand	<4	<0.4	5	6	26	<0.1	3	31	1.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH215	1.5-1.95	Fill:Silty Clay	<4	<0.4	21	<1	12	<0.1	1	3	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH217	0-0.2	Fill: Silty Sand	<4	<0.4	3	4	29	<0.1	<1	24	0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH217 (lab replicate)	0-0.2	Fill: Silty Sand	<4	<0.4	6	5	29	<0.1	1	24	7.1	1.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH217	0.5-0.75	Fill: Silty Sand	<4	<0.4	12	8	32	<0.1	10	34	6.3	0.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH219	0-0.2	Fill: Silty Sand	<4	<0.4	7	12	7	<0.1	5	50	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH219	0.5-0.95	Fill: Clayey Sand	<4	<0.4	11	13	21	<0.1	7	55	3.5	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH219	1.4-1.6	Silty Sand	<4	<0.4	<1	<1	<1	<0.1	1	1	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA

Concentration above the SAC **VALUE**

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TABLE A2
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013.
HIL-C: 'Public open space; secondary schools; and footpaths'

All data in mg/kg unless stated otherwise			HEAVY METALS								PAHs		ORGANOCHLORINE PESTICIDES (OCPs)							OP PESTICIDES (OPPs)	TOTAL PCBs
			Arsenic	Cadmium	Chromium VI	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	Carcinogenic PAHs	HCB	Endosulfan	Methoxychlor	Aldrin & Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor	Chlorpyrifos	
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Site Assessment Criteria (SAC)			300	90	300	17000	600	80	1200	30000	300	3	10	340	400	10	70	400	10	250	1
Sample Reference	**Sample Depth**	**Sample Description**																			
BH221	0-0.2	Fill: Sandy Silt	<4	<0.4	1	6	2	<0.1	1	31	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH221	0.75-0.95	Silty Sand	<4	<0.4	1	4	4	<0.1	<1	7	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH223	0-0.2	Fill: Silty Sand	<4	<0.4	7	14	21	<0.1	4	46	4.8	0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH223 (lab replicate)	0-0.2	Fill: Silty Sand	<4	<0.4	11	15	18	<0.1	6	47	3.2	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH223	0.5-0.95	Fill: Silty Sand	<4	<0.4	10	16	52	0	11	200	2.8	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH223	1.5-1.7	Silty Sand	<4	<0.4	<1	<1	<1	<0.1	<1	<1	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH224	0-0.2	Fill: Silty Sand	<4	<0.4	5	8	26	<0.1	2	62	2.2	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH227	0-0.2	Fill: Sandy Silt	<4	<0.4	16	9	9	<0.1	2	69	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH227	0.5-0.7	Silty Sand	<4	<0.4	<1	<1	<1	<0.1	<1	2	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH229	0-0.2	Fill: Sandy Silt	4	<0.4	12	19	22	<0.1	3	86	2	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH229	1.1-1.3	Fill: Clayey Sand	5	<0.4	12	3	16	<0.1	3	38	7.2	0.9	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH229	1.3-1.5	Clayey Sand	<4	<0.4	8	1	8	<0.1	2	25	2.1	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH232	0-0.2	Fill: Silty Sand	<4	<0.4	6	11	7	<0.1	4	44	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH232 (labe replicate)	0-0.2	Fill: Silty Sand	<4	<0.4	6	9	7	<0.1	4	34	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH232	1.2-1.4	Clayey Sand	<4	<0.4	7	<1	4	<0.1	4	4	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH233	0-0.2	Fill: Sandy Silt	<4	<0.4	7	16	42	<0.1	4	88	2.3	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH233	0.3-0.4	Fill: Clayey Sand	<4	<0.4	11	16	61	<0.1	5	97	62	5.1	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH236	0-0.2	Fill: Silty Sand	<4	<0.4	7	11	10	<0.1	4	45	0.06	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH236 (lab replicate)	0-0.2	Fill: Silty Sand	<4	<0.4	7	12	11	<0.1	4	51	0.06	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH236	0.5-0.7	Fill: Silty Sand	<4	<0.4	7	18	22	<0.1	2	110	0.58	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH236	1.1-1.3	Silty Sand	<4	<0.4	2	<1	3	<0.1	<1	8	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH237	0-0.2	Fill: Silty Sand	6	<0.4	48	2	6	<0.1	<1	13	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH240	0-0.2	Fill: Clayey Sand	<4	<0.4	5	3	13	<0.1	2	18	0.2	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH240	0.4-0.6	Silty Sand	<4	<0.4	4	<1	7	<0.1	1	17	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DUPAM3	-	Fill: Silty Sand	<4	<0.4	9	6	16	<0.1	2	22	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DUPAM4	-	Fill: Sandy Silt	<4	<0.4	3	10	8	<0.1	1	65	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DUPAM5	-	Fill: Silty Sand	<4	<0.4	3	5	31	<0.1	1	24	2	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DUPAM5 (replicate)	-	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1	NA
DUPAM7	-	Fill: Sandy Silt	5	<0.4	14	20	25	<0.1	4	89	2.9	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Number of Samples			57	57	57	57	57	57	57	57	56	56	41	41	41	41	41	41	41	42	41
Maximum Value			9	<PQL	48	36	61	0.5	15	200	62	5.1	<PQL	<PQL	<PQL	0.3	<PQL	0.2	<PQL	<PQL	<PQL
Statistical Analysis on Fill Samples Obatiend From the Proposed Car Park Extension Site																					
Number of Fill Samples			NC	NC	NC	NC	NC	NC	NC	NC	NC	11	NC	NC	NC	NC	NC	NC	NC	NC	NC
Mean Value			NC	NC	NC	NC	NC	NC	NC	NC	NC	0.96	NC	NC	NC	NC	NC	NC	NC	NC	NC
Standard Deviation			NC	NC	NC	NC	NC	NC	NC	NC	NC	1.4	NC	NC	NC	NC	NC	NC	NC	NC	NC
% UCL			NC	NC	NC	NC	NC	NC	NC	NC	NC	95	NC	NC	NC	NC	NC	NC	NC	NC	NC
UCL Value			NC	NC	NC	NC	NC	NC	NC	NC	NC	2.663	NC	NC	NC	NC	NC	NC	NC	NC	NC

Concentration above the SAC **VALUE** Standard deviation exceeds data assessment criteria **VALUE**

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TABLE B1
SOIL LABORATORY RESULTS COMPARED TO HSLs
All data in mg/kg unless stated otherwise

					C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	Field PID Measurement
PQL - Envirolab Services					25	50	0.2	0.5	1	1	1	ppm
NEPM 2013 HSL Land Use Category					**HSL-A/B:LOW/HIGH DENSITY RESIDENTIAL**							
Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**								
BH201	0.12-0.2	Fill: Gravelly Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH201 (lab replicate)	0.12-0.2	Fill: Gravelly Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH203	0.12-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0.1
BH203	0.4-0.5	Fill:Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0.1
BH203	0.6-0.95	Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH205	0.12-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0.1
BH205	0.2-0.4	Fill:Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH205	1.2-1.4	Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH207	0.12-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH207	0.5-0.95	Fill:Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH209	0-0.2	Fill:Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH209	0.3-0.5	Fill:Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0.1
BH209 (lab replicate)	0.3-0.5	Fill:Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0.1
BH211	0-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH211	0.5-0.75	Fill: Clayey Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH211	1.3-1.5	Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH213	0-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH213	0.3-0.5	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH213	1.2-1.4	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH213	1.4-1.9	Fill: Clayey Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH215	0-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH215	1.5-1.95	Fill:Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0.1
BH217	0-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH217 (lab replicate)	0-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH217	0.5-0.75	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH219	0-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH219	0.5-0.95	Fill: Clayey Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH219	1.4-1.6	Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH221	0-0.2	Fill: Sandy Silt	0m to <1m	Sand	<25	95	<0.2	<0.5	<1	<3	<1	0

Concentration above the SAC **VALUE**

The guideline corresponding to the elevated value is highlighted in grey in the Site Assessment Criteria Table below

SITE ASSESSMENT CRITERIA

					C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
PQL - Envirolab Services					25	50	0.2	0.5	1	1	1
NEPM 2013 HSL Land Use Category					**HSL-A/B:LOW/HIGH DENSITY RESIDENTIAL**						
Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**							
BH201	0.12-0.2	Fill: Gravelly Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH201 (lab replicate)	0.12-0.2	Fill: Gravelly Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH203	0.12-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH203	0.4-0.5	Fill:Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH203	0.6-0.95	Sandy Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH205	0.12-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH205	0.2-0.4	Fill:Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH205	1.2-1.4	Sandy Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH207	0.12-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH207	0.5-0.95	Fill:Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH209	0-0.2	Fill:Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH209	0.3-0.5	Fill:Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH209 (lab replicate)	0.3-0.5	Fill:Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH211	0-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH211	0.5-0.75	Fill: Clayey Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH211	1.3-1.5	Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH213	0-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH213	0.3-0.5	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH213	1.2-1.4	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH213	1.4-1.9	Fill: Clayey Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH215	0-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH215	1.5-1.95	Fill:Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH217	0-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH217 (lab replicate)	0-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH217	0.5-0.75	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH219	0-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH219	0.5-0.95	Fill: Clayey Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH219	1.4-1.6	Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH221	0-0.2	Fill: Sandy Silt	0m to <1m	Sand	45	110	0.5	160	55	40	3

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TABLE B2
SOIL LABORATORY RESULTS COMPARED TO HSLs
All data in mg/kg unless stated otherwise

					C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	Field PID Measurement
PQL - Envirolab Services					25	50	0.2	0.5	1	1	1	ppm
NEPM 2013 HSL Land Use Category					**HSL-A/B:LOW/HIGH DENSITY RESIDENTIAL**							
Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**								
BH221	0.75-0.95	Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0.7
BH223	0-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH223 (lab replicate)	0-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH223	0.5-0.95	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH223	1.5-1.7	Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH224	0-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH227	0-0.2	Fill: Sandy Silt	0m to <1m	Sand	<25	79	<0.2	<0.5	<1	<3	<1	0
BH227	0.5-0.7	Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH229	0-0.2	Fill: Sandy Silt	0m to <1m	Sand	<25	57	<0.2	<0.5	<1	<3	<1	0
BH229	1.1-1.3	Fill: Clayey Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH229	1.3-1.5	Clayey Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH232	0-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH232 (labe replicate)	0-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH232	1.2-1.4	Clayey Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH233	0-0.2	Fill: Sandy Silt	0m to <1m	Sand	<25	64	<0.2	<0.5	<1	<3	<1	0
BH233	0.3-0.4	Fill: Clayey Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH236	0-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH236 (lab replicate)	0-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH236	0.5-0.7	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH236	1.1-1.3	Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH237	0-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	57	<0.2	<0.5	<1	<3	<1	0
BH240	0-0.2	Fill: Clayey Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH240	0.4-0.6	Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
DUPAM3	-	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	-
DUPAM4	-	Fill: Sandy Silt	0m to <1m	Sand	<25	130	<0.2	<0.5	<1	<3	<1	-
DUPAM4 (Silica)	-	Fill: Sandy Silt	0m to <1m	Sand	NA	50	NA	NA	NA	NA	NA	-
DUPAM5	-	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
DUPAM7	-	Fill: Sandy Silt	0m to <1m	Sand	<25	56	<0.2	<0.5	<1	<1	<1	-
Total Number of Samples					56	57	56	56	56	56	56	52
Maximum Value					<PQL	130	<PQL	<PQL	<PQL	<PQL	<PQL	0.7

Concentration above the SAC **VALUE**

The guideline corresponding to the elevated value is highlighted in grey in the Site Assessment Criteria Table below

SITE ASSESSMENT CRITERIA

					C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
PQL - Envirolab Services					25	50	0.2	0.5	1	1	1
NEPM 2013 HSL Land Use Category					**HSL-A/B:LOW/HIGH DENSITY RESIDENTIAL**						
Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**							
BH221	0.75-0.95	Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH223	0-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH223 (lab replicate)	0-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH223	0.5-0.95	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH223	1.5-1.7	Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH224	0-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH227	0-0.2	Fill: Sandy Silt	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH227	0.5-0.7	Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH229	0-0.2	Fill: Sandy Silt	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH229	1.1-1.3	Fill: Clayey Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH229	1.3-1.5	Clayey Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH232	0-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH232 (labe replicate)	0-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH232	1.2-1.4	Clayey Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH233	0-0.2	Fill: Sandy Silt	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH233	0.3-0.4	Fill: Clayey Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH236	0-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH236 (lab replicate)	0-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH236	0.5-0.7	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH236	1.1-1.3	Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH237	0-0.2	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH240	0-0.2	Fill: Clayey Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH240	0.4-0.6	Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
DUPAM3	-	Soil	0m to <1m	Sand	45	110	0.5	160	55	40	3
DUPAM4	-	Soil	0m to <1m	Sand	45	110	0.5	160	55	40	3
DUPAM4 (Silica)	-	Soil	0m to <1m	Sand	NA	110	NA	NA	NA	NA	NA
DUPAM5	-	Soil	0m to <1m	Sand	45	110	0.5	160	55	40	3
DUPAM7	-	Soil	0m to <1m	Sand	45	110	0.5	160	55	40	3

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TABLE C1
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013 EILs AND ESLs
All data in mg/kg unless stated otherwise

Land Use Category				URBAN RESIDENTIAL AND PUBLIC OPEN SPACE																		
							AGED HEAVY METALS-EILs						EILs		ESLs							
				pH	CEC (cmol$_c$/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
PQL - Envirolab Services				-	1	-	4	1	1	1	1	1	0.1	0.1	25	50	100	100	0.2	0.5	1	1	0.05
Ambient Background Concentration (ABC)				-	-	-	NSL	13	28	163	5	122	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**																			
BH201	0.12-0.2	Fill: Gravelly Sand	Coarse	6.93	13.37	9.67	<4	20	36	29	15	68	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.1
BH201 (lab replicate)	0.12-0.2	Fill: Gravelly Sand	Coarse	6.93	13.37	9.67	<4	13	6	16	3	21	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.09
BH201 (lab triplicate)	0.12-0.2	Fill: Gravelly Sand	Coarse	6.93	13.37	9.67	<4	16	20	28	9	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH203	0.12-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	8	6	4	2	4	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH203	0.4-0.5	Fill:Silty Clay	Coarse	6.93	13.37	9.67	9	27	1	10	2	4	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH203	0.6-0.95	Sandy Clay	Coarse	6.93	13.37	9.67	<4	8	<1	3	2	<1	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH205	0.12-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	5	4	8	1	1	4	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH205	0.2-0.4	Fill:Silty Clay	Coarse	6.93	13.37	9.67	<4	11	2	10	1	3	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH205	1.2-1.4	Sandy Clay	Coarse	6.93	13.37	9.67	<4	11	<1	6	2	3	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH207	0.12-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	4	12	1	1	4	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH207	0.5-0.95	Fill:Silty Clay	Coarse	6.93	13.37	9.67	<4	11	<1	9	<1	2	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH209	0-0.2	Fill:Silty Clay	Coarse	6.93	13.37	9.67	<4	12	9	28	4	28	<1	<0.1	<25	<50	130	110	<0.2	<0.5	<1	<3	0.08
BH209	0.3-0.5	Fill:Silty Clay	Coarse	6.93	13.37	9.67	6	15	3	15	2	10	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH209 (lab replicate)	0.3-0.5	Fill:Silty Clay	Coarse	6.93	13.37	9.67	5	14	3	14	2	9	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH211	0-0.2	Fill: Silty Sand	Coarse	5.8	3.2	11	<4	11	6	18	2	20	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH211	0.5-0.75	Fill: Clayey Sand	Coarse	6.93	13.37	9.67	<4	17	2	9	2	10	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH211	1.3-1.5	Silty Sand	Coarse	6.93	13.37	9.67	<4	7	1	3	<1	5	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH213	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	6	5	11	3	21	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH213	0.3-0.5	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	6	3	26	3	23	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.3
BH213	1.2-1.4	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	6	5	32	3	29	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	1.6
BH213	1.4-1.9	Fill: Clayey Sand	Coarse	6.93	13.37	9.67	<4	33	<1	2	<1	5	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH215	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	5	6	26	3	31	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.2
BH215	1.5-1.95	Fill:Silty Clay	Coarse	6.93	13.37	9.67	<4	21	<1	12	1	3	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH217	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	3	4	29	<1	24	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.08
BH217 (lab replicate)	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	6	5	29	1	24	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.69
BH217 (lab triplicate)	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1
BH217	0.5-0.75	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	12	8	32	10	34	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.63
BH219	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	7	12	7	5	50	<1	<0.1	<25	<50	150	<100	<0.2	<0.5	<1	<3	<0.05
BH219	0.5-0.95	Fill: Clayey Sand	Coarse	6.93	13.37	9.67	<4	11	13	21	7	55	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.4
BH219	1.4-1.6	Silty Sand	Coarse	6.93	13.37	9.67	<4	<1	<1	<1	1	1	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05

Concentration above the SAC — **VALUE**

The guideline corresponding to the elevated value is highlighted in grey in the EIL and ESL Assessment Criteria Table below

EIL AND ESL ASSESSMENT CRITERIA

							AGED HEAVY METALS-EILs						EILs		ESLs							
				pH	CEC (cmol$_c$/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
PQL - Envirolab Services				-	1	-	4	1	1	1	1	1	0.1	0.1	25	50	100	100	0.2	0.5	1	1	0.05
Ambient Background Concentration (ABC)				-	-	-	NSL	13	28	163	5	122	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**																			
BH201	0.12-0.2	Fill: Gravelly Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH201 (lab replicate)	0.12-0.2	Fill: Gravelly Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH201 (lab triplicate)	0.12-0.2	Fill: Gravelly Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	--	--	--	--	--	--	--	--	--	--	--
BH203	0.12-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH203	0.4-0.5	Fill:Silty Clay	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	--	180	120	300	2800	50	85	70	105	20
BH203	0.6-0.95	Sandy Clay	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	--	180	120	300	2800	50	85	70	105	20
BH205	0.12-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH205	0.2-0.4	Fill:Silty Clay	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH205	1.2-1.4	Sandy Clay	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	--	180	120	300	2800	50	85	70	105	20
BH207	0.5-0.95	Fill:Silty Clay	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH209	0-0.2	Fill:Silty Clay	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH209	0.3-0.5	Fill:Silty Clay	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH209 (lab replicate)	0.3-0.5	Fill:Silty Clay	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH211	0-0.2	Fill: Silty Sand	Coarse	5.8	3.2	11	100	413	123	1263	35	352	170	180	180	120	300	2800	50	85	70	105	20
BH211	0.5-0.75	Fill: Clayey Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH211	1.3-1.5	Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	--	180	120	300	2800	50	85	70	105	20
BH213	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH213	0.3-0.5	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH213	1.2-1.4	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	--	180	120	300	2800	50	85	70	105	20
BH213	1.4-1.9	Fill: Clayey Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	--	180	120	300	2800	50	85	70	105	20
BH215	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH215	1.5-1.95	Fill:Silty Clay	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH217	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH217 (lab replicate)	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH217 (lab triplicate)	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20
BH217	0.5-0.75	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH219	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH219	0.5-0.95	Fill: Clayey Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH219	1.4-1.6	Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	--	180	120	300	2800	50	85	70	105	20

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TABLE C2
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013 EILs AND ESLs
All data in mg/kg unless stated otherwise

Land Use Category				URBAN RESIDENTIAL AND PUBLIC OPEN SPACE																				
							AGED HEAVY METALS-EILs						EILs		ESLs									
				pH	CEC (cmol$_c$/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
PQL - Envirolab Services				-	1	-	4	1	1	1	1	1	0.1	0.1	25	50	100	100	0.2	0.5	1	1	0.05
Ambient Background Concentration (ABC)				-	-	-	NSL	13	28	163	5	122	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**																				
BH221	0-0.2	Fill: Sandy Silt	Coarse	6.93	13.37	9.67	<4	1	6	2	1	31	<1	<0.1	<25	95	460	160	<0.2	<0.5	<1	<3	<0.05
BH221	0.75-0.95	Silty Sand	Coarse	6.93	13.37	9.67	<4	1	4	4	<1	7	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH223	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	7	14	21	4	46	<1	<0.1	<25	<50	110	<100	<0.2	<0.5	<1	<3	0.5
BH223 (lab replicate)	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	11	15	18	6	47	<1	<0.1	<25	<50	110	<100	<0.2	<0.5	<1	<3	0.4
BH223	0.5-0.95	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	10	16	52	11	200	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.3
BH223	1.5-1.7	Silty Sand	Coarse	6.93	13.37	9.67	<4	<1	<1	<1	<1	<1	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH224	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	5	8	26	2	62	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.2
BH227	0-0.2	Fill: Sandy Silt	Coarse	7	31	10	<4	16	9	9	2	69	<1	<0.1	<25	79	360	130	<0.2	<0.5	<1	<3	<0.05
BH227	0.5-0.7	Silty Sand	Coarse	6.93	13.37	9.67	<4	<1	<1	<1	<1	2	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH229	0-0.2	Fill: Sandy Silt	Coarse	6.93	13.37	9.67	4	12	19	22	3	86	<1	<0.1	<25	57	370	200	<0.2	<0.5	<1	<3	0.2
BH229	1.1-1.3	Fill: Clayey Sand	Coarse	6.93	13.37	9.67	5	12	3	16	3	38	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.58
BH229	1.3-1.5	Clayey Sand	Coarse	6.93	13.37	9.67	<4	8	1	8	2	25	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.2
BH232	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	6	11	7	4	44	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH232 (labe replicate)	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	6	9	7	4	34	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH232	1.2-1.4	Clayey Sand	Coarse	6.93	13.37	9.67	<4	7	<1	4	4	4	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH233	0-0.2	Fill: Sandy Silt	Coarse	6.93	13.37	9.67	<4	7	16	42	4	88	<1	<0.1	<25	64	260	110	<0.2	<0.5	<1	<3	0.2
BH233	0.3-0.4	Fill: Clayey Sand	Coarse	6.93	13.37	9.67	<4	11	16	61	5	97	<1	NA	<25	<50	140	<100	<0.2	<0.5	<1	<3	3.8
BH236	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	7	11	10	4	45	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.06
BH236 (lab replicate)	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	7	12	11	4	51	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.06
BH236	0.5-0.7	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	7	18	22	2	110	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.1
BH236	1.1-1.3	Silty Sand	Coarse	6.93	13.37	9.67	<4	2	<1	3	<1	8	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH237	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	6	48	2	6	<1	13	<1	<0.1	<25	57	150	<100	<0.2	<0.5	<1	<3	<0.05
BH240	0-0.2	Fill: Clayey Sand	Coarse	8	5.9	8	<4	5	3	13	2	18	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	0.06
BH240	0.4-0.6	Silty Sand	Coarse	6.93	13.37	9.67	<4	4	<1	7	1	17	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
DUPAM3	-	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	9	6	16	2	22	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
DUPAM4	-	Fill: Sandy Silt	Coarse	6.93	13.37	9.67	<4	3	10	8	1	65	<1	<0.1	<25	130	650	220	<0.2	<0.5	<1	<3	<0.05
DUPAM4 (Silica)	-	Fill: Sandy Silt	Coarse	6.93	13.37	9.67	NA	NA	NA	NA	NA	NA	NA	NA	NA	50	140	<100	NA	NA	NA	NA	NA
DUPAM5	-	Fill: Silty Sand	Coarse	6.93	13.37	9.67	<4	3	5	31	1	24	<1	<0.1	<25	<50	<50	<100	<0.2	<0.5	<1	<1	0.16
DUPAM7	-	Fill: Sandy Silt	Coarse	6.93	13.37	9.67	5	14	20	25	4	89	<1	<0.1	<25	56	56	640	<0.2	<0.5	<1	<1	0.23
Total Number of Samples							57	57	57	57	57	57	56	41	56	57	57	57	56	56	56	56	57
Maximum Value							9	48	36	61	15	200	<PQL	<PQL	<PQL	130	650	640	<PQL	<PQL	<PQL	<PQL	3.8

Concentration above the SAC — **VALUE**

The guideline corresponding to the elevated value is highlighted in grey in the EIL and ESL Assessment Criteria Table below

EIL AND ESL ASSESSMENT CRITERIA

							AGED HEAVY METALS-EILs						EILs		ESLs								
				pH	CEC (cmol$_c$/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
PQL - Envirolab Services				-	1	-	4	1	1	1	1	1	0.1	0.1	25	50	100	100	0.2	0.5	1	1	0.05
Ambient Background Concentration (ABC)				-	-	-	NSL	13	28	163	5	122	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**																				
BH221	0-0.2	Fill: Sandy Silt	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH221	0.75-0.95	Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	--	180	120	300	2800	50	85	70	105	20
BH223	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH223 (lab replicate)	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH223	0.5-0.95	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	--	180	120	300	2800	50	85	70	105	20
BH223	1.5-1.7	Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	--	180	120	300	2800	50	85	70	105	20
BH224	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH227	0-0.2	Fill: Sandy Silt	Coarse	7	31	10	100	413	248	1263	425	1002	170	180	180	120	300	2800	50	85	70	105	20
BH227	0.5-0.7	Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH229	0-0.2	Fill: Sandy Silt	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH229	1.1-1.3	Fill: Clayey Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	--	180	120	300	2800	50	85	70	105	20
BH229	1.3-1.5	Clayey Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	--	180	120	300	2800	50	85	70	105	20
BH232	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH232 (labe replicate)	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH232	1.2-1.4	Clayey Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	--	180	120	300	2800	50	85	70	105	20
BH233	0-0.2	Fill: Sandy Silt	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH233	0.3-0.4	Fill: Clayey Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	--	180	120	300	2800	50	85	70	105	20
BH236	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH236 (lab replicate)	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH236	0.5-0.7	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH236	1.1-1.3	Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH237	0-0.2	Fill: Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
BH240	0-0.2	Fill: Clayey Sand	Coarse	8	5.9	8	100	413	218	1263	175	522	170	180	180	120	300	2800	50	85	70	105	20
BH240	0.4-0.6	Silty Sand	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
DUPAM3	-	Soil	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
DUPAM4	-	Soil	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
DUPAM4 (Silica)	-	Soil	Coarse	6.93	13.37	9.67	--	--	--	--	--	--	--	--	--	120	300	2800	--	--	--	--	--
DUPAM5	-	Soil	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20
DUPAM7	-	Soil	Coarse	6.93	13.37	9.67	100	413	238	1263	275	822	170	180	180	120	300	2800	50	85	70	105	20

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TABLE D1
SOIL LABORATORY RESULTS COMPARED TO WASTE CLASSIFICATION GUIDELINES
All data in mg/kg unless stated otherwise

			HEAVY METALS								PAHs		OC/OP PESTICIDES				Total PCBs	TRH					BTEX COMPOUNDS				ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	B(a)P	Total Endosulfans	Chloropyrifos	Total Moderately Harmful	Total Scheduled		C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	Total C_{10}-C_{36}	Benzene	Toluene	Ethyl benzene	Total Xylenes	
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.05	0.1	0.1	0.1	0.1	0.1	25	50	100	100	50	0.2	0.5	1	1	100
General Solid Waste CT1			100	20	100	NSL	100	4	40	NSL	200	0.8	60	4	250	<50	<50	650		NSL		10,000	10	288	600	1,000	-
General Solid Waste SCC1			500	100	1900	NSL	1500	50	1050	NSL	200	10	108	7.5	250	<50	<50	650		NSL		10,000	18	518	1,080	1,800	-
Restricted Solid Waste CT2			400	80	400	NSL	400	16	160	NSL	800	3.2	240	16	1000	<50	<50	2600		NSL		40,000	40	1,152	2,400	4,000	-
Restricted Solid Waste SCC2			2000	400	7600	NSL	6000	200	4200	NSL	800	23	432	30	1000	<50	<50	2600		NSL		40,000	72	2,073	4,320	7,200	-
Sample Reference	**Sample Depth**	**Sample Description**																									
BH201	0.12-0.2	Fill: Gravelly Sand	<4	<0.4	20	36	29	<0.1	15	68	0.66	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH201 (lab replicate)	0.12-0.2	Fill: Gravelly Sand	<4	<0.4	13	6	16	<0.1	3	21	0.4	0.09	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH201 (lab triplicate)	0.12-0.2	Fill: Gravelly Sand	<4	<0.4	16	20	28	<0.1	9	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH202	0.12-0.2	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH203	0.12-0.2	Fill: Silty Sand	<4	<0.4	8	6	4	<0.1	2	4	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH203	0.4-0.5	Fill:Silty Clay	9	<0.4	27	1	10	<0.1	2	4	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH203	0.6-0.95	Sandy Clay	<4	<0.4	8	<1	3	<0.1	2	<1	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH204	0.12-0.2	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH205	0.12-0.2	Fill: Silty Sand	5	<0.4	4	8	1	<0.1	1	4	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH205	0.2-0.4	Fill:Silty Clay	<4	<0.4	11	2	10	<0.1	1	3	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH205	1.2-1.4	Sandy Clay	<4	<0.4	11	<1	6	<0.1	2	3	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH206	0.15-0.5	Fill:Silty Clay	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH207	0.12-0.2	Fill: Silty Sand	<4	<0.4	4	12	1	<0.1	1	4	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH207	0.5-0.95	Fill:Silty Clay	<4	<0.4	11	<1	9	<0.1	<1	2	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH208	0.3-0.5	Fill: Silty Clayey Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH209	0-0.2	Fill:Silty Clay	<4	<0.4	12	9	28	<0.1	4	28	0.4	0.08	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	160	160	<0.2	<0.5	<1	<3	Not Detected
BH209	0.3-0.5	Fill:Silty Clay	6	<0.4	15	3	15	<0.1	2	10	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH209 (lab replicate)	0.3-0.5	Fill:Silty Clay	5	<0.4	14	3	14	<0.1	2	9	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH210	0.3-0.5	Fill:Silty Sandy Clay	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH211	0-0.2	Fill: Silty Sand	<4	<0.4	11	6	18	<0.1	2	20	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH211	0.5-0.75	Fill: Clayey Sand	<4	<0.4	17	2	9	<0.1	2	10	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	**Detected**
BH211	1.3-1.5	Silty Sand	<4	<0.4	7	1	3	<0.1	<1	5	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH212	0-0.2	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH212	0.3-0.5	Fill:Silty Clay	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH213	0-0.2	Fill: Silty Sand	<4	<0.4	6	5	11	0.5	3	21	<0.05	<0.05	<0.1	<0.1	<0.1	0.5	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH213	0.3-0.5	Fill: Silty Sand	<4	<0.4	6	3	26	<0.1	3	23	2.6	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH213	1.2-1.4	Fill: Silty Sand	<4	<0.4	6	5	32	<0.1	3	29	18	**1.6**	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	**Detected**
BH213	1.4-1.9	Fill: Clayey Sand	<4	<0.4	33	<1	2	<0.1	<1	5	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH214	0-0.2	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH214	0.5-0.95	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH214	1.5-1.95	Fill:Silty Clay	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH215	0-0.2	Fill: Silty Sand	<4	<0.4	5	6	26	<0.1	3	31	1.5	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH215	1.5-1.95	Fill:Silty Clay	<4	<0.4	21	<1	12	<0.1	1	3	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH216	0-0.2	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH216	0.3-0.5	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH217	0-0.2	Fill: Silty Sand	<4	<0.4	3	4	29	<0.1	<1	24	0.5	0.08	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	**Detected**
BH217 (lab replicate)	0-0.2	Fill: Silty Sand	<4	<0.4	6	5	29	<0.1	1	24	7.1	0.69	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH217 (lab triplicate)	0-0.2	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	0.65	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH217	0.5-0.75	Fill: Silty Sand	<4	<0.4	12	8	32	<0.1	10	34	6.3	0.63	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH218	0-0.2	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH218	1.5-1.95	Fill:Silty Clay	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH219	0-0.2	Fill: Silty Sand	<4	<0.4	7	12	7	<0.1	5	50	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	130	130	<0.2	<0.5	<1	<3	Not Detected
BH219	0.5-0.95	Fill: Clayey Sand	<4	<0.4	11	13	21	<0.1	7	55	3.5	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH219	1.4-1.6	Silty Sand	<4	<0.4	<1	<1	<1	<0.1	1	1	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA

Concentration above the CT1 — VALUE
Concentration above SCC1 — VALUE
Concentration above the SCC2 — VALUE

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TABLE D2
SOIL LABORATORY RESULTS COMPARED TO WASTE CLASSIFICATION GUIDELINES
All data in mg/kg unless stated otherwise

			HEAVY METALS								PAHs		OC/OP PESTICIDES				Total PCBs	TRH					BTEX COMPOUNDS				ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	B(a)P	Total Endosulfans	Chloropyrifos	Total Moderately Harmful	Total Scheduled		C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	Total C_{10}-C_{36}	Benzene	Toluene	Ethyl benzene	Total Xylenes	
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.05	0.1	0.1	0.1	0.1	0.1	25	50	100	100	50	0.2	0.5	1	1	100
General Solid Waste CT1			100	20	100	NSL	100	4	40	NSL	200	0.8	60	4	250	<50	<50	650		NSL		10,000	10	288	600	1,000	-
General Solid Waste SCC1			500	100	1900	NSL	1500	50	1050	NSL	200	10	108	7.5	250	<50	<50	650		NSL		10,000	18	518	1,080	1,800	-
Restricted Solid Waste CT2			400	80	400	NSL	400	16	160	NSL	800	3.2	240	16	1000	<50	<50	2600		NSL		40,000	40	1,152	2,400	4,000	-
Restricted Solid Waste SCC2			2000	400	7600	NSL	6000	200	4200	NSL	800	23	432	30	1000	<50	<50	2600		NSL		40,000	72	2,073	4,320	7,200	-
Sample Reference	**Sample Depth**	**Sample Description**																									
BH220	0-0.1	Fill: Sandy Silt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH221	0-0.2	Fill: Sandy Silt	<4	<0.4	1	6	2	<0.1	1	31	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	83	250	350	683	<0.2	<0.5	<1	<3	Not Detected
BH221	0.75-0.95	Silty Sand	<4	<0.4	1	4	4	<0.1	<1	7	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH222	0-0.2	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH223	0-0.2	Fill: Silty Sand	<4	<0.4	7	14	21	<0.1	4	46	4.8	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH223 (lab replicate)	0-0.2	Fill: Silty Sand	<4	<0.4	11	15	18	<0.1	6	47	3.2	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH223	0.5-0.95	Fill: Silty Sand	<4	<0.4	10	16	52	0.3	11	200	2.8	0.3	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH223	1.5-1.7	Silty Sand	<4	<0.4	<1	<1	<1	<0.1	<1	<1	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH224	0-0.2	Fill: Silty Sand	<4	<0.4	5	8	26	<0.1	2	62	2.2	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH225	0.03-0.2	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH226	0-0.2	Fill: Sandy Silt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH227	0-0.2	Fill: Sandy Silt	<4	<0.4	16	9	9	<0.1	2	69	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	220	260	480	<0.2	<0.5	<1	<3	Not Detected
BH227	0.5-0.7	Silty Sand	<4	<0.4	<1	<1	<1	<0.1	<1	2	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH228	0-0.2	Fill: Sandy Silt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH229	0-0.2	Fill: Sandy Silt	4	<0.4	12	19	22	<0.1	3	86	2	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	200	290	490	<0.2	<0.5	<1	<3	Not Detected
BH229	1.1-1.3	Fill: Clayey Sand	5	<0.4	12	3	16	<0.1	3	38	7.2	0.58	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH229	1.3-1.5	Clayey Sand	<4	<0.4	8	1	8	<0.1	2	25	2.1	0.2	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH230	0-0.2	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH230	0.2-0.4	Fill: Silty Clayey Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH231	0-0.2	Fill: Sandy Silt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH232	0-0.2	Fill: Silty Sand	<4	<0.4	6	11	7	<0.1	4	44	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH232 (labe replicate)	0-0.2	Fill: Silty Sand	<4	<0.4	6	9	7	<0.1	4	34	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH232	1.2-1.4	Clayey Sand	<4	<0.4	7	<1	4	<0.1	4	4	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH233	0-0.2	Fill: Sandy Silt	<4	<0.4	7	16	42	<0.1	4	88	2.3	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	170	180	350	<0.2	<0.5	<1	<3	Not Detected
BH233	0.3-0.4	Fill: Clayey Sand	<4	<0.4	11	16	61	<0.1	5	97	62	**3.8**	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH234	0-0.2	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH234	0.2-0.4	Fill: Silty Clayey Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH233	0.4-0.6	Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	<0.05	<0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH235	0-0.2	Fill: Sandy Silt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH236	0-0.2	Fill: Silty Sand	<4	<0.4	7	11	10	<0.1	4	45	0.06	0.06	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH236 (lab replicate)	0-0.2	Fill: Silty Sand	<4	<0.4	7	12	11	<0.1	4	51	0.06	0.06	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH236	0.5-0.7	Fill: Silty Sand	<4	<0.4	7	18	22	<0.1	2	110	0.58	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH236	1.1-1.3	Silty Sand	<4	<0.4	2	<1	3	<0.1	<1	8	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH237	0-0.2	Fill: Silty Sand	6	<0.4	48	2	6	<0.1	<1	13	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	59	<100	120	179	<0.2	<0.5	<1	<3	Not Detected
BH238	0-0.2	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH239	0-0.2	Fill: Clayey Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH240	0-0.2	Fill: Clayey Sand	<4	<0.4	5	3	13	<0.1	2	18	0.2	0.06	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH240	0.4-0.6	Silty Sand	<4	<0.4	4	<1	7	<0.1	1	17	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
DUPAM3	-	Fill: Silty Sand	<4	<0.4	9	6	16	<0.1	2	22	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
DUPAM4	-	Fill: Sandy Silt	<4	<0.4	3	10	8	<0.1	1	65	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	73	390	460	923	<0.2	<0.5	<1	<3	NA
DUPAM4 (Silica)	-	Fill: Sandy Silt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<100	110	50	160	NA	NA	NA	NA	NA
DUPAM5	-	Fill: Silty Sand	<4	<0.4	3	5	31	<0.1	1	24	2	0.16	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
DUPAM5 (replicate)	-	Fill: Silty Sand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1	<0.1	<0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DUPAM7	-	Fill: Sandy Silt	5	<0.4	14	20	25	<0.1	4	89	2.9	0.23	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	310	500	810	<0.2	<0.5	<1	<1	NA
Total Number of samples			57	57	57	57	57	57	57	57	58	58	41	42	42	42	41	56	57	57	57	57	56	56	56	56	57
Maximum Value			9	<PQL	48	36	61	0.5	15	200	62	3.8	<PQL	<PQL	<PQL	0.5	<PQL	<PQL	83	390	500	923	<PQL	<PQL	<PQL	<PQL	NC

Concentration above the CT1 **VALUE**
Concentration above SCC1 **VALUE**
Concentration above the SCC2 **VALUE**

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TABLE E
SOIL LABORATORY TCLP RESULTS
All data in mg/L unless stated otherwise

			B(a)P
PQL - Envirolab Services			0.001
TCLP1 - General Solid Waste			0.04
TCLP2 - Restricted Solid Waste			0.16
TCLP3 - Hazardous Waste			>0.16
Sample Reference	**Sample Depth**	**Sample Description**	
BH213	1.2-1.4	Fill: Silty Sand	<0.001
BH233	0.3-0.4	Fill: Clayey Sand	<0.001
Total Number of samples			2
Maximum Value			<PQL

General Solid Waste	**VALUE**
Restricted Solid Waste	**VALUE**
Hazardous Waste	**VALUE**

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TABLE F
SOIL LABORATORY RESULTS COMPARED TO MANAGEMENT LIMITS
All data in mg/kg unless stated otherwise

			C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)
PQL - Envirolab Services			25	50	100	100
NEPM 2013 Land Use Category			**COMMERCIAL/INDUSTRIAL**			
Sample Reference	**Sample Depth**	**Soil Texture**				
BH201	0.12-0.2	Coarse	<25	<50	<100	<100
BH201 (lab replicate)	0.12-0.2	Coarse	<25	<50	<100	<100
BH203	0.12-0.2	Coarse	<25	<50	<100	<100
BH203	0.4-0.5	Coarse	<25	<50	<100	<100
BH203	0.6-0.95	Coarse	<25	<50	<100	<100
BH205	0.12-0.2	Coarse	<25	<50	<100	<100
BH205	0.2-0.4	Coarse	<25	<50	<100	<100
BH205	1.2-1.4	Coarse	<25	<50	<100	<100
BH207	0.12-0.2	Coarse	<25	<50	<100	<100
BH207	0.5-0.95	Coarse	<25	<50	<100	<100
BH209	0-0.2	Coarse	<25	<50	130	110
BH209	0.3-0.5	Coarse	<25	<50	<100	<100
BH209 (lab replicate)	0.3-0.5	Coarse	<25	<50	<100	<100
BH211	0-0.2	Coarse	<25	<50	<100	<100
BH211	0.5-0.75	Coarse	<25	<50	<100	<100
BH211	1.3-1.5	Coarse	<25	<50	<100	<100
BH213	0-0.2	Coarse	<25	<50	<100	<100
BH213	0.3-0.5	Coarse	<25	<50	<100	<100
BH213	1.2-1.4	Coarse	<25	<50	<100	<100
BH213	1.4-1.9	Coarse	<25	<50	<100	<100
BH215	0-0.2	Coarse	<25	<50	<100	<100
BH215	1.5-1.95	Coarse	<25	<50	<100	<100
BH217	0-0.2	Coarse	<25	<50	<100	<100
BH217 (lab replicate)	0-0.2	Coarse	<25	<50	<100	<100
BH217	0.5-0.75	Coarse	<25	<50	<100	<100
BH219	0-0.2	Coarse	<25	<50	150	<100
BH219	0.5-0.95	Coarse	<25	<50	<100	<100
BH219	1.4-1.6	Coarse	<25	<50	<100	<100
BH221	0-0.2	Coarse	<25	95	460	160
BH221	0.75-0.95	Coarse	<25	<50	<100	<100
BH223	0-0.2	Coarse	<25	<50	110	<100
BH223 (lab replicate)	0-0.2	Coarse	<25	<50	110	<100
BH223	0.5-0.95	Coarse	<25	<50	<100	<100
BH223	1.5-1.7	Coarse	<25	<50	<100	<100
BH224	0-0.2	Coarse	<25	<50	<100	<100
BH227	0-0.2	Coarse	<25	79	360	130
BH227	0.5-0.7	Coarse	<25	<50	<100	<100
BH229	0-0.2	Coarse	<25	57	370	200
BH229	1.1-1.3	Coarse	<25	<50	<100	<100
BH229	1.3-1.5	Coarse	<25	<50	<100	<100
BH232	0-0.2	Coarse	<25	<50	<100	<100
BH232 (labe replicate)	0-0.2	Coarse	<25	<50	<100	<100
BH232	1.2-1.4	Coarse	<25	<50	<100	<100
BH233	0-0.2	Coarse	<25	64	260	110
BH233	0.3-0.4	Coarse	<25	<50	140	<100
BH236	0-0.2	Coarse	<25	<50	<100	<100
BH236 (lab replicate)	0-0.2	Coarse	<25	<50	<100	<100
BH236	0.5-0.7	Coarse	<25	<50	<100	<100
BH236	1.1-1.3	Coarse	<25	<50	<100	<100
BH237	0-0.2	Coarse	<25	57	150	<100
BH240	0-0.2	Coarse	<25	<50	<100	<100
BH240	0.4-0.6	Coarse	<25	<50	<100	<100
DUPAM3	-	Fill: Silty Sand	<25	<50	<100	<100
DUPAM4	-	Fill: Sandy Silt	<25	130	650	220
DUPAM5	-	Fill: Silty Sand	<25	<50	<50	<100
DUPAM7	-	Fill: Sandy Silt	<25	56	56	640
Total Number of Samples			56	56	56	56
Maximum Value			<PQL	130	650	640

Concentration above the SAC **VALUE**

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TABLE G
SOIL LABORATORY RESULTS COMPARED T0 DIRECT CONTACT CRITERIA
All data in mg/kg unless stated otherwise

Analyte		C_6-C_{10}	>C_{10}-C_{16}	>C_{16}-C_{34}	>C_{34}-C_{40}	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	PID
PQL - Envirolab Services		25	50	100	100	0.2	0.5	1	1	1	
CRC 2011 -Direct contact Criteria		82,000	62,000	85,000	120,000	1,100	120,000	85,000	130,000	29,000	
Site Use		**Intrusive Maintenance Worker - DIRECT SOIL CONTACT**									
Sample Reference	**Sample Depth**										
BH201	0.12-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH201 (lab replicate)	0.12-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH203	0.12-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0.1
BH203	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0.1
BH203	0.6-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH205	0.12-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0.1
BH205	0.2-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH205	1.2-1.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH207	0.12-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH207	0.5-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH209	0-0.2	<25	<50	130	110	<0.2	<0.5	<1	<3	<1	0
BH209	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0.1
BH209 (lab replicate)	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0.1
BH211	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH211	0.5-0.75	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH211	1.3-1.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH213	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH213	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH213	1.2-1.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH213	1.4-1.9	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH215	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH215	1.5-1.95	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0.1
BH217	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH217 (lab replicate)	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH217	0.5-0.75	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH219	0-0.2	<25	<50	150	<100	<0.2	<0.5	<1	<3	<1	0
BH219	0.5-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH219	1.4-1.6	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH221	0-0.2	<25	95	460	160	<0.2	<0.5	<1	<3	<1	0
BH221	0.75-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0.7
BH223	0-0.2	<25	<50	110	<100	<0.2	<0.5	<1	<3	<1	0
BH223 (lab replicate)	0-0.2	<25	<50	110	<100	<0.2	<0.5	<1	<3	<1	0
BH223	0.5-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH223	1.5-1.7	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH224	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH227	0-0.2	<25	79	360	130	<0.2	<0.5	<1	<3	<1	0
BH227	0.5-0.7	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH229	0-0.2	<25	57	370	200	<0.2	<0.5	<1	<3	<1	0
BH229	1.1-1.3	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH229	1.3-1.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH232	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH232 (labe replicate)	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH232	1.2-1.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH233	0-0.2	<25	64	260	110	<0.2	<0.5	<1	<3	<1	0
BH233	0.3-0.4	<25	<50	140	<100	<0.2	<0.5	<1	<3	<1	0
BH236	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH236 (lab replicate)	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH236	0.5-0.7	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH236	1.1-1.3	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH237	0-0.2	<25	57	150	<100	<0.2	<0.5	<1	<3	<1	0
BH240	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
BH240	0.4-0.6	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0
DUPAM3	-	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	-
DUPAM4	-	<25	130	650	220	<0.2	<0.5	<1	<3	<1	-
DUPAM5	-	<25	<50	<50	<100	<0.2	<0.5	<1	<1	<1	-
DUPAM7	-	<25	56	56	640	<0.2	<0.5	<1	<1	<1	-
Total Number of Samples		56	56	56	56	56	56	56	56	56	52
Maximum Value		<PQL	130	650	640	<PQL	<PQL	<PQL	<PQL	<PQL	0.7

Concentration above the SAC **VALUE**

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TABLE H1
ASBESTOS QUANTIFICATION - FIELD OBSERVATIONS AND LABORATORY RESULTS
HSL -C:Public open space; secondary schools; and footpaths

FIELD DATA															LABORATORY DATA											
Date Sampled	Sample reference	Sample Depth	Visible ACM in top 100mm	Approx. Volume of Soil (L)	Soil Mass (g)	Mass ACM (g)	Mass Asbestos in ACM (g)	[Asbestos from ACM in soil] (%w/w)	Mass ACM <7mm (g)	Mass Asbestos in ACM <7mm (g)	[Asbestos from ACM <7mm in soil] (%w/w)	Mass FA (g)	Mass Asbestos in FA (g)	[Asbestos from FA in soil] (%w/w)	Lab Report Number	Sample refeference	Sample Depth	Sample Mass (g)	Asbestos ID in soil (AS4964) >0.1g/kg	Trace Analysis	Total Asbestos (g/kg)	Asbestos ID in soil <0.1g/kg	ACM >7mm Estimation (g)	FA and AF Estimation (g)	ACM >7mm Estimation %(w/w)	FA and AF Estimation %(w/w)
SAC			**No**					**0.02**			**0.001**			**0.001**											**0.02**	**0.001**
22.8.19	BH201	0.12-0.2	NA	10	2,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH201	0.12-0.2	788.23	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
22.8.19	BH201	0.2-0.6	NA	10	4,600	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.8.19	BH202	0.12-0.3	NA	10	2,000	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH202	0.12-0.2	653.34	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
23.8.19	BH203	0.12-0.4	NA	10	3,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH203	0.12-0.2	680.83	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
23.8.19	BH203	0.4-0.5	NA	10	1,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	224849	BH204	0.12-0.2	526.36	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
23.8.19	BH204	0.2-0.9	NA	10	5,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.8.19	BH205	0.2-0.8	NA	10	9,900	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH205	0.2-0.4	503.13	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
23.8.19	BH205	0.8-1.4	NA	10	3,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.8.19	BH206	0.15-0.8	NA	10	9,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH206	0.15-0.5	489.78	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
23.8.19	BH206	0.8-1.1	NA	10	3,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.8.19	BH207	0.12-0.2	NA	10	3,000	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.8.19	BH207	0.2-1.1	NA	10	10,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH207	0.5-0.95	586.98	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
23.8.19	BH208	0.09-0.3	NA	10	3,000	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.8.19	BH208	0.3-1.5	NA	10	11,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH208	0.3-0.5	688.4	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
23.8.19	BH209	0-0.3	NA	10	10,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH209	0-0.2	635.02	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH210	0-0.3	No	10	5,900	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.8.19	BH210	0.3-0.65	NA	10	1,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH210	0.3-0.5	731.6	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
22.8.19	BH211	0-0.4	No	10	11,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH211	0-0.2	554.72	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
22.8.19	BH211 (AMF4)	0.4-1.2	NA	10	5,900	No ACM observed	--	--	No ACM <7mm observed	--	--	2.043	2.043	**0.0027**	224849	BH211	0.5-0.75	741.53	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	Chrysotile	–	0.0134	<0.01	**0.0018**
21.8.19	BH212	0-0.3	No	10	11,900	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH212	0-0.2	768.34	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH212	0.3-1.0	NA	10	9,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH212	0.3-0.5	573.57	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH212	1.0-1.3	NA	10	1,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.8.19	BH213	0-0.3	No	10	8,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH213	0-0.2	698.34	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	224849	BH213	0.3-0.5	652.55	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH213 (AMF1)	0.3-1.4	NA	10	11,800	3.762	0.5643	0.0048	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH213	1.2-1.4	725.46	Chrysotile asbestos detected: Organic fibres detected	No asbestos detected	0.1143	Chrysotile	–	0.0829	<0.01	**0.0114**
21.8.19	BH213	1.4-1.9	NA	10	8,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.8.19	BH214 (AMF2)	0-0.3	**Yes**	10	9,100	No ACM observed	--	--	No ACM <7mm observed	--	--	9.517	9.517	**0.1046**	224849	BH214	0-0.2	470.1	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH214	0.3-1.2	NA	10	8,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH214	0.5-0.95	646.84	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH214	1.2-2.0	NA	10	11,900	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH214	1.5-1.95	555.36	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH214	2.0-2.7	NA	10	7,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.8.19	BH215	0-0.3	No	10	9,000	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH215	0-0.2	535.27	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH215	0.3-0.5	NA	10	2,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.8.19	BH215	0.5-1.5	NA	10	10,600	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.8.19	BH215	1.5-2.6	NA	10	10,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH215	1.5-1.95	638.39	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH216	0-0.3	No	10	9,600	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH216	0-0.2	626.27	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH216	0.3-0.5	NA	10	2,600	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH216	0.3-0.5	604.4	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH216	0.5-1.5	NA	10	10,100	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.8.19	BH216	1.5-2.3	NA	10	12,100	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.8.19	BH216	2.3-2.7	NA	10	5,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Concentration above the SAC **VALUE**

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TABLE H2
ASBESTOS QUANTIFICATION - FIELD OBSERVATIONS AND LABORATORY RESULTS
HSL -C:Public open space; secondary schools; and footpaths

FIELD DATA															LABORATORY DATA										
Date Sampled	Sample reference	Sample Depth	Visible ACM in top 100mm	Approx. Volume of Soil (L)	Soil Mass (g)	Mass ACM (g)	Mass Asbestos in ACM (g)	[Asbestos from ACM in soil] (%w/w)	Mass ACM <7mm (g)	Mass Asbestos in ACM <7mm (g)	[Asbestos from ACM <7mm in soil] (%w/w)	Mass FA (g)	Mass Asbestos in FA (g)	[Asbestos from FA in soil] (%w/w)	Lab Report Number	Sample refeference	Sample Depth	Sample Mass (g)	Asbestos ID in soil (AS4964) >0.1g/kg	Trace Analysis	Total Asbestos (g/kg)	Asbestos ID in soil <0.1g/kg	ACM >7mm Estimation (g)	FA and AF Estimation (g)	ACM >7mm Estimation %(w/w)	FA and AF Estimation %(w/w)
SAC			**No**					**0.02**			**0.001**			**0.001**											**0.02**	**0.001**
23.8.19	BH217	0-0.5	No	10	10,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH217	0-0.2	610.49	Chrysotile asbestos detected: Amosite asbestos detected: Crocidolite asbestos detected: Organic fibres detected	No asbestos detected	1.7103	Amosite and Crocidolite	–	1.0441	<0.01	**0.1710**
23.8.19	BH217	0.5-0.75	NA	10	3,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH217	0.5-0.75	536.67	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
23.8.19	BH217	0.75-1.5	NA	10	7,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.8.19	BH218	0-0.2	No	10	10,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH218	0-0.2	715.01	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
23.8.19	BH218	0.2-1.5	NA	10	9,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.8.19	BH218	1.5-2.4	NA	10	3,000	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH218	1.5-1.95	515.42	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
22.8.19	BH219	0-0.5	No	10	10,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH219	0-0.2	590.54	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
22.8.19	BH219	0.5-1.4	NA	10	11,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH219	0.5-0.95	661.82	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH220	0-0.3	No	10	5,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH220	0-0.1	106.95	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH220	0.3-0.65	NA	10	2,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.8.19	BH221	0-0.3	No	10	4,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH221	0-0.2	139.18	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH221	0.3-0.65	NA	10	6,700	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.8.19	BH222	0-0.4	No	10	11,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH222	0-0.2	549.37	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH222	0.4-1.0	NA	10	10,900	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.8.19	BH223	0-0.3	No	10	8,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH223	0-0.2	661.92	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
21.8.19	BH223	0.3-1.3	NA	10	11,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH223	0.5-0.95	722.25	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
22.8.19	BH224	0-0.2	No	10	9,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH224	0-0.2	622.53	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
22.8.19	BH225	0.03-0.8	NA	10	11,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH225	0.03-0.2	725.03	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
22.8.19	BH226	0-0.6	No	10	5,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH226	0-0.2	230.11	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
22.8.19	BH227	0-0.3	No	10	5,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH227	0-0.2	181.26	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
22.8.19	BH228	0-0.3	No	10	5,700	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH228	0-0.2	195.5	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
26.8.19	BH229	0-0.2	No	10	5,000	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH229	0-0.2	236.22	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
26.8.19	BH229	0.2-0.6	NA	10	2,000	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26.8.19	BH229	0.6-1.1	NA	10	2,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	224849	BH229	1.1-1.3	552.55	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
23.8.19	BH230	0-0.2	No	10	11,900	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH230	0-0.2	722.17	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	224849	BH230	0.2-0.4	695.65	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
26.8.19	BH231	0-0.3	No	10	4,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH231	0-0.2	207.49	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
23.8.19	BH232	0-0.2	No	10	10,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH232	0-0.2	720.9	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
26.8.19	BH233	0-0.3	No	10	5,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH233	0-0.2	150.14	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	224849	BH233	0.3-0.4	450.91	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
23.8.19	BH234	0-0.2	No	10	12,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH234	0-0.2	620.91	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	224849	BH234	0.2-0.4	704.3	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
26.8.19	BH235	0-0.2	No	10	6,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH235	0-0.2	285.19	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
22.8.19	BH236	0-0.3	No	10	11,700	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH236	0-0.2	413.7	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
22.8.19	BH236	0.3-1.1	NA	10	10,000	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH236	0.5-0.7	535.54	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
22.8.19	BH237	0-0.3	No	10	8,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH237	0-0.2	603.29	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
22.8.19	BH238	0-0.4	No	10	10,100	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH238	0-0.2	585.04	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
26.8.19	BH239	0-0.8	No	10	6,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH239	0-0.2	317.36	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
26.8.19	BH240	0-0.4	No	10	14,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	224849	BH240	0-0.2	1034.78	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001

Concentration above the SAC **VALUE**

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TABLE I
SUMMARY OF FIBRE CEMENT ANALYSIS FOR ASBESTOS

		Asbestos
Sample Reference	**Sample Description**	
AMF1	Fibre cement material	**Asbestos detected**
AMF2	Matted material	**Asbestos detected**
AMF3	Surface fibre cement material	**Asbestos detected**
AMF4	Degraded fibre cement material	**Asbestos detected**
Total Number of Samples		4

Asbestos detected in fibre cement

TABLE J
GROUNDWATER LABORATORY RESULTS COMPARED TO HSLs
All data in µg/L unless stated otherwise

				C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	
PQL - Envirolab Services				10	50	1	1	1	3	1	PID
NEPM 2013 - Land Use Category				**HSL-A/B: LOW/HIGH DENSITY RESIDENTIAL**							
Sample Reference	**Water Depth**	**Depth Category**	**Soil Category**								
MW206	5.47	2m to <4m	Sand	<10	<50	<1	<1	<1	<3	<1	2.7
MW210	7.68	2m to <4m	Sand	<10	<50	<1	<1	<1	<3	<1	0.2
MW228	8.6	2m to <4m	Sand	<10	<50	<1	<1	<1	<3	<1	1.1
DUPAM1	7.68	2m to <4m	Sand	<10	<50	<1	<1	<1	<3	<1	-
Total Number of Samples				4	4	4	4	4	4	4	3
Maximum Value				<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	2.7

Concentration above the SAC VALUE

The guideline corresponding to the elevated value is highlighted in grey in the Site Assessment Criteria Table below

HSL GROUNDWATER ASSESSMENT CRITERIA

				C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
PQL - Envirolab Services				10	50	1	1	1	3	1
NEPM 2013 - Land Use Category				**HSL-A/B: LOW/HIGH DENSITY RESIDENTIAL**						
Sample Reference	**Water Depth**	**Depth Category**	**Soil Category**							
MW206	5.47	2m to <4m	Sand	1000	1000	800	NL	NL	NL	NL
MW210	7.68	2m to <4m	Sand	1000	1000	800	NL	NL	NL	NL
MW228	8.6	2m to <4m	Sand	1000	1000	900	NL	NL	NL	NL
DUPAM1	7.68	2m to <4m	Sand	1000	1000	800	NL	NL	NL	NL

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TABLE K

SUMMARY OF GROUNDAWATER LABORATORY RESULTS COMPARED TO ECOLOGICAL GILs SAC

All results in µg/L unless stated otherwise.

	PQL Envirolab Services	ANZG 2018 Fresh Waters	SAMPLES			
			MW206	MW210	MW228	DUPAM1
Inorganic Compounds and Parameters						
pH	0.1	6.5 - 8.5	6.3	4.9	5.9	-
Electrical Conductivity (µS/cm)	1	NSL	450	340	380	-
Metals and Metalloids						
Arsenic (As III)	1	24	<1	<1	<1	<1
Cadmium	0.1	0.2	<0.1	<0.1	<0.1	<0.1
Chromium (SAC for Cr III adopted)	1	3.3	<1	<1	<1	<1
Copper	1	1.4	<1	<1	<1	<1
Lead	1	3.4	<1	<1	<1	<1
Total Mercury (inorganic)	0.05	0.06	<0.05	<0.05	<0.05	<0.05
Nickel	1	11	2	<1	3	<1
Zinc	1	8	**22**	8	**20**	8
Monocyclic Aromatic Hydrocarbons (BTEX Compounds)						
Benzene	1	950	<1	<1	<1	<1
Toluene	1	180	<1	<1	<1	<1
Ethylbenzene	1	80	<1	<1	<1	<1
m+p-xylene	2	75	<2	<2	<2	<2
o-xylene	1	350	<1	<1	<1	<1
Total xylenes	2	NSL	<3	<3	<3	<3
Volatile Organic Compounds (VOCs), including chlorinated VOCs						
Dichlorodifluoromethane	10	NSL	<10	<10	<10	-
Chloromethane	10	NSL	<10	<10	<10	-
Vinyl Chloride	10	100	<10	<10	<10	-
Bromomethane	10	NSL	<10	<10	<10	-
Chloroethane	10	NSL	<10	<10	<10	-
Trichlorofluoromethane	10	NSL	<10	<10	<10	-
1,1-Dichloroethene	1	700	<1	<1	<1	-
Trans-1,2-dichloroethene	1	NSL	<1	<1	<1	-
1,1-dichloroethane	1	90	<1	<1	<1	-
Cis-1,2-dichloroethene	1	NSL	<1	<1	<1	-
Bromochloromethane	1	NSL	<1	<1	<1	-
Chloroform	1	370	10	<1	<1	-
2,2-dichloropropane	1	NSL	<1	<1	<1	-
1,2-dichloroethane	1	1900	<1	<1	<1	-
1,1,1-trichloroethane	1	270	<1	<1	<1	-
1,1-dichloropropene	1	NSL	<1	<1	<1	-
Cyclohexane	1	NSL	<1	<1	<1	-
Carbon tetrachloride	1	240	<1	<1	<1	-
Benzene	1	see BTEX	<1	<1	<1	-
Dibromomethane	1	NSL	<1	<1	<1	-
1,2-dichloropropane	1	900	<1	<1	<1	-
Trichloroethene	1	NSL	<1	<1	<1	-
Bromodichloromethane	1	NSL	<1	<1	<1	-
trans-1,3-dichloropropene	1	NSL	<1	<1	<1	-
cis-1,3-dichloropropene	1	NSL	<1	<1	<1	-
1,1,2-trichloroethane	1	6500	<1	<1	<1	-
Toluene	1	see BTEX	<1	<1	<1	-
1,3-dichloropropane	1	1100	<1	<1	<1	-
Dibromochloromethane	1	NSL	<1	<1	<1	-
1,2-dibromoethane	1	NSL	<1	<1	<1	-
Tetrachloroethene	1	70	<1	<1	<1	-
1,1,1,2-tetrachloroethane	1	NSL	<1	<1	<1	-
Chlorobenzene	1	55	<1	<1	<1	-
Ethylbenzene	1	see BTEX	<1	<1	<1	-
Bromoform	1	NSL	<1	<1	<1	-
m+p-xylene	2	see BTEX	<2	<2	<2	-
Styrene	1	NSL	<1	<1	<1	-
1,1,2,2-tetrachloroethane	1	400	<1	<1	<1	-
o-xylene	1	see BTEX	<1	<1	<1	-
1,2,3-trichloropropane	1	NSL	<1	<1	<1	-
Isopropylbenzene	1	30	<1	<1	<1	-
Bromobenzene	1	NSL	<1	<1	<1	-
n-propyl benzene	1	NSL	<1	<1	<1	-
2-chlorotoluene	1	NSL	<1	<1	<1	-
4-chlorotoluene	1	NSL	<1	<1	<1	-
1,3,5-trimethyl benzene	1	NSL	<1	<1	<1	-
Tert-butyl benzene	1	NSL	<1	<1	<1	-
1,2,4-trimethyl benzene	1	NSL	<1	<1	<1	-
1,3-dichlorobenzene	1	260	<1	<1	<1	-
Sec-butyl benzene	1	NSL	<1	<1	<1	-
1,4-dichlorobenzene	1	60	<1	<1	<1	-
4-isopropyl toluene	1	NSL	<1	<1	<1	-
1,2-dichlorobenzene	1	160	<1	<1	<1	-
n-butyl benzene	1	NSL	<1	<1	<1	-
1,2-dibromo-3-chloropropane	1	NSL	<1	<1	<1	-
1,2,4-trichlorobenzene	1	85	<1	<1	<1	-
Hexachlorobutadiene	1	NSL	<1	<1	<1	-
1,2,3-trichlorobenzene	1	3	<1	<1	<1	-
Polycyclic Aromatic Hydrocarbons (PAHs)						
Naphthalene	0.2	16	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	0.1	NSL	<0.1	<0.1	<0.1	<0.1
Acenaphthene	0.1	NSL	<0.1	<0.1	<0.1	<0.1
Fluorene	0.1	NSL	<0.1	<0.1	<0.1	<0.1
Phenanthrene	0.1	0.6	<0.1	<0.1	<0.1	<0.1
Anthracene	0.1	**0.01**	<0.1	<0.1	<0.1	<0.1
Fluoranthene	0.1	1	<0.1	<0.1	<0.1	<0.1
Pyrene	0.1	NSL	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	0.1	NSL	<0.1	<0.1	<0.1	<0.1
Chrysene	0.1	NSL	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	0.2	NSL	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	0.1	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	0.1	NSL	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	0.1	NSL	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	0.1	NSL	<0.1	<0.1	<0.1	<0.1

Concentration above the GIL — VALUE
PQL exceeds GIL — **BOLD/RED**

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TABLE L

SUMMARY OF GROUNDAWATER LABORATORY RESULTS COMPARED TO HUMAN CONTACT GILs

All results in µg/L unless stated otherwise.

	PQL Envirolab Services	Recreational Criteria 10* ADWG 2018	NHMRC ADWG 2018	SAMPLES			
				MW206	MW210	MW228	DUPAM1
Metals and Metalloids							
Arsenic (As III)	1	100	10	<1	**<1**	<1	<1
Cadmium	0.1	20	2	<0.1	<0.1	<0.1	<0.1
Chromium (total)	1	500	50	**<1**	<1	<1	<1
Copper	1	20000	2000	**<1**	<1	**<1**	**<1**
Lead	1	100	10	**<1**	<1	<1	<1
Total Mercury (inorganic)	0.05	10	1	<0.05	<0.05	<0.05	<0.05
Nickel	1	200	20	2	<1	**3**	<1
Zinc	1	30000	3000	22	8	**20**	8
Monocyclic Aromatic Hydrocarbons (BTEX Compounds)							
Benzene	1	10	1	<1	<1	<1	<1
Toluene	1	8000	800	<1	<1	<1	<1
Ethylbenzene	1	3000	300	<1	<1	<1	<1
m+p-xylene	2	NSL	NSL	<2	<2	<2	<2
o-xylene	1	NSL	NSL	<1	<1	<1	<1
Total xylenes	2	6000	600	<3	<3	<3	<3
Volatile Organic Compounds (VOCs), including chlorinated VOCs							
Dichlorodifluoromethane	10	NSL	NSL	<10	<10	<10	-
Chloromethane	10	NSL	NSL	<10	<10	<10	-
Vinyl Chloride	10	3	0.3	<10	<10	<10	-
Bromomethane	10	NSL	NSL	<10	<10	<10	-
Chloroethane	10	NSL	NSL	<10	<10	<10	-
Trichlorofluoromethane	10	NSL	NSL	<10	<10	<10	-
1,1-Dichloroethene	1	300.0	30	<1	<1	<1	-
Trans-1,2-dichloroethene	1	NSL	NSL	<1	<1	<1	-
1,1-dichloroethane	1	NSL	NSL	<1	<1	<1	-
Cis-1,2-dichloroethene	1	NSL	NSL	<1	<1	<1	-
Bromochloromethane	1	2500	250	<1	<1	<1	-
Chloroform	1	2500		10	<1	<1	-
2,2-dichloropropane	1	NSL	NSL	<1	<1	<1	-
1,2-dichloroethane	1	30	3	<1	<1	<1	-
1,1,1-trichloroethane	1	NSL	NSL	<1	<1	<1	-
1,1-dichloropropene	1	NSL	NSL	<1	<1	<1	-
Cyclohexane	1	NSL	NSL	<1	<1	<1	-
Carbon tetrachloride	1	NSL	NSL	<1	<1	<1	-
Benzene	1	NSL	see BTEX	<1	<1	<1	-
Dibromomethane	1	NSL	NSL	<1	<1	<1	-
1,2-dichloropropane	1	NSL	NSL	<1	<1	<1	-
Trichloroethene	1	NSL	NSL	<1	<1	<1	-
Bromodichloromethane	1	NSL	NSL	<1	<1	<1	-
trans-1,3-dichloropropene	1	NSL	NSL	<1	<1	<1	-
cis-1,3-dichloropropene	1	NSL	NSL	<1	<1	<1	-
1,1,2-trichloroethane	1	NSL	NSL	<1	<1	<1	-
Toluene	1	NSL	see BTEX	<1	<1	<1	-
1,3-dichloropropane	1	NSL	NSL	<1	<1	<1	-
Dibromochloromethane	1	NSL	NSL	<1	<1	<1	-
1,2-dibromoethane	1	NSL	NSL	<1	<1	<1	-
Tetrachloroethene	1	NSL	NSL	<1	<1	<1	-
1,1,1,2-tetrachloroethane	1	NSL	NSL	<1	<1	<1	-
Chlorobenzene	1	3000	300	<1	<1	<1	-
Ethylbenzene	1	NSL	see BTEX	<1	<1	<1	-
Bromoform	1	NSL	NSL	<1	<1	<1	-
m+p-xylene	2	NSL	see BTEX	<2	<2	<2	-
Styrene	1	NSL	NSL	<1	<1	<1	-
1,1,2,2-tetrachloroethane	1	NSL	NSL	<1	<1	<1	-
o-xylene	1	NSL	see BTEX	<1	<1	<1	-
1,2,3-trichloropropane	1	NSL	NSL	<1	<1	<1	-
Isopropylbenzene	1	NSL	NSL	<1	<1	<1	-
Bromobenzene	1	NSL	NSL	<1	<1	<1	-
n-propyl benzene	1	NSL	NSL	<1	<1	<1	-
2-chlorotoluene	1	NSL	NSL	<1	<1	<1	-
4-chlorotoluene	1	NSL	NSL	<1	<1	<1	-
1,3,5-trimethyl benzene	1	NSL	NSL	<1	<1	<1	-
Tert-butyl benzene	1	NSL	NSL	<1	<1	<1	-
1,2,4-trimethyl benzene	1	NSL	NSL	<1	<1	<1	-
1,3-dichlorobenzene	1	3000	300	<1	<1	<1	-
Sec-butyl benzene	1	NSL	NSL	<1	<1	<1	-
1,4-dichlorobenzene	1	400	40	<1	<1	<1	-
4-isopropyl toluene	1	NSL	NSL	<1	<1	<1	-
1,2-dichlorobenzene	1	15000	1500	<1	<1	<1	-
n-butyl benzene	1	NSL	NSL	<1	<1	<1	-
1,2-dibromo-3-chloropropane	1	NSL	NSL	<1	<1	<1	-
1,2,4-trichlorobenzene	1	NSL	NSL	<1	<1	<1	-
Hexachlorobutadiene	1	NSL	NSL	<1	<1	<1	-
1,2,3-trichlorobenzene	1	NSL	NSL	<1	<1	<1	-
Polycyclic Aromatic Hydrocarbons (PAHs)							
Naphthalene	0.2	NSL	NSL	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	0.1	NSL	NSL	<0.1	<0.1	<0.1	<0.1
Acenaphthene	0.1	NSL	NSL	<0.1	<0.1	<0.1	<0.1
Fluorene	0.1	NSL	NSL	<0.1	<0.1	<0.1	<0.1
Phenanthrene	0.1	NSL	NSL	<0.1	<0.1	<0.1	<0.1
Anthracene	0.1	NSL	NSL	<0.1	<0.1	<0.1	<0.1
Fluoranthene	0.1	NSL	NSL	<0.1	<0.1	<0.1	<0.1
Pyrene	0.1	NSL	NSL	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	0.1	NSL	NSL	<0.1	<0.1	<0.1	<0.1
Chrysene	0.1	NSL	NSL	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	0.2	NSL	NSL	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	0.1	0.1	**0.01**	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	0.1	NSL	NSL	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	0.1	NSL	NSL	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	0.1	NSL	NSL	<0.1	<0.1	<0.1	<0.1

Concentration above the GIL — VALUE
PQL exceeds GIL — **BOLD/RED**

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TABLE M
SOIL INTRA-LABORATORY DUPLICATE RESULTS & RPD CALCULATIONS
All results in mg/kg unless stated otherwise

SAMPLE	ANALYSIS	Envirolab PQL	INITIAL	REPEAT	MEAN	RPD %
Sample Ref = BH211 (0-0.2m)	Arsenic	4	<4	<4	NC	NC
Dup Ref = DUPAM3	Cadmium	0.4	<0.4	<0.4	NC	NC
	Chromium	1	11	9	10.0	20
Envirolab Report: 224849	Copper	1	6	6	6.0	0
	Lead	1	18	16	17.0	12
	Mercury	0.1	<0.1	<0.1	NC	NC
	Nickel	1	2	2	2.0	0
	Zinc	1	20	22	21.0	10
	Naphthalene	0.1	<0.1	<0.1	NC	NC
	Acenaphthylene	0.1	<0.1	<0.1	NC	NC
	Acenaphthene	0.1	<0.1	<0.1	NC	NC
	Fluorene	0.1	<0.1	<0.1	NC	NC
	Phenanthrene	0.1	<0.1	<0.1	NC	NC
	Anthracene	0.1	<0.1	<0.1	NC	NC
	Fluoranthene	0.1	<0.1	<0.1	NC	NC
	Pyrene	0.1	<0.1	<0.1	NC	NC
	Benzo(a)anthracene	0.1	<0.1	<0.1	NC	NC
	Chrysene	0.1	<0.1	<0.1	NC	NC
	Benzo(b,j+k)fluoranthene	0.2	<0.2	<0.2	NC	NC
	Benzo(a)pyrene	0.05	<0.05	<0.05	NC	NC
	Indeno(123-cd)pyrene	0.1	<0.1	<0.1	NC	NC
	Dibenzo(ah)anthracene	0.1	<0.1	<0.1	NC	NC
	Benzo(ghi)perylene	0.1	<0.1	<0.1	NC	NC
	Total OCPs	0.1	<0.1	<0.1	NC	NC
	Total OPPs	0.1	<0.1	<0.1	NC	NC
	Total PCBs	0.1	<0.1	<0.1	NC	NC
	TRH C_6-C_{10} (F1)	25	<25	<25	NC	NC
	TRH >C_{10}-C_{16} (F2)	50	<50	<50	NC	NC
	TRH >C_{16}-C_{34} (F3)	100	<100	<100	NC	NC
	TRH >C_{34}-C_{40} (F4)	100	<100	<100	NC	NC
	Benzene	0.2	<0.2	<0.2	NC	NC
	Toluene	0.5	<0.5	<0.5	NC	NC
	Ethylbenzene	1	<1	<1	NC	NC
	m+p-xylene	2	<2	<2	NC	NC
	o-xylene	1	<1	<1	NC	NC

RPD Results Above the Acceptance Criteria VALUE

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TABLE N
SOIL INTRA-LABORATORY DUPLICATE RESULTS & RPD CALCULATIONS
All results in mg/kg unless stated otherwise

SAMPLE	ANALYSIS	Envirolab PQL	INITIAL	REPEAT	MEAN	RPD %
Sample Ref = BH227 (0-0.2m)	Arsenic	4	<4	<4	NC	NC
Dup Ref = DUPAM4	Cadmium	0.4	<0.4	<0.4	NC	NC
	Chromium	1	16	3	9.5	137
Envirolab Report: 224849	Copper	1	9	10	9.5	11
	Lead	1	9	8	8.5	12
	Mercury	0.1	<0.1	<0.1	NC	NC
	Nickel	1	2	1	1.5	67
	Zinc	1	69	65	67.0	6
	Naphthalene	0.1	<0.1	<0.1	NC	NC
	Acenaphthylene	0.1	<0.1	<0.1	NC	NC
	Acenaphthene	0.1	<0.1	<0.1	NC	NC
	Fluorene	0.1	<0.1	<0.1	NC	NC
	Phenanthrene	0.1	<0.1	<0.1	NC	NC
	Anthracene	0.1	<0.1	<0.1	NC	NC
	Fluoranthene	0.1	<0.1	<0.1	NC	NC
	Pyrene	0.1	<0.1	<0.1	NC	NC
	Benzo(a)anthracene	0.1	<0.1	<0.1	NC	NC
	Chrysene	0.1	<0.1	<0.1	NC	NC
	Benzo(b,j+k)fluoranthene	0.2	<0.2	<0.2	NC	NC
	Benzo(a)pyrene	0.05	<0.05	<0.05	NC	NC
	Indeno(123-cd)pyrene	0.1	<0.1	<0.1	NC	NC
	Dibenzo(ah)anthracene	0.1	<0.1	<0.1	NC	NC
	Benzo(ghi)perylene	0.1	<0.1	<0.1	NC	NC
	Total OCPs	0.1	<0.1	<0.1	NC	NC
	Total OPPs	0.1	<0.1	<0.1	NC	NC
	Total PCBs	0.1	<0.1	<0.1	NC	NC
	TRH C6-C10 (F1)	25	<25	<25	NC	NC
	TRH >C10-C16 (F2)	50	79	130	104.5	49
	TRH >C16-C34 (F3)	100	360	650	505.0	57
	TRH >C34-C40 (F4)	100	130	220	175.0	51
	Benzene	0.2	<0.2	<0.2	NC	NC
	Toluene	0.5	<0.5	<0.5	NC	NC
	Ethylbenzene	1	<1	<1	NC	NC
	m+p-xylene	2	<2	<2	NC	NC
	o-xylene	1	<1	<1	NC	NC

RPD Results Above the Acceptance Criteria VALUE

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TABLE O
SOIL INTER-LABORATORY DUPLICATE RESULTS & RPD CALCULATIONS
All results in mg/kg unless stated otherwise

SAMPLE	ANALYSIS	Envirolab PQL	Envirolab VIC PQL	INITIAL	REPEAT	MEAN	RPD %
Sample Ref = BH217 (0-0.2m)	Arsenic	4	4	<4	<4	NC	NC
Dup Ref = DUPAM5	Cadmium	0.4	0.4	<0.4	<0.4	NC	NC
	Chromium	1	1	3	3	3.0	0
Envirolab Report: 224849	Copper	1	1	4	5	4.5	22
Envirolab VIC Report: 17925	Lead	1	1	29	31	30.0	7
	Mercury	0.1	0.1	<0.1	<0.1	NC	NC
	Nickel	1	1	<1	1	0.8	67
	Zinc	1	1	24	24	24.0	0
	Naphthalene	0.1	0.1	<0.1	<0.1	NC	NC
	Acenaphthylene	0.1	0.1	<0.1	<0.1	NC	NC
	Acenaphthene	0.1	0.1	<0.1	<0.1	NC	NC
	Fluorene	0.1	0.1	<0.1	<0.1	NC	NC
	Phenanthrene	0.1	0.1	<0.1	0.2	0.1	120
	Anthracene	0.1	0.1	<0.1	<0.1	NC	NC
	Fluoranthene	0.1	0.1	0.2	0.4	0.3	67
	Pyrene	0.1	0.1	0.1	0.3	0.2	100
	Benzo(a)anthracene	0.1	0.1	<0.1	0.2	0.1	120
	Chrysene	0.1	0.1	0.1	0.1	0.1	0
	Benzo(b,j+k)fluoranthene	0.2	0.2	<0.2	0.4	0.3	120
	Benzo(a)pyrene	0.05	0.05	0.08	0.16	0.1	67
	Indeno(123-cd)pyrene	0.1	0.1	<0.1	0.1	0.1	67
	Dibenzo(ah)anthracene	0.1	0.1	<0.1	<0.1	NC	NC
	Benzo(ghi)perylene	0.1	0.1	<0.1	0.2	0.1	120
	Total OCPs	0.1	0.1	<0.1	<0.1	NC	NC
	Total OPPs	0.1	0.1	<0.1	<0.1	NC	NC
	Total PCBs	0.1	0.1	<0.1	<0.1	NC	NC
	TRH C6-C10 (F1)	25	25	<25	<25	NC	NC
	TRH >C10-C16 (F2)	50	50	<50	<50	NC	NC
	TRH >C16-C34 (F3)	100	100	<100	<100	NC	NC
	TRH >C34-C40 (F4)	100	100	<100	<100	NC	NC
	Benzene	0.2	0.2	<0.2	<0.2	NC	NC
	Toluene	0.5	0.5	<0.5	<0.5	NC	NC
	Ethylbenzene	1	1	<1	<1	NC	NC
	m+p-xylene	2	2	<2	<2	NC	NC
	o-xylene	1	1	<1	<1	NC	NC

RPD Results Above the Acceptance Criteria VALUE

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TABLE P
SOIL INTER-LABORATORY DUPLICATE RESULTS & RPD CALCULATIONS
All results in mg/kg unless stated otherwise

SAMPLE	ANALYSIS	Envirolab PQL	Envirolab VIC PQL	INITIAL	REPEAT	MEAN	RPD %
Sample Ref = BH229 (0-0.2m)	Arsenic	4	4	4	5	4.5	22
Dup Ref = DUPAM7	Cadmium	0.4	0.4	<0.4	<0.4	NC	NC
	Chromium	1	1	12	14	13.0	15
Envirolab Report: 224849	Copper	1	1	19	20	19.5	5
Envirolab VIC Report: 17925	Lead	1	1	22	25	23.5	13
	Mercury	0.1	0.1	<0.1	<0.1	NC	NC
	Nickel	1	1	3	4	3.5	29
	Zinc	1	1	86	89	87.5	3
	Naphthalene	0.1	0.1	<0.1	<0.1	NC	NC
	Acenaphthylene	0.1	0.1	<0.1	0.2	0.1	120
	Acenaphthene	0.1	0.1	<0.1	<0.1	NC	NC
	Fluorene	0.1	0.1	<0.1	<0.1	NC	NC
	Phenanthrene	0.1	0.1	<0.1	0.1	0.1	67
	Anthracene	0.1	0.1	<0.1	<0.1	NC	NC
	Fluoranthene	0.1	0.1	0.3	0.3	0.3	0
	Pyrene	0.1	0.1	0.3	0.4	0.4	29
	Benzo(a)anthracene	0.1	0.1	0.2	0.2	0.2	0
	Chrysene	0.1	0.1	0.2	0.2	0.2	0
	Benzo(b,j+k)fluoranthene	0.2	0.2	0.4	0.6	0.5	40
	Benzo(a)pyrene	0.05	0.05	0.2	0.23	0.2	14
	Indeno(123-cd)pyrene	0.1	0.1	0.2	0.2	0.2	0
	Dibenzo(ah)anthracene	0.1	0.1	<0.1	<0.1	NC	NC
	Benzo(ghi)perylene	0.1	0.1	0.3	0.3	0.3	0
	Total OCPs	0.1	0.1	<0.1	<0.1	NC	NC
	Total OPPs	0.1	0.1	<0.1	<0.1	NC	NC
	Total PCBs	0.1	0.1	<0.1	<0.1	NC	NC
	TRH C6-C10 (F1)	25	25	<25	<25	NC	NC
	TRH >C10-C16 (F2)	50	50	57	56	56.5	2
	TRH >C16-C34 (F3)	100	100	370	640	505.0	53
	TRH >C34-C40 (F4)	100	100	200	310	255.0	43
	Benzene	0.2	0.2	<0.2	<0.2	NC	NC
	Toluene	0.5	0.5	<0.5	<0.5	NC	NC
	Ethylbenzene	1	1	<1	<1	NC	NC
	m+p-xylene	2	2	<2	<2	NC	NC
	o-xylene	1	1	<1	<1	NC	NC

RPD Results Above the Acceptance Criteria VALUE

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TABLE Q
GROUNDWATER INTRA-LABORATORY DUPLICATE RESULTS & RPD CALCULATIONS
All results in µg/L unless stated otherwise

SAMPLE	ANALYSIS	Envirolab PQL	INITIAL	REPEAT	MEAN	RPD %
Sample Ref = MW210	Arsenic	1	<1	<1	NC	NC
Dup Ref = DUPAMW1	Cadmium	0.1	<0.1	<0.1	NC	NC
	Chromium	1	<1	<1	NC	NC
Envirolab Report: 225518	Copper	1	<1	<1	NC	NC
	Lead	1	<1	<1	NC	NC
	Mercury	0.05	<0.05	<0.05	NC	NC
	Nickel	1	<1	<1	NC	NC
	Zinc	1	8	8	8	0
	Naphthalene	0.2	<0.2	<0.2	NC	NC
	Acenaphthylene	0.1	<0.1	<0.1	NC	NC
	Acenaphthene	0.1	<0.1	<0.1	NC	NC
	Fluorene	0.1	<0.1	<0.1	NC	NC
	Phenanthrene	0.1	<0.1	<0.1	NC	NC
	Anthracene	0.1	<0.1	<0.1	NC	NC
	Fluoranthene	0.1	<0.1	<0.1	NC	NC
	Pyrene	0.1	<0.1	<0.1	NC	NC
	Benzo(a)anthracene	0.1	<0.1	<0.1	NC	NC
	Chrysene	0.1	<0.1	<0.1	NC	NC
	Benzo(b,j+k)fluoranthene	0.2	<0.2	<0.2	NC	NC
	Benzo(a)pyrene	0.1	<0.1	<0.1	NC	NC
	Indeno(123-cd)pyrene	0.1	<0.1	<0.1	NC	NC
	Dibenzo(ah)anthracene	0.1	<0.1	<0.1	NC	NC
	Benzo(ghi)perylene	0.1	<0.1	<0.1	NC	NC
	TRH C6-C10 (F1)	10	<10	<10	NC	NC
	TRH >C10-C16 (F2)	50	<50	<50	NC	NC
	TRH >C16-C34 (F3)	100	<100	<100	NC	NC
	TRH >C34-C40 (F4)	100	<100	<100	NC	NC
	Benzene	1	<1	<1	NC	NC
	Toluene	1	<1	<1	NC	NC
	Ethylbenzene	1	<1	<1	NC	NC
	m+p-xylene	2	<2	<2	NC	NC
	o-xylene	1	<1	<1	NC	NC

RPD Results Above the Acceptance Criteria VALUE

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TABLE R

SUMMARY OF FIELD QA/QC RESULTS

ANALYSIS	Envirolab PQL		TB1[S]	TB1[S] (Replicate)	TB2[S]	TB2[S] (Replicate)	TSW1[W]	FRAM1[W]	TS1[S]
			21.8.19	21.8.19	21.8.19	21.8.19	4.9.19	23.8.19	23.8.19
	mg/kg	µg/L	mg/kg	mg/kg	mg/kg	mg/kg	% Recovery	µg/L	% Recovery
Arsenic	4	1	<4	<4	4	<4	NA	NA	NA
Cadmium	0.4	0.1	<0.4	<0.4	<0.4	<0.4	NA	NA	NA
Chromium	1	1	**2**	**2**	**2**	**2**	NA	NA	NA
Copper	1	1	<1	<1	<1	<1	NA	NA	NA
Lead	1	1	<1	<1	<1	<1	NA	NA	NA
Mercury	0.1	0.5	<0.1	<0.1	<0.1	<0.1	NA	NA	NA
Nickel	1	1	<1	<1	<1	<1	NA	NA	NA
Zinc	1	1	1	1	1	1	NA	NA	NA
Benzene	0.2	0.2	NA	NA	NA	NA	112%	<1	101%
Toluene	0.5	0.5	NA	NA	NA	NA	105%	1	105%
Ethylbenzene	1	1	NA	NA	NA	NA	104%	<1	96%
m+p-xylene	2	2	NA	NA	NA	NA	101%	<2	97%
o-xylene	1	1	NA	NA	NA	NA	104%	<1	96%

Explanation:

[W] Sample type (water)

[S] Sample type (sand)

BTEX concentrations in trip spikes are presented as % recovery

Values above PQLs/Acceptance criteria **VALUE**

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TABLE S
SUMMARY OF LABORATORY RESULTS - ACID SULFATE SOIL ANALYSIS (sPOCAS)

		Analysis	pH_{KCL}	TAA	pH_{ox}	TPA	TSA	S_{POS}	Liming Rate
				pH 6.5		pH 6.5	pH 6.5	%w/w	kg $CaCO_3$/tonne
Acid Sulfate Soil Manual (1998) - Action Criteria		Coarse Textured Soil	pH 5.0	18molH+/ tonne	pH 5.0	18molH+/ tonne	18molH+/ tonne	0.03% w/w	
Sample Reference	**Sample Depth (m)**	**Sample Description**							
BH206	1.2-1.5	Clayey Sand	5.5	6	5.2	5	<5	<0.005	<0.75
BH206 (lab replicate)	1.2-1.5	Clayey Sand	5.5	6	5.3	5	<5	<0.005	<0.75
BH206	3.3-3.45	Clayey Sand	4.2	39	4.6	45	6	<0.005	2.9
BH206	5.4-5.6	Clayey Sand	4.2	59	4.5	58	<5	<0.005	4.4
BH206	7.7-7.95	Clayey Sand	4.2	49	4.5	38	<5	<0.005	3.7
BH210	2.9-3.15	Silty Clayey Sand	4.7	11	4.8	19	8	<0.005	0.85
BH210	5.9-6.15	Sandy Clay	4.3	31	4.7	32	<5	<0.005	2.4
BH210	7.3-7.65	Sandy Clay	4.2	71	4.5	62	<5	<0.005	5.4
BH228	3.0-3.45	Clayey Sand	4.3	36	4.7	40	<5	<0.005	2.7
BH228	4.5-4.95	Sandy Clay	4.3	51	4.5	31	<5	<0.005	3.9
BH228	7.5-7.95	Clayey Sand	4.3	26	4.5	28	<5	<0.005	2
BH239	1.3-1.6	Silty Sand	7.0	<5	6.6	<5	<5	0.005	<0.75
Total Number of Samples			12	12	12	12	12	12	12
Minimum Value			4.2	6	4.5	<5	<5	<0.005	0.85
Maximum Value			7.0	71	6.6	62	8	<0.005	5.4

Values Exceeding Action Criteria **VALUE**

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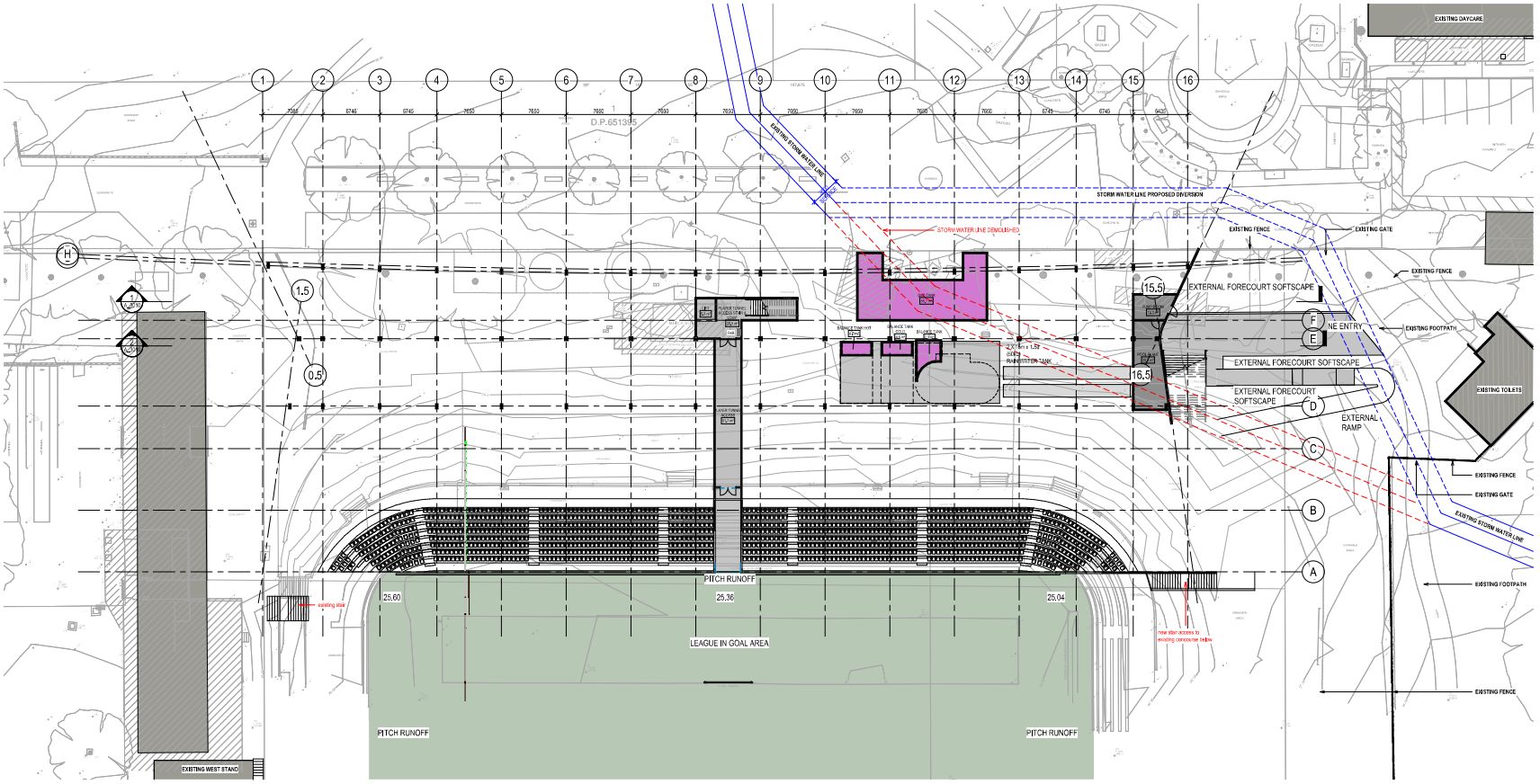
Appendix C: Site Information and Site History

Proposed Development Plans



1 B00 LOWER GROUND
A_2000 1 : 200

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- SERVICE
- STAND

REFERENCE MAP

0 2 4 8m
1:100

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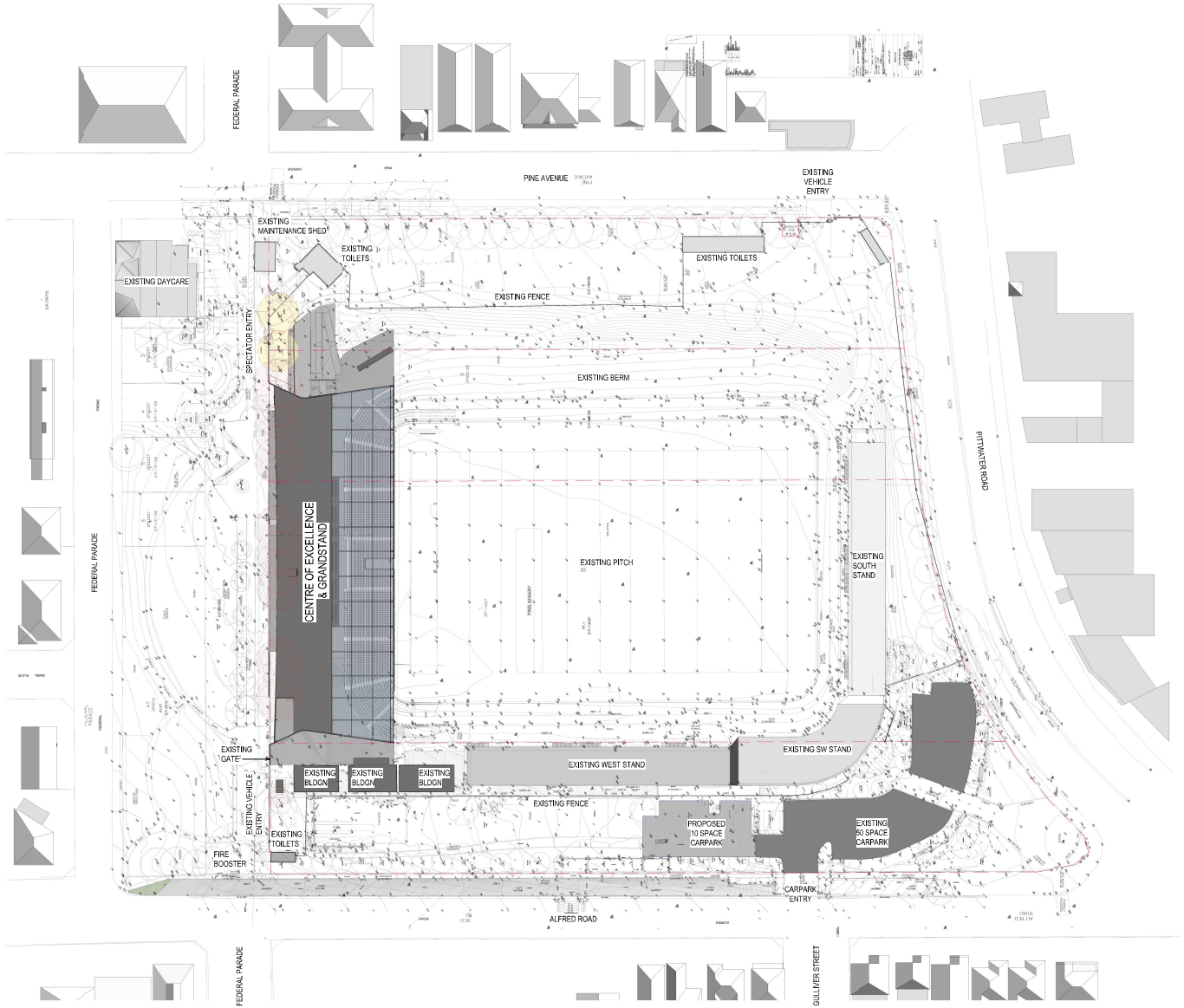

1 A_0400 PRECINCT SITE PLAN
1 : 500

SITE BOUNDARY
EXTENT OF BUILDING WORKS
TREE SUBJECT TO STORMWATER DIVERSION STRATEGY
TREE TO BE REMOVED

REFERENCE MAP

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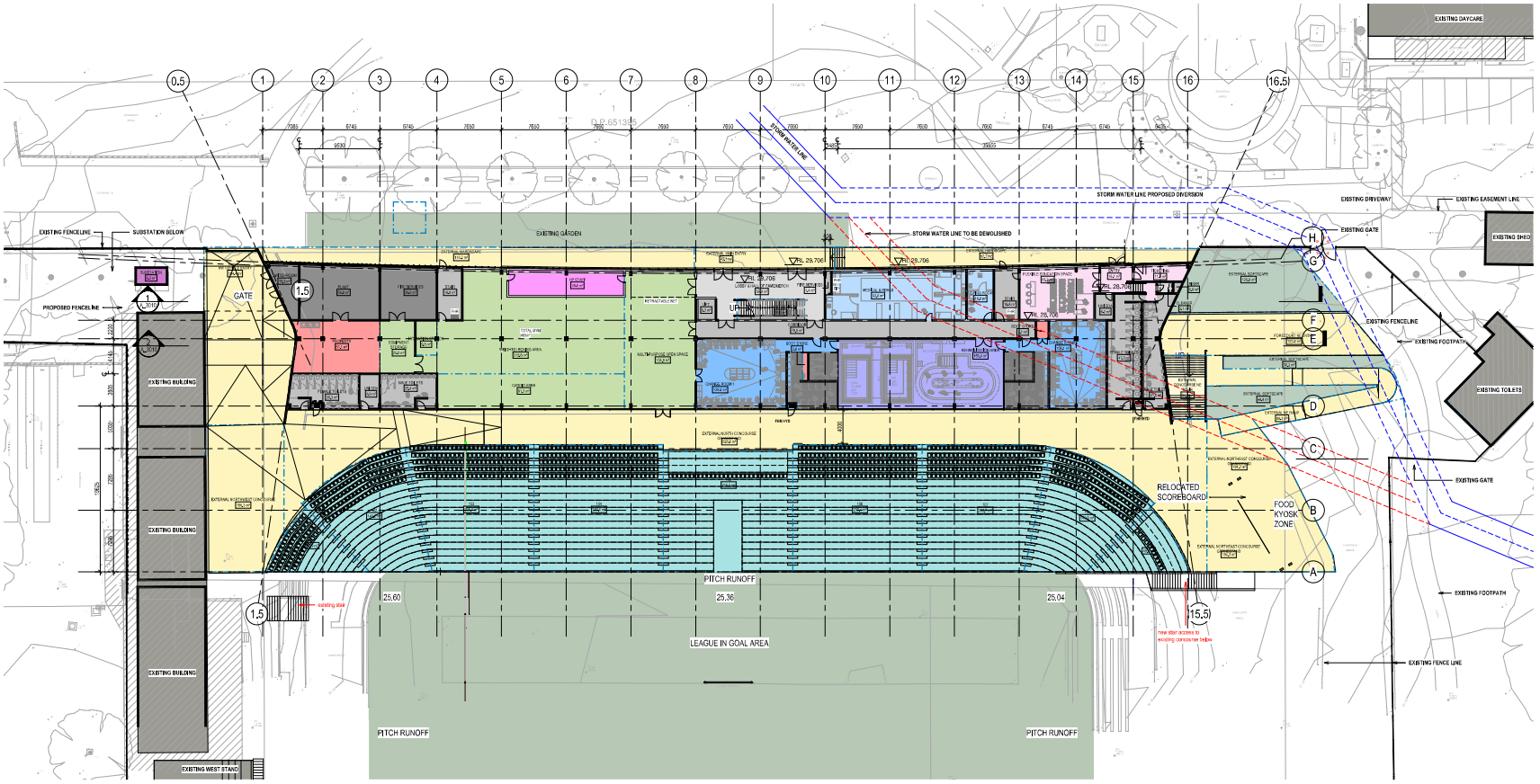

1 CONCOURSE LEVEL 00
A_1001 1 : 200

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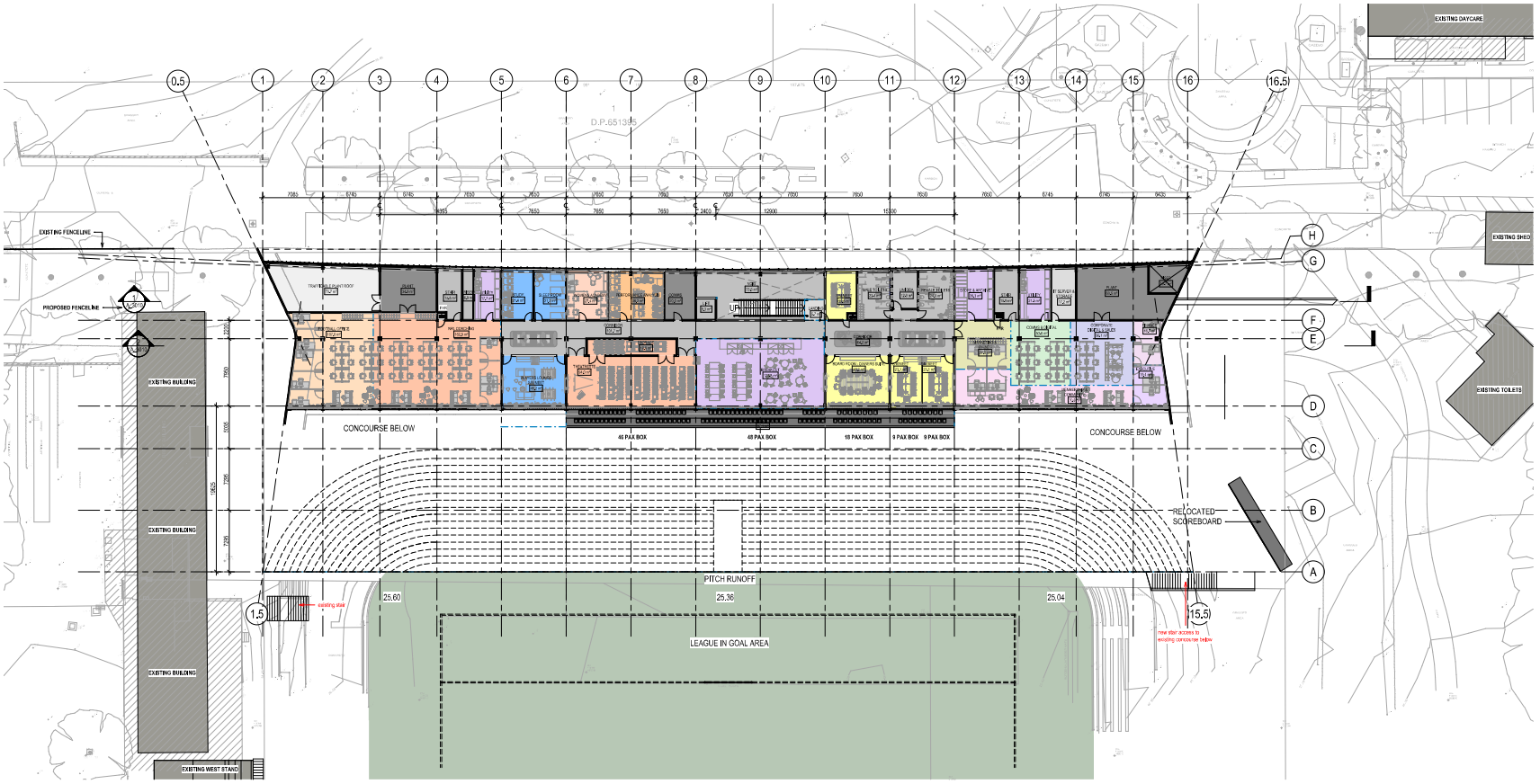

1 UPPER LEVEL 01
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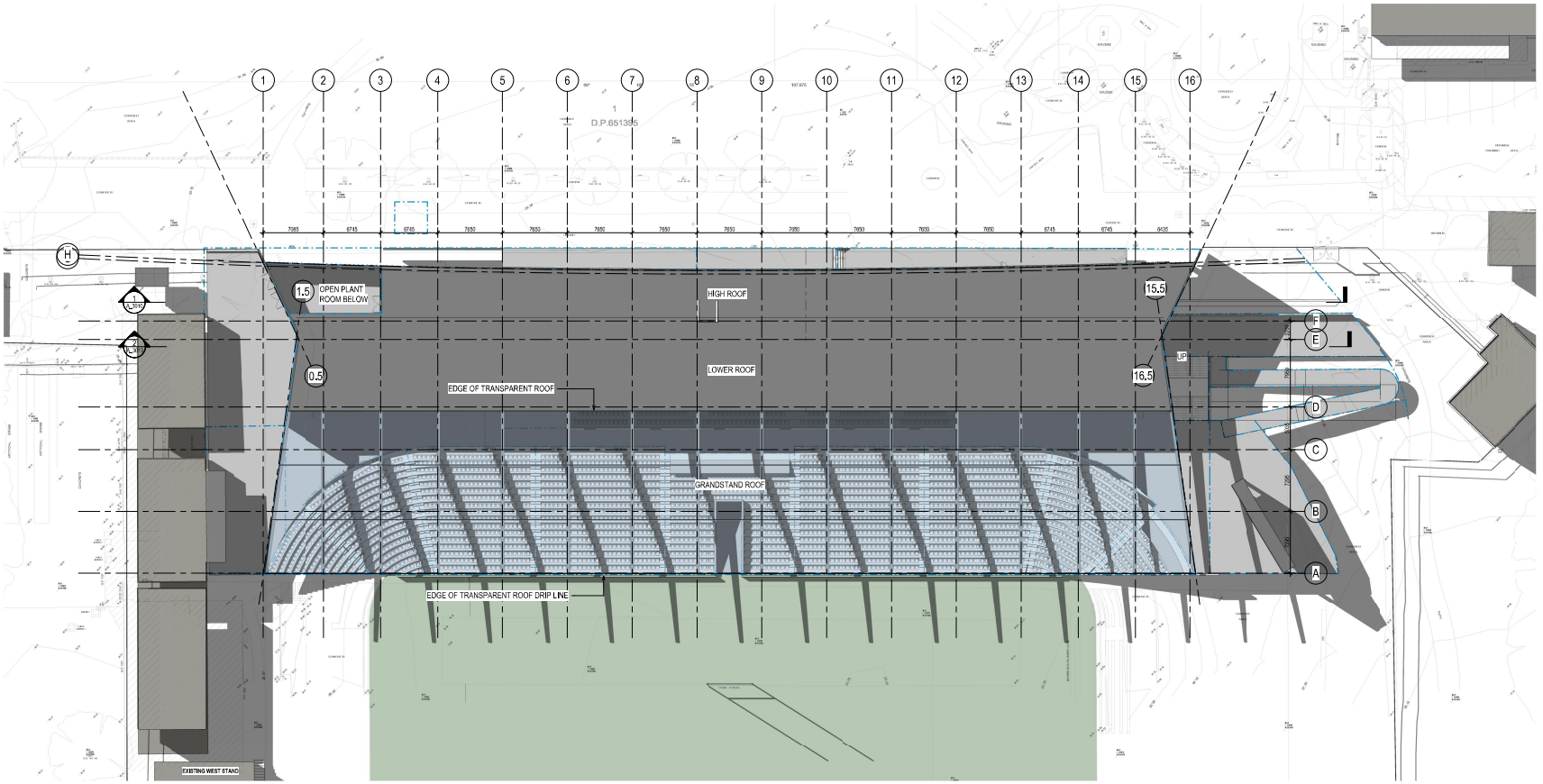

1 A_300 ROOF LEVEL
1 : 200

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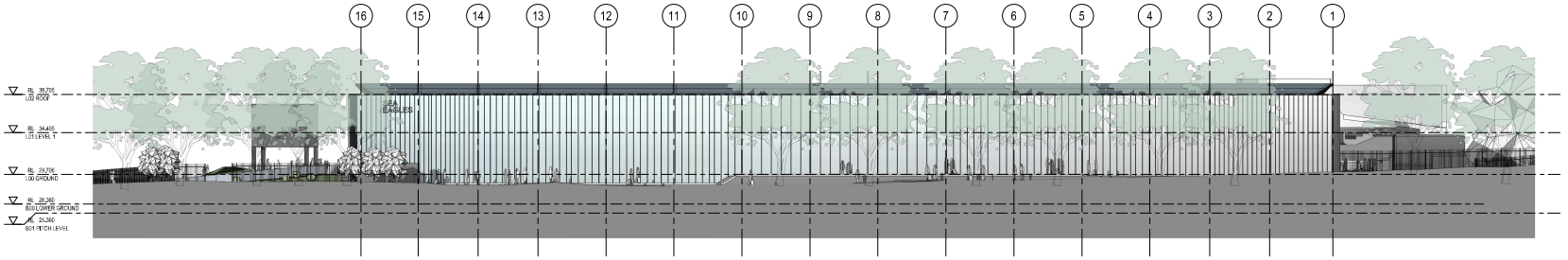
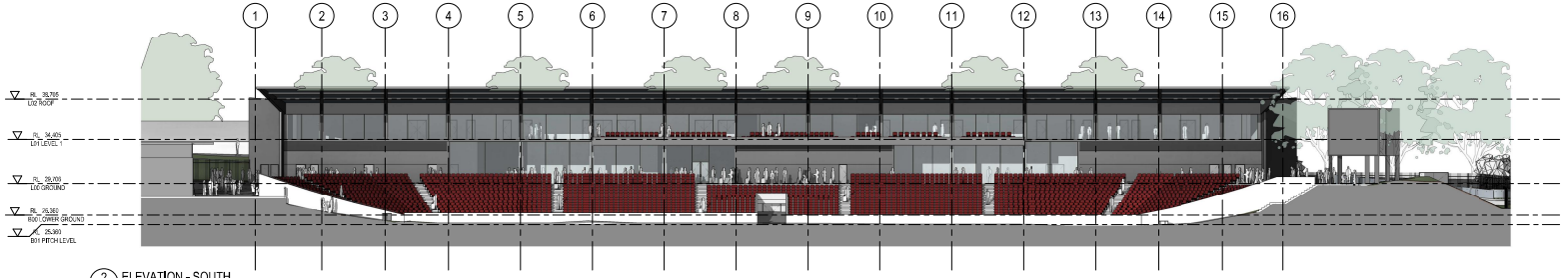


1 ELEVATION - NORTH
A_1100 1:200



2 ELEVATION - SOUTH
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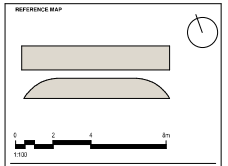

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PROJECT
BROOKVALE OVAL REDEVELOPMENT
CENTRE OF EXCELLENCE AND
GRANDSTAND

DRAWING TITLE
GA ELEVATION - NORTH & SOUTH

STATUS
SCHEMATIC DESIGN + DA

SCALE @ A0	DRAWN	REVIEWED	APPROVED
1 : 200	RP	FG	GS

PROJECT NUMBER	DRAWING NUMBER	REV
014340	A_2000	B

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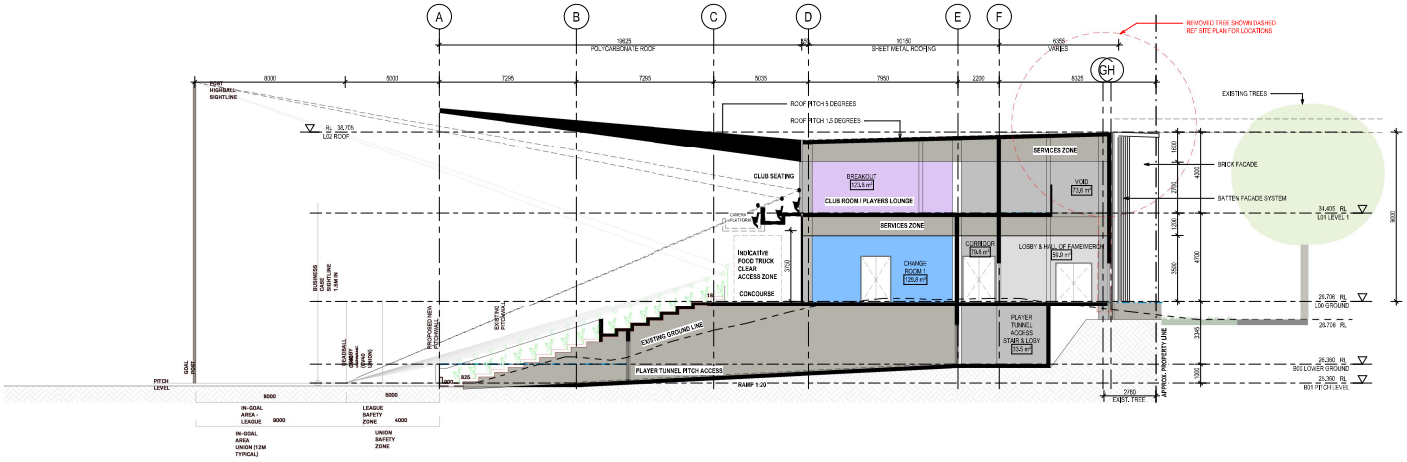
Seatcount Schedule		
Seating Bay	Count	Comments
101	94	GA
102	228	GA
103	445	GA
104	504	GA
105	312	GA
106	504	GA
107	445	GA
108	286	GA
109	52	GA
TOTAL SEATS	2870	

Premium Product Seatcount Schedule		
Seating Bay	Count	Comments
201	130	BOX
TOTAL SEATS	130	

TOTAL SEATS

TOTAL GA 2870
TOTAL VIP 130
TOTAL 3000



2 SHORT SECTION 01
A_1101 1 : 100

DEPARTMENT

- ACADEMY & WOMENS
- ADMIN SPECIFIC SPACE
- COMMUNICATIONS & DIGITAL
- CONCOURSE
- CORPORATE, DIGITAL & MECHANDISE
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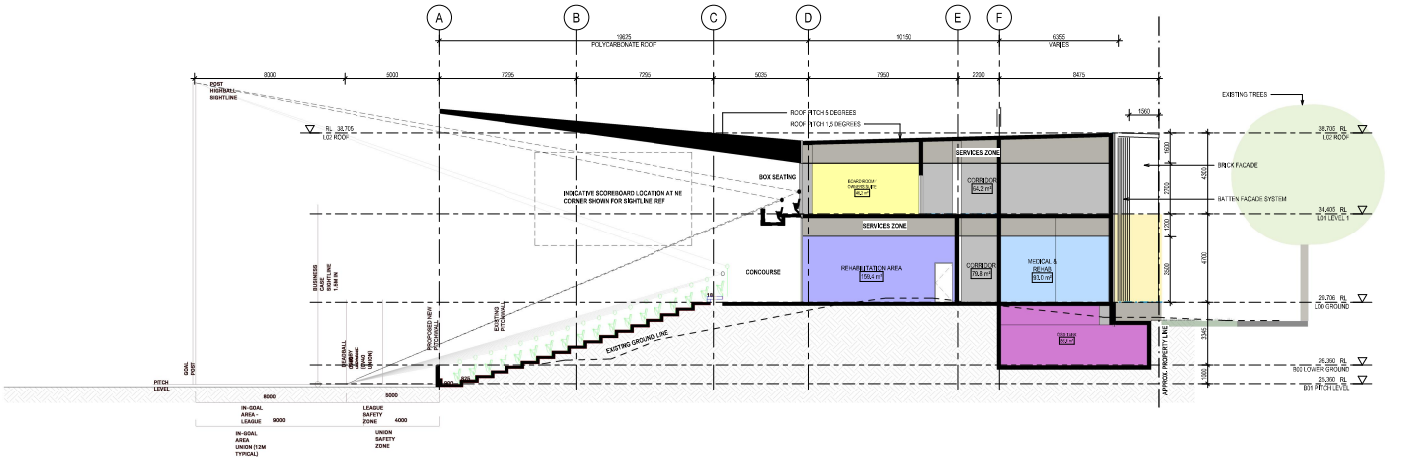
- FOOTBALL OPERATIONS
- HIGH PERFORMANCE STAFF
- LANDSCAPE
- MARKETING & EVENTS
- MEDICAL & REHABILITATION
- MEETING ROOMS
- MEMBERSHIP & COMMUNITY
- NRL COACHING
- OTHER SPACES
- PERFORMANCE ANALYSIS
- PHYSICAL PREPARATION AREA 1
- PHYSICAL PREPARATION AREA 2
- PLANT
- PLAYERS COMFORT
- PREMIUM SEATING
- PROPERTY
- REHABILITATION AREA
- ROOF
- SERVICE
- STAND



1 SHORT SECTION 02
A_1101 1 : 100

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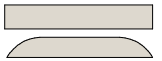

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CENTRE OF EXCELLENCE AND GRANDSTAND

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SCALE @ A0	DRAWN	REVIEWED	APPROVED
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014340	A_3000	F

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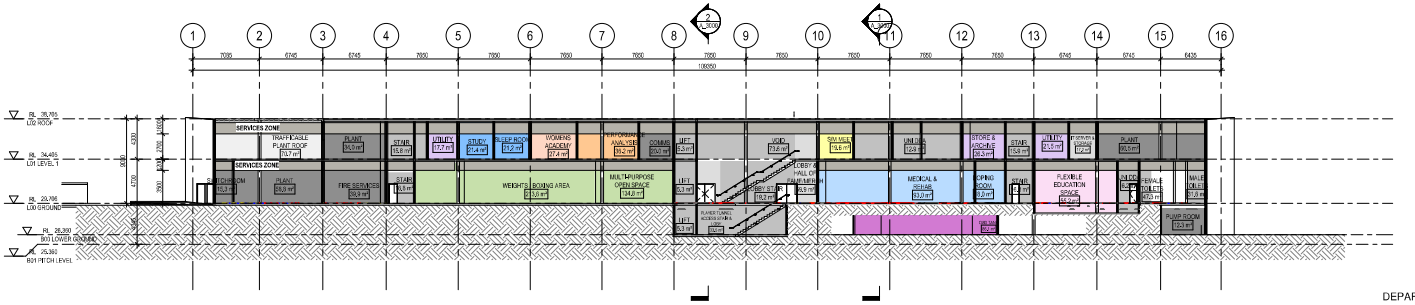

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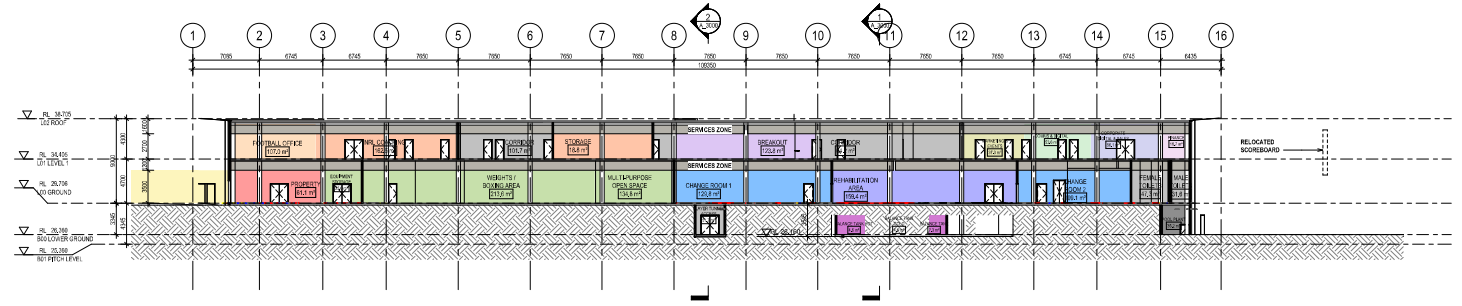
A_3401 1 : 200



2 LONG SECTION 02
A_3401 1 : 200

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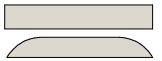
REFERENCE MAP



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GA LONG SECTION - SHEET 1

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PROJECT NUMBER	DRAWING NUMBER	REV
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Lotsearch Environmental Risk and Planning Report

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 23 Aug 2019 17:30:47

Reference: LS008085 EP

Address: Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Disclaimer:
The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features.
You should obtain independent advice before you make any decision based on the information within the report.
The detailed terms applicable to use of this report are set out at the end of this report.

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Location Confidences

Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading “LC” or “LocConf”. These codes lookup to the following location confidences:

LC Code	Location Confidence
Premise match	Georeferenced to the site location / premise or part of site
General area or suburb match	Georeferenced with the confidence of the general/approximate area
Road match	Georeferenced to the road or rail
Road intersection	Georeferenced to the road intersection
Feature is a buffered point	Feature is a buffered point
Land adjacent to geocoded site	Land adjacent to Georeferenced Site
Network of features	Georeferenced to a network of features

Dataset Listing

Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Finance, Services & Innovation	23/08/2019	23/08/2019	Daily	-	-	-	-
Topographic Data	NSW Department of Finance, Services & Innovation	11/04/2019	10/04/2019	As required	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	12/08/2019	01/08/2019	Monthly	1000	0	1	7
Contaminated Land Records of Notice	Environment Protection Authority	12/08/2019	12/08/2019	Monthly	1000	0	0	0
Former Gasworks	Environment Protection Authority	02/08/2019	11/10/2017	Monthly	1000	0	0	0
National Waste Management Facilities Database	Geoscience Australia	06/08/2019	07/03/2017	Quarterly	1000	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority	02/08/2019	02/08/2019	Monthly	2000	0	0	0
Defence PFAS Investigation & Management Program	Department of Defence	02/08/2019	02/08/2019	Monthly	2000	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	02/08/2019	02/08/2019	Monthly	2000	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	02/08/2019	02/08/2019	Monthly	2000	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	13/12/2018	13/12/2018	Annually	1000	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	26/07/2019	26/07/2019	Monthly	1000	0	0	3
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	26/07/2019	26/07/2019	Monthly	1000	0	0	7
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	26/07/2019	26/07/2019	Monthly	1000	0	0	5
UPSS Environmentally Sensitive Zones	Environment Protection Authority	14/04/2015	12/01/2010	As required	1000	1	1	1
UBD Business to Business Directory 1991 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	66	88
UBD Business to Business Directory 1991 (Road & Area Matches)	Hardie Grant			Not required	150	-	2	2
UBD Business to Business Directory 1986 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	90	151
UBD Business to Business Directory 1986 (Road & Area Matches)	Hardie Grant			Not required	150	-	15	15
UBD Business Directory 1982 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	99	140
UBD Business Directory 1982 (Road & Area Matches)	Hardie Grant			Not required	150	-	11	11
UBD Business Directory 1978 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	92	143
UBD Business Directory 1978 (Road & Area Matches)	Hardie Grant			Not required	150	-	43	43
UBD Business Directory 1975 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	95	158
UBD Business Directory 1975 (Road & Area Matches)	Hardie Grant			Not required	150	-	57	57
UBD Business Directory 1970 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	78	139
UBD Business Directory 1970 (Road & Area Matches)	Hardie Grant			Not required	150	-	34	34
UBD Business Directory 1965 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	70	136
UBD Business Directory 1965 (Road & Area Matches)	Hardie Grant			Not required	150	-	43	43
UBD Business Directory 1961 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	68	115

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
UBD Business Directory 1961 (Road & Area Matches)	Hardie Grant			Not required	150	-	32	32
UBD Business Directory 1950 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1950 (Road & Area Matches)	Hardie Grant			Not required	150	-	80	80
UBD Business Directory Drycleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500	0	37	488
UBD Business Directory Drycleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500	-	74	100
Points of Interest	NSW Department of Finance, Services & Innovation	11/04/2019	10/04/2019	Quarterly	1000	1	4	40
Tanks (Areas)	NSW Department of Finance, Services & Innovation	11/04/2019	11/04/2019	Quarterly	1000	0	0	0
Tanks (Points)	NSW Department of Finance, Services & Innovation	11/04/2019	10/04/2019	Quarterly	1000	0	0	0
Major Easements	NSW Department of Finance, Services & Innovation	11/04/2019	11/04/2019	Quarterly	1000	0	1	25
State Forest	NSW Department of Finance, Services & Innovation	18/01/2018	18/01/2018	As required	1000	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	16/01/2019	14/11/2018	Annually	1000	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1000	1	1	1
Botany Groundwater Management Zones	NSW Department of Primary Industries	15/03/2018	01/10/2005	As required	1000	0	0	0
Groundwater Boreholes	NSW Dept. of Primary Industries - Water NSW; Commonwealth of Australia (Bureau of Meteorology)	24/07/2018	23/07/2018	Annually	2000	1	1	35
Geological Units 1:100,000	NSW Dept. of Industry, Resources & Energy	20/08/2014		None planned	1000	1	-	4
Geological Structures 1:100,000	NSW Dept. of Industry, Resources & Energy	20/08/2014		None planned	1000	0	-	8
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000	0	0	0
Soil Landscapes	NSW Office of Environment & Heritage	12/08/2014		None planned	1000	2	-	7
Atlas of Australian Soils	ABARES	19/05/2017	17/02/2011	As required	1000	1	1	2
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning and Environment	16/08/2019	09/08/2019	Weekly	500	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000	1	1	2
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000	0	0	0
Dryland Salinity Potential of Western Sydney	NSW Office of Environment & Heritage	12/05/2017	01/01/2002	None planned	1000	-	-	-
Mining Subsidence Districts	NSW Department of Finance, Services & Innovation	11/04/2019	11/04/2019	Quarterly	1000	0	0	0
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning and Environment	16/08/2019	07/12/2018	Weekly	1000	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning and Environment	16/08/2019	09/08/2019	Weekly	1000	1	11	58
Commonwealth Heritage List	Australian Government Department of the Environment and Energy - Heritage Branch	16/01/2019	31/07/2018	Unknown	1000	0	0	0
National Heritage List	Australian Government Department of the Environment and Energy - Heritage Branch	16/01/2019	28/09/2018	Unknown	1000	0	0	0
State Heritage Register - Curtilages	NSW Office of Environment & Heritage	15/07/2019	09/11/2018	Quarterly	1000	0	0	0
Environmental Planning Instrument Heritage	NSW Department of Planning and Environment	16/08/2019	09/08/2019	Weekly	1000	1	2	14
Bush Fire Prone Land	NSW Rural Fire Service	28/05/2019	05/04/2019	Quarterly	1000	0	0	3

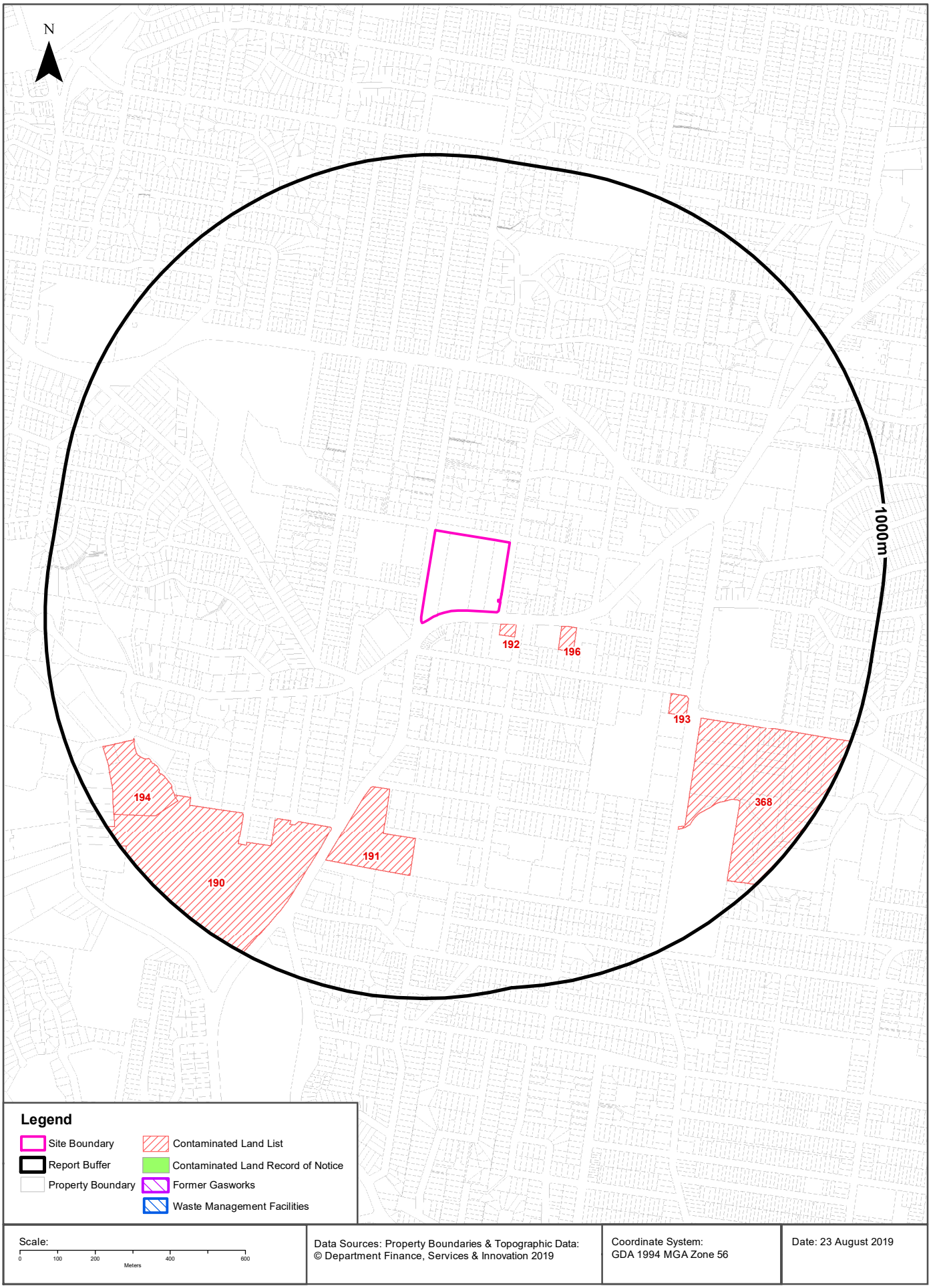
Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Native Vegetation of the Sydney Metropolitan Area	NSW Office of Environment & Heritage	01/03/2017	16/12/2016	As required	1000	1	1	11
Ramsar Wetlands of Australia	Commonwealth of Australia Department of the Environment	08/10/2014	24/06/2011	As required	1000	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	0	0	0
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	0	0	0
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	23/08/2019	23/08/2019	Weekly	10000	-	-	-

Aerial Imagery 2018

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Contaminated Land & Waste Management Facilities

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Contaminated Land & Waste Management Facilities

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

List of NSW contaminated sites notified to EPA

Records from the NSW EPA Contaminated Land list within the dataset buffer:

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist (m)	Direction
192	Caltex Service Station Brookvale	740-742 Pittwater Road	Brookvale	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	31m	South East
196	Woolworths Petrol Brookvale	756 Pittwater Road	Brookvale	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	172m	South East
191	Brookvale Bus Depot	630-636 Pittwater Road	Brookvale	Other Petroleum	Regulation under CLM Act not required	Current EPA List	Premise Match	450m	South
193	Coles Express Service Station Brookvale	198 Harbord ROAD	Brookvale	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	509m	South East
190	Warringah Mall	Cnr Condamine Street, Old Pittwater Rd & Cross Street	Brookvale	Other Industry	Regulation under CLM Act not required	Current EPA List	Premise Match	595m	South West
368	John Fisher Park	Corner Harbord and Abbott Roads	Curl Curl	Landfill	Regulation under CLM Act not required	Current EPA List	Premise Match	608m	South East
194	Harrison Manufacturing	75 Old Pittwater Road	Brookvale	Other Industry	Regulation under CLM Act not required	Current EPA List	Premise Match	795m	South West

The values within the EPA site management class in the table above, are given more detailed explanations in the table below:

EPA site management class	Explanation
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 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 of Notices.
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 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).

EPA site management class	Explanation
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 of Notices.
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.
Regulation under the 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.
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.

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Contaminated Land & Waste Management Facilities

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
N/A	No records in buffer							

Contaminated Land Records of Notice Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority
Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit
http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm

Former Gasworks

Former Gasworks within the dataset buffer:

Map Id	Location	Council	Further Info	Location Confidence	Distance	Direction
N/A	No records in buffer					

Former Gasworks Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

National Waste Management Site Database

Sites on the National Waste Management Site Database within the dataset buffer:

Site Id	Owner	Name	Address	Suburb	Class	Landfill	Reprocess	Transfer	Comments	Loc Conf	Dist (m)	Direction
N/A	No records in buffer											

Waste Management Facilities Data Source: Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

PFAS Investigation Sites

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

EPA PFAS Investigation Program

Sites that are part of the EPA PFAS investigation program, within the dataset buffer:

Id	Site	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

EPA PFAS Investigation Program: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Defence PFAS Investigation & Management Program

Sites being investigated or managed by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Investigation & Management Program Data Custodian: Department of Defence, Australian Government

Airservices Australia National PFAS Management Program

Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map ID	Site Name	Impacts	Loc Conf	Dist	Dir
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Defence 3 Year Regional Contamination Investigation Program

Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
N/A	No records in buffer					

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

EPA Other Sites with Contamination Issues

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

EPA Other Sites with Contamination Issues

This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill
- Pasminco Lead Abatement Strategy Area

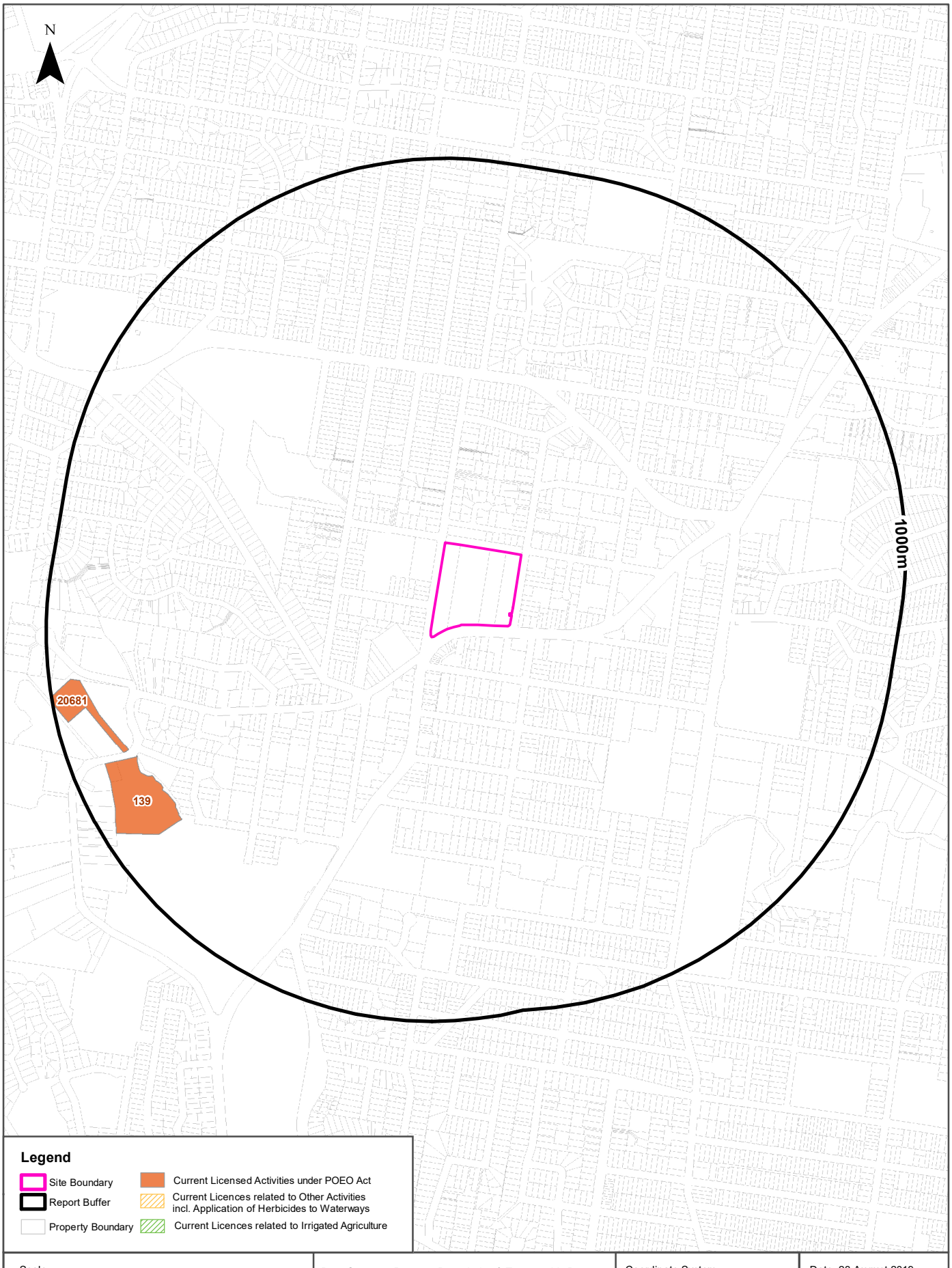
Sites within the dataset buffer:

Site Id	Site Name	Site Address	Dataset	Comments	Location Confidence	Distance	Direction
N/A	No records in buffer						

EPA Other Sites with Contamination Issues: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Current EPA Licensed Activities

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



EPA Activities

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Licensed Activities under the POEO Act 1997

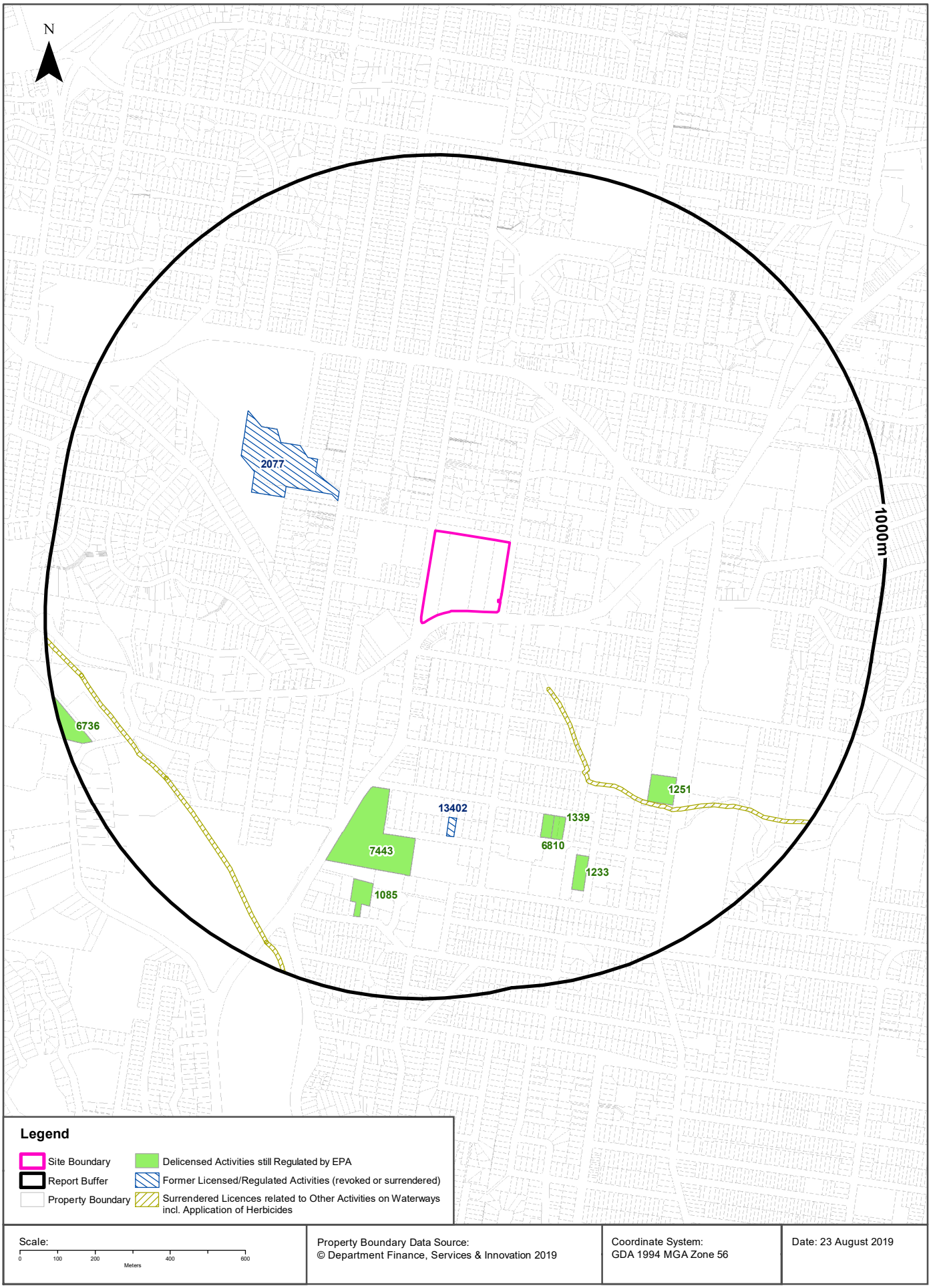
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
139	HARRISON MANUFACTURING CO PTY LIMITED	HARRISON MANUFACTURING CO PTY LTD	75 OLD PITTWATER ROAD	BROOKVALE	Petroleum products and fuel production	Premise Match	795m	South West
20681	Cozens Paper Recycling Pty Ltd		UNIT 3 100 OLD PITTWATER ROAD, BROOKVALE, NSW 2100		Resource recovery	Premise Match	840m	West
20681	Cozens Paper Recycling Pty Ltd		UNIT 3 100 OLD PITTWATER ROAD, BROOKVALE, NSW 2100		Waste storage	Premise Match	840m	West

POEO Licence Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Delicensed & Former Licensed EPA Activities

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



EPA Activities

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the dataset buffer:

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
7443	STATE TRANSIT AUTHORITY OF NSW	BROOKVALE BUS DEPOT	630-636 PITTWATER ROAD	BROOKVALE	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	450m	South
6810	HANNAH ZEV HOLDINGS PTY LIMITED	COLORMAKER INDUSTRIES AUSTRALIA	44 ORCHARD ROAD	BROOKVALE	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	549m	South
1339	HANSON CONSTRUCTION MATERIALS PTY LTD	HANSON CONSTRUCTIO N MATERIALS PTY LTD	46 ORCHARD ROAD	BROOKVALE	Concrete works	Premise Match	560m	South
1251	HYMIX AUSTRALIA PTY LIMITED	HYMIX AUSTRALIA PTY LTD	192 HARBORD ROAD	BROOKVALE	Concrete works	Premise Match	593m	South East
1233	BORAL RESOURCES (NSW) PTY LTD	BORAL CONCRETE	2-10 ADA AVE	BROOKVALE	Concrete works	Premise Match	678m	South
1085	HOLCIM (AUSTRALIA) PTY LTD	BROOKVALE CONCRETE	18 WILLIAM STREET	BROOKVALE	Concrete works	Premise Match	703m	South
6736	PHARMACEUTIC AL FILLERS PTY. LIMITED	PHARMACEUTI CAL FILLERS PTY LIMITED	5-8/106 OLD PITTWATER ROAD	BROOKVALE	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	932m	West

Delicensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

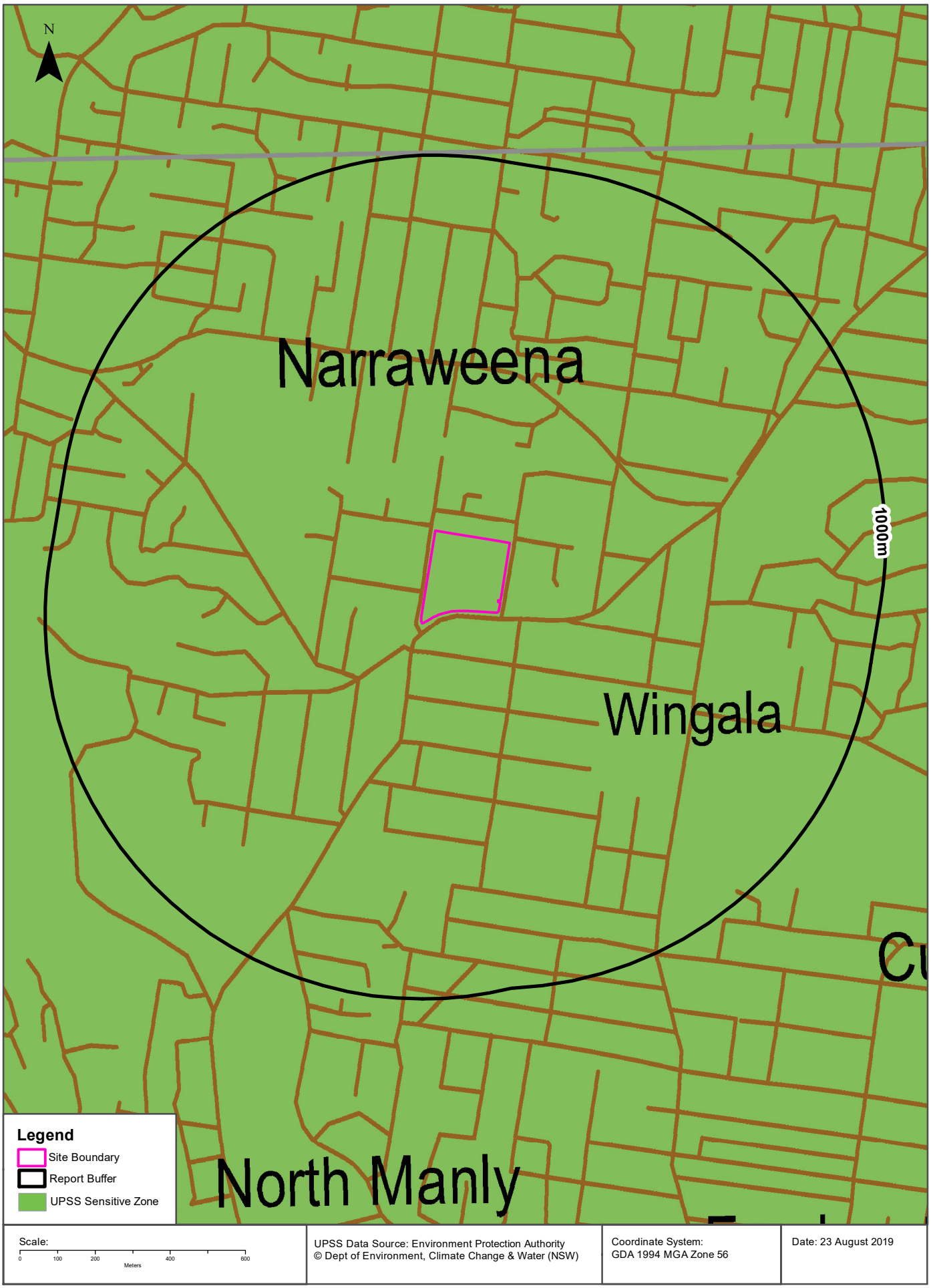
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	241m	-
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	241m	-
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	241m	-
2077	THE AUSTRAL BRICK CO PTY LTD	FEDERAL PARADE, BROOKVALE, NSW 2100	Surrendered	27/09/1999	Ceramics production	Premise Match	272m	North West
13402	URETHANE COATINGS PTY LTD	10 Powells Road, BROOKVALE, NSW 2100	Surrendered	18/05/2011	Toxic substances production	Premise Match	521m	South

Former Licensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

UPSS Sensitive Zones

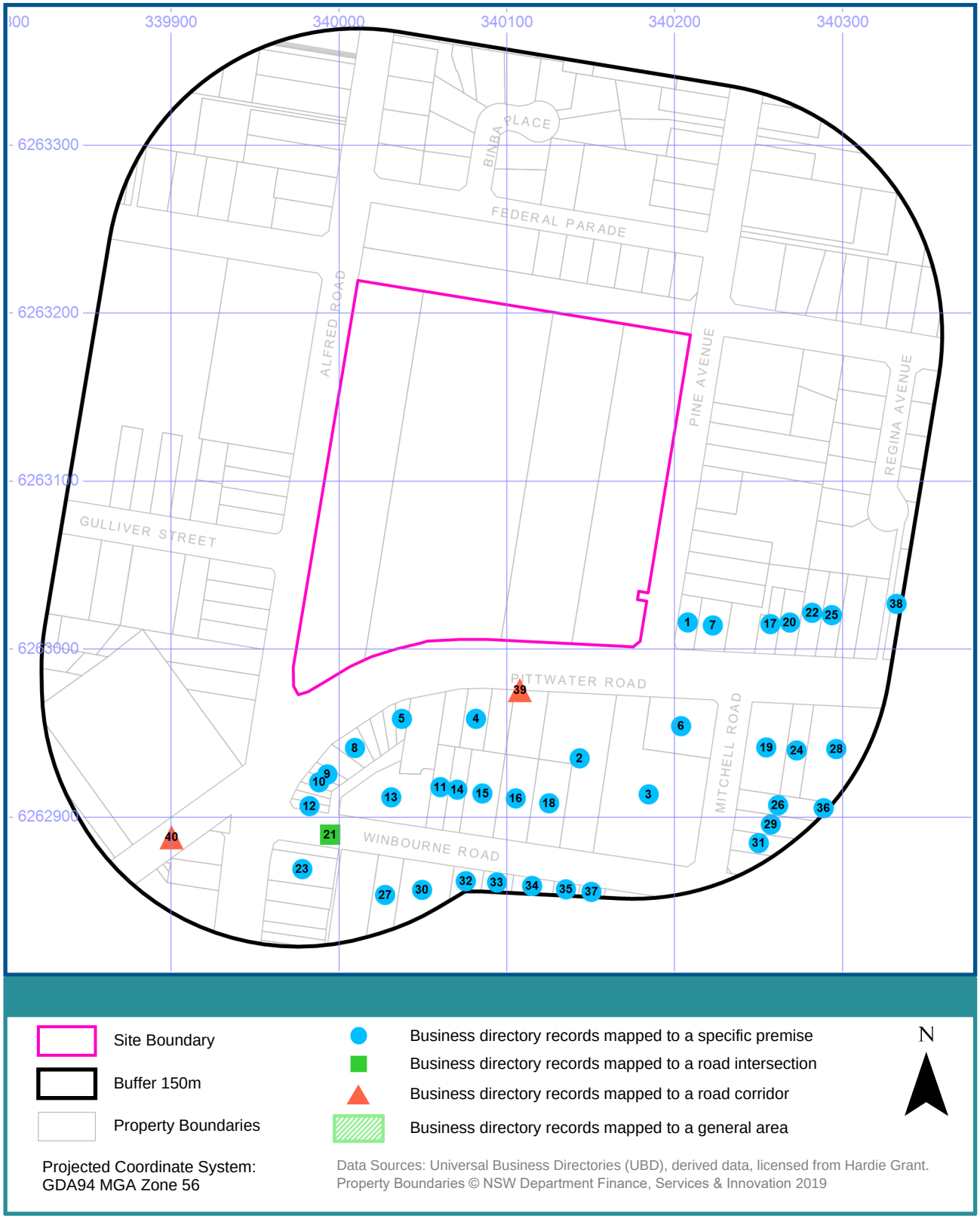
Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1991 Business to Business Directory Records



Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1991 Business to Business Directory Records
Premise or Road Intersection Matches

Records from the 1991 UBD Business to Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	Photographic Equipment Repairers.	Experts In Camera Repairs, The, 8/527 Pittwater Rd., Brookvale. 2100	96939	Premise Match	20m	South East
	Insulating Material Mfrs &/or Dists &/or Suppliers	Flick Pest Control, 527 Pittwater Rd., Brookvale. 2100	49375	Premise Match	20m	South East
	Pest Control	Flick, W.A. & Co. Pty. Ltd., 527 Pittwater Rd., Brookvale. 2100	57016	Premise Match	20m	South East
2	Motor Wreckers	Abco Motor Wreckers, 62 Winbourne Rd Brookvale 2100	55609	Premise Match	29m	South
3	Display & Exhibition Equipment &/or Supplies	Evolution Plastics Pty. Ltd., 4 Mitchell Rd., Brookvale 2100	41513	Premise Match	29m	South East
	Plastic Fabricators	Evolution Plastics Pty. Ltd., 4 Mitchell Rd., Brookvale. 2100	57857	Premise Match	29m	South East
	Printers Lithographic (Offset)	Prior Press Pty. Ltd., 2 Mitchell Rd., Brookvale. 2100	59295	Premise Match	29m	South East
4	Carpet &/or Floor Covering Planners &/or Layers	Mills & Moore, 728 Pittwater Rd., Brookvale 2100	38241	Premise Match	29m	South
5	Auctioneers Real Estate	Anderson, R.T. Real Estate Pty. Ltd., 722 Pittwater Rd., Brookvale 2100	34658	Premise Match	30m	South
	Real Estate Agents	Baynes, Ken, 722 Pittwater Rd., Brookvale 2100	97508	Premise Match	30m	South
	Invalid Aids	Manly Warringah Surgical Supplies Pty. Ltd., 718 Pittwater Rd., Brookvale. 2100	49712	Premise Match	30m	South
6	Motor Garages & Service Stations	Solo Oil Aust. Pty Ltd, 738 Pittwater Rd., Brookvale 2100	53901	Premise Match	31m	South East
7	Insurance Brokers	Brookvale Insurance Brokers Pty Ltd., 529 Pittwater Rd., Brookvale. 2100	49455	Premise Match	32m	South East
8	Motor Wheel Aligning & Balancing Services	Bob Jane T Mart, 714 Pittwater Rd Brookvale 2100	55577	Premise Match	33m	South West
9	Concrete Saws, Drills, Breakers & Blades Mfrs &/or Dists	Hardware & General Supplies Ltd., 710 Pittwater Rd., Brookvale 2100	40634	Premise Match	42m	South West
	Electric Tools Mfrs &/or Dists	Hardware & General Supplies Ltd., 710 Pittwater Rd., Brookvale 2100	42346	Premise Match	42m	South West
	Power Tools	Hardware & General Supplies Ltd., 710 Pittwater Rd., Brookvale. 2100	58554	Premise Match	42m	South West
10	Engineers Supplies	H & G Industrial Supplies, 702-704 Pittwater Road, Brookvale 2100	44933	Premise Match	46m	South West
11	Welding Equipment &/or Supplies Mfrs &/or Dists	H & G Industrial Supplies, 72 Winbourne Rd Brookvale 2100	66147	Premise Match	61m	South
	Belting Mfrs &/or Imps &/or Merchants	H & G Industrial Supplies, 72 Winbourne Rd, Brookvale 2100	35897	Premise Match	61m	South
	Bolt, Nut &/or Rivet Mfrs &/or Dists	H & G Industrial Supplies, 72 Winbourne Rd, Brookvale 2100	36355	Premise Match	61m	South
	Fastener Mfrs &/or Dists	H & G Industrial Supplies, 72 Winbourne Rd., Brookvale 2100	45298	Premise Match	61m	South
	Hydraulic Hose Mfrs &/or Dists	H & G Industrial Supplies, 72 Winbourne Rd., Brookvale. 2100	48826	Premise Match	61m	South
	Rope, Cordage &/or Twine Mfrs &/or Dists	H & G Industrial Supplies, 72 Winbourne Rd., Brookvale. 2100	61274	Premise Match	61m	South

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
11	Security Doors &/or Windows &/or Grilles	H & G Industrial Supplies, 72 Winbourne Rd., Brookvale. 2100	61863	Premise Match	61m	South
	Abrasive Merchants	H & G. Industrial Supplies, 72 Winbourne Rd., Brookvale 2100	33309	Premise Match	61m	South
	Screw Mfrs &/or W/Salers	H. & G. Industrial Supplies, 72 Winbourne Rd., Brookvale. 2100	61791	Premise Match	61m	South
	Engineers Supplies	H. & G. Industrial Supplies., 72 Winbourne Rd., Brookvale 2100	44934	Premise Match	61m	South
	Hardware Mfrs &/or Dists &/or W/salers	Hardware & General Supplies Limited., 72-74 Winbourne Rd., Brookvale. 2100	48179	Premise Match	61m	South
	Engineers Supplies	V H Tools, 72 Winbourne Rd. Brookvale 2100	44981	Premise Match	61m	South
12	Engineers Supplies	H. & G. Industrial Supplies., 702 Pittwater Rd., Brookvale 2100	44935	Premise Match	62m	South West
	Rope, Cordage &/or Twine Mfrs &/or Dists	Hardware & General Supplies Ltd, 702 Pittwater Rd Brookvale 2100	61275	Premise Match	62m	South West
	Tool Mfrs &/or Dists	Hardware & General Supplies Ltd, 702 Pittwater Rd Brookvale 2100	64495	Premise Match	62m	South West
	Builders Supplies	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale 2100	37144	Premise Match	62m	South West
	Hardware Mfrs &/or Dists &/or W/salers	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	48181	Premise Match	62m	South West
	Power Tools	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	58553	Premise Match	62m	South West
	Engineers Supplies	Hardware & General Supplies Ltd., 702-704 Pittwater Rd., Brookvale 2100	44936	Premise Match	62m	South West
	Hardware Mfrs &/or Dists &/or W/salers	Hardware & General Supplies Ltd., 702-704 Pittwater Road., Brookvale. 2100	48180	Premise Match	62m	South West
	Builders Hardware Mfrs &/or Imps &/or Dists	Hardware & General Suppllies Ltd., 702 Pittwater Rd., Brookvale 2100	37023	Premise Match	62m	South West
13	Wire Netting Mfrs &/or Dists	Hardware & General Supplies Pty Ltd, Building Supplies 74 Winbourne Rd Brookvale 2100	66400	Premise Match	62m	South
	Wire Products Mfrs &/or Dists	Hardware & General Supplies Pty Ltd, Building Supplies, 74 Winbourne Rd Brookvale 2100	66416	Premise Match	62m	South
	Plumbers Supplies	Hardware & General Supplies Pty. Ltd., Building Supplies, 74 Winbourne Rd Brookvale 2100	58275	Premise Match	62m	South
	Pipe &/or Pipe Fittings &/or Dists Plastic	Hardware & General Supplies Pty. Ltd., Building Supplies, 74 Winbourne Rd., Brookvale. 2100	57628	Premise Match	62m	South
14	Lithographic Plate Makers	K & H Lithographic Plates Pty. Ltd., 70 Winbourne Rd., Brookvale. 2100	50868	Premise Match	64m	South
15	Plumbers Supplies	Hardware & General Supplies Ltd, 68 Winbourne Rd Brookvale 2100	58274	Premise Match	65m	South
	Spa Baths &/or Hot Tubs &/or Equipment Mfrs &/or Dists &/or Installers	Hardware & General Supplies Ltd, 68 Winbourne Rd Brookvale 2100	62868	Premise Match	65m	South
	Stove &/or Range Mfrs &/or Dists Electric	Hardware & General Supplies Ltd, 68 Winbourne Rd Brookvale 2100	63632	Premise Match	65m	South
	Tile Floor &/or Wall Mfrs &/or Imps &/or Merchants	Hardware & General Supplies Ltd, 68 Winbourne Rd Brookvale 2100	64204	Premise Match	65m	South
	Bath, Basin &/or Sink Mfrs &/or Dists	Hardware & General Supplies ltd, 68 Winbourne Rd, Brookvale 2100	35666	Premise Match	65m	South
	Bathroom Equipment &/or Fittings Mfrs &/or Dists	Hardware & General Supplies ltd, 68 Winbourne Rd, Brookvale 2100	35714	Premise Match	65m	South
	Door Mfrs &/or Dists &/or Installers	Hardware & General Supplies Ltd, 68 Winbourne Rd, Brookvale 2100	41659	Premise Match	65m	South
	Hot Water Systems &/or Fittings Mfrs &/or Dists	Hardware & General Supplies Ltd, 68 Winbourne Rd., Brookvale. 2100	48652	Premise Match	65m	South
16	Motor Brake Lining Mfrs &/or Dists	Better Brakes Holdings Pty. Ltd., 66 Winbourne Rd., Brookvale. 2100	52184	Premise Match	68m	South
17	Computer Sales &/or Services	Micropoint Pty. Ltd., 533 Pittwater Rd., Brookvale 2100	40227	Premise Match	68m	South East
18	Electrical Supplies &/or Appliances Mfrs &/or W/salers	Hardware & General, 64 Winbourne Rd., Brookvale 2100	42696	Premise Match	70m	South

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
19	Motor Engineers	Brookvale Hi-Performance Centre, 3/744 Pittwater Rd, Brookvale 2100	53038	Premise Match	76m	South East
20	Hotel &/or Motel Equipment &/or Supplies	Silex Grills Aust., 535 Pittwater Rd., Brookvale. 2100	48708	Premise Match	80m	South East
21	Tap Mfrs &/or Dists	Tap Shop, The, 89 Winbourne Rd, Brookvale 2100	63865	Road Intersection	85m	South West
22	Plastic Goods Mfrs &/or Imps &/or Dists	Cadillac Plastics (Australia) Pty. Ltd., 537 Pittwater Rd., Brookvale. 2100	57912	Premise Match	92m	East
	Engineers Electrical	Harris Engineering Projects Pty Ltd, 537 Pittwater Rd Brookvale 2100	43621	Premise Match	92m	East
23	Auctioneers Real Estate	Caputo Real Estate, 696 Pittwater Rd., Brookvale 2100	34676	Premise Match	93m	South West
	Real Estate Agents	Caputo Real Estate, 696 Pittwater Rd., Brookvale. 2100	97451	Premise Match	93m	South West
24	Public Relations Consultants	Bacon & Bacon Public Relations & Publishing, Unit 3 \748 Pittwater Rd., Brookvale. 2100	59764	Premise Match	99m	South East
	Information Services	Commerce Management Services, Unit 3/748 Pittwater Rd., Brookvale. 2100	49075	Premise Match	99m	South East
	Photo Copying Services	Julies Copy Co., Unit 1/748 Pittwater Rd., Brookvale. 2100	57164	Premise Match	99m	South East
	Engineers Consulting	Lawrie Associates, Unit 2/748 Pittwater Rd., Brookvale 2100	43482	Premise Match	99m	South East
25	Computer Sales &/or Services	Computermax Pty Ltd, 539 Pittwater Rd., Brookvale 2100	40189	Premise Match	104m	East
	Duplicating Machine & Supplies Mfrs &/or Imps &/or Dealers	Norwood Business Machines, 539 Pittwater Rd., Brookvale 2100	41748	Premise Match	104m	East
26	Builders Supplies	Buildex Trading Co., 1 Mitchell Rd., Brookvale 2100	37086	Premise Match	106m	South East
	Photo Engravers Equipment &/or Supplies	Focal Point Graphics Pty. Ltd., 3/1 Mitchell Rd., Brookvale. 2100	57203	Premise Match	106m	South East
	Builders &/or Building Contractors	Mancer. F. J. Building Co. Pty. Ltd., 1 Mitchell Rd., Brookvale 2100	36876	Premise Match	106m	South East
	Printers Lithographic (Offset)	Printing Team., 1 Mitchell Rd., Brookvale. 2100	59292	Premise Match	106m	South East
27	Builders Supplies	Hardware & General Supplies., 85 Winbourne Rd., Brookvale 2100	37145	Premise Match	106m	South
28	Electric Cable Flexible &/or Wire Mfrs &/or Dists	Bambach, A. F. Pty. Ltd, 752 Pittwater Rd., Brookvale 2100	41929	Premise Match	110m	South East
29	Motor Panel Beaters &/or Spray Painters	Muirs John Smash Repairs, 3 Mitchell Rd Brookvale 2100	54606	Premise Match	115m	South East
30	Tyre Dealers &/or Retreaders &/or Vulcanisers	Owen Tyres, 83 Winbourne Rd Brookvale 2100	65323	Premise Match	115m	South
31	Motor Garages & Service Stations	Maunder & Saville Mechanical Repairs Pty. Ltd., 5 Mitchell Rd., Brookvale 2100	96185	Premise Match	124m	South East
	Motor Panel Beaters &/or Spray Painters	Smash Repair Specialists, 54 Winbourne Rd Brookvale 2100	54802	Premise Match	124m	South East
	Motor Clutch Specialists	Warringbah Clutch Service, 5 Mitchell Rd, Brookvale 2100	52893	Premise Match	124m	South East
32	Motor Wreckers	Asian Wreckers 79 Winbourne Rd. Brookvale. 2100	55630	Premise Match	134m	South
33	Slate Merchants	Exclusive Slate Products, 77 Winbourne Rd Brookvale 2100	62750	Premise Match	138m	South
34	Motor Panel Beaters &/or Spray Painters	Nailard Tom Automotive, 75 Winbourne Rd Brookvale 2100	54614	Premise Match	139m	South
	Air Conditioning Automotive	Warringah Auto Air Installations, 75 Winbourne Rd., Brookvale 2100	34183	Premise Match	139m	South
	Motor Radiator Specialists &/or Repairers	Warringah Auto Radiator Repairs, 75 Winbourne Rd., Brookvale 2100	55001	Premise Match	139m	South
35	Slate Merchants	Slate People Pty Ltd, The, 73, Winbourne Rd Brookvale 2100	62755	Premise Match	142m	South
36	Motor Panel Beaters &/or Painters Supplies	Crash Supplies Pty Ltd, 52 Winbourne Rd., Brookvale 2100	54072	Premise Match	143m	South East
37	Motor Engineers	Mason James Motors, 71 Winbourne Rd, Brookvale 2100	53304	Premise Match	143m	South

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
38	Door Mfrs &/or Dists &/or Installers	Cemac Home Carpenter Centres, 545 Pittwater Rd., Brookvale 2100	41637	Premise Match	144m	East

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1991 Business to Business Directory Records Road or Area Matches

Records from the 1991 UBD Business to Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

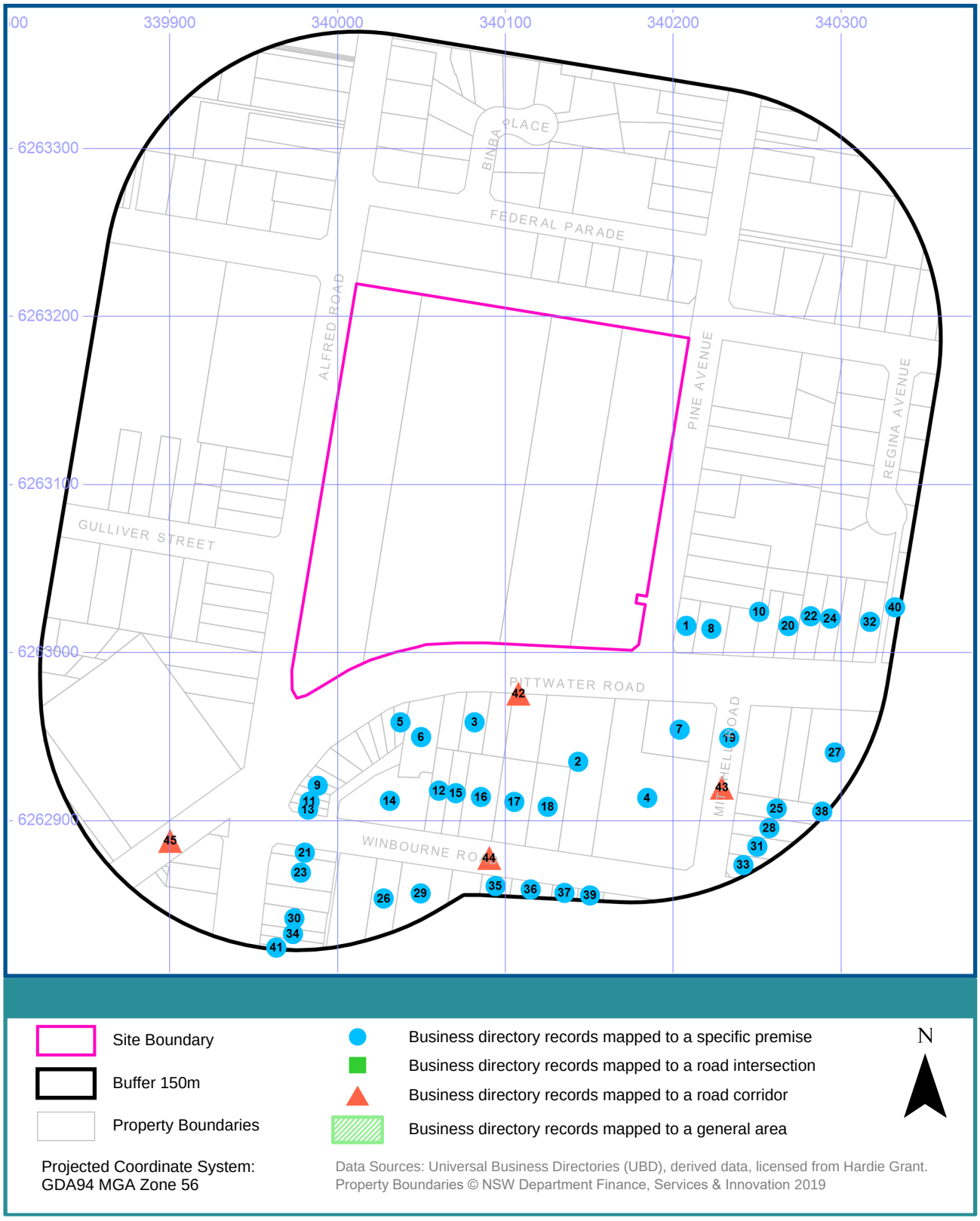
Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
39	Motor Car Dealers New &/or Used	Mason, J. Motors Pty. Ltd., 786 Pittwater Rd., Brookvale. 2100	52538	Road Match	0m
40	Baby Carriage &/or Stroller Mfrs &/or Dists	Pram City, 7 Old Pittwater Rd., Brookvale 2100	35140	Road Match	75m

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1986 Business to Business Directory Records



Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1986 Business to Business Directory Records
Premise or Road Intersection Matches

Records from the 1986 UBD Business to Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	PEST CONTROL.	Flick, W. A. & Co. Pty. Ltd., 527 Pittwater Rd., Brookvale. 2100	72521	Premise Match	20m	South East
	VETERINARY SURGEONS.	Yeh, Edward & Associates, 527 Pittwater Rd. Brookvale. 2100	97430	Premise Match	20m	South East
2	MOTOR WRECKERS.	Abco Motor Wreckers, 62 Winbourne Rd., Brookvale. 2100	68677	Premise Match	29m	South
3	CARPET &/OR FLOOR COVERING PLANNERS &/OR LAYERS.	Mills & Moore, 728 Pittwater Rd., Brookvale. 2100	12461	Premise Match	29m	South
	CARPET &/OR FLOOR COVERING RETAILERS &/OR SPECIALISTS.	Mills & Moore, 728 Pittwater Rd., Brookvale. 2100	12565	Premise Match	29m	South
	CARPET &/OR FLOOR COVERING MFRS. &/OR IMPS. &/OR DISTS.	Mills & Moore, 728 Pittwater Rd., Brookvale.2100	12400	Premise Match	29m	South
4	PRINTERS - LITHOGRAPHIC.	Prior Press Pty. Ltd., 2 Mitchell Rd., Brookvale. 2100	76840	Premise Match	29m	South East
5	REAL ESTATE AGENTS	Anderson R, T. Real Estate Pty. Ltd., 722 Pittwater Rd., Brookvale. 2100	79089	Premise Match	30m	South
	AUCTIONEERS-REAL ESTATE.	Anderson, R. T. Real Estate Pty. Ltd., 722 Pittwater Rd., Brookvale. 2100	4338	Premise Match	30m	South
	PROPERTY MANAGEMENT.	Anderson, R. T. Real Estate Pty. Ltd., 722 Pittwater Rd., Brookvale. 2100	77405	Premise Match	30m	South
	REAL ESTATE AGENTS	Baynes Ken., 722 Pittwater Rd., Brookvale. 2100	79152	Premise Match	30m	South
	REFRIGERATOR DEALERS &/OR SERVICEMEN.	Fridge Wholesalers Sales & Service, '722 Pittwater Rd Brookvale.'2100	80761	Premise Match	30m	South
	MEDICAL PRACTITIONERS.	Joffe, Louis, 722 Pittwater Rd., Brookvale. 2100	55603	Premise Match	30m	South
	SURGICAL APPLIANCE MFRS. &/OR DISTS.	Manly Warringah Surgical Supplies Pty. Ltd., 718 Pittwater Rd., Brookvale. 2100	89770	Premise Match	30m	South
	SURGICAL BELT &/OR STOCKING SPECIALISTS.	Manly Warringah Surgical Supplies Pty. Ltd., 718 Pittwater Rd., Brookvale. 2100	89786	Premise Match	30m	South
	MEDICAL PRACTITIONERS.	Thomson, E., 722 Pittwater Rd., Brookvale. 2100	57958	Premise Match	30m	South
	PRINTERS - LITHOGRAPHIC.	Time Instant Printing 722 Pittwater Road, Brookvale. 2100	76454	Premise Match	30m	South
	PRINTERS - LITHOGRAPHIC.	Time Instant Printing, 722 Pittwater Rd., Brookvale. 2100	76931	Premise Match	30m	South
	ACCOUNTANTS & AUDITORS.	Tucker, Glynn R. N., 722 Pittwater Rd., Brookvale, 2100	1084	Premise Match	30m	South
6	DISPLAY FITTINGS & STANDS MFRS. &/OR DISTS. &/OR SUPPLIERS.	Cobon International (Aust.) Pty. Ltd., 724 Pittwater Rd., Brookvale. 2100	24283	Premise Match	31m	South
	HIRING SERVICES.	Cobon International (Aust.) Pty. Ltd., 724 Pittwater Rd., Brookvale. 2100	45755	Premise Match	31m	South
	SHOP &/OR OFFICE FITTINGS MFRS. &/OR DISTS.	Cobon International (Aust.) Pty. Ltd., 724 Pittwater Rd., Brookvale. 2100	86577	Premise Match	31m	South

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
6	SHOWCASE, GLASS COUNTER MFRS.	Cobon International (Aust.) Pty. Ltd., 724 Pittwater Rd., Brookvale. 2100	86606	Premise Match	31m	South
7	MOTOR GARAGES & SERVICE STATIONS.	Solo Oil Aust. Pty. Ltd., 738 Pittwater Rd., Brookvale. 2100	65469	Premise Match	31m	South East
8	FUNERAL DIRECTORS.	Gregory & Carr Funeral Directors, 529 Pittwater Rd., Brookvale. 2100	36517	Premise Match	32m	South East
	FUNERAL DIRECTORS.	Gregory & Carr Pty. Ltd., 529 Pittwater Rd., Brookvale. 2100	36518	Premise Match	32m	South East
9	LOCKSMITHS &/OR KEY CUTTERS.	Barrenjoey Locksmiths Pty. Ltd., 706 Pittwater Rd., Brookvale. 2100	51791	Premise Match	46m	South West
	MEDICAL PRACTITIONERS.	Morgantl, J., 708A Pittwater Rd., Brookvale. 2100	56578	Premise Match	46m	South West
10	BOAT, LAUNCH &/OR YACHT SALES &/OR SERVICE.	Dick Smith Electronicis Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100	6465	Premise Match	50m	South East
	BOAT, LAUNCH &/OR YACHT ACCESSORIES MFRS. &/OR DISTS,	Dick Smith Electronics Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100	6201	Premise Match	50m	South East
	ENGINEERS – ELECTRONIC.	Dick Smith Electronics Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100	29277	Premise Match	50m	South East
	MARINE EQUIPMENT MFRS. &/OR DISTS.	Dick Smith Electronics Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100	52854	Premise Match	50m	South East
	OUTBOARD MOTOR MFRS. &/OR DISTS.	Dick Smith Electronics Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100	71085	Premise Match	50m	South East
11	HARDWARE MERCHANTS RETAIL.	Brookvale Hardware & General, 704 Pittwater Rd., Brookvale. 2100	44499	Premise Match	57m	South West
12	ABRASIVE MERCHANTS.	H & G. Industrial Supplies, 72 Winbourne Rd., Brookvale. 2100	93	Premise Match	61m	South
	ENGINEERS SUPPLIES	H. & G. Industrial Supplies 72-74 Winbourne Rd., Brookvale. 2100	31340	Premise Match	61m	South
	VEE-BELT DRIVE SPECIALISTS.	H. & G. Industrial Supplies, 72 Winbourne Rd. Brookvale. 2100	97084	Premise Match	61m	South
	ENGINEERS SUPPLIES	H. & G. Industrial Supplies, 72 Winbourne Rd., Brookvale. 2100	31424	Premise Match	61m	South
	HYDRAULIC HOSE MFRS. &/OR DISTS.	H. & G. Industrial Supplies, 72 Winbourne Rd., Brookvale. 2100	47305	Premise Match	61m	South
	SCREW MFRS. &/OR W/SALERS.	H. & G. Industrial Supplies, 72 Winbourne Rd., Brookvale. 2100	85303	Premise Match	61m	South
	WELDING EQUIPMENT &/OR SUPPLIES MFRS. &/OR DISTS.	H. & G. Industrial Supplies, 72 Winbourne Rd., Brookvale. 2100	98845	Premise Match	61m	South
	HARDWARE-WHOLESALE &/OR RETAIL.	H. & G. Supplies, 72-74 Winbourne Road, Brookvale. 2100	44888	Premise Match	61m	South
	ROPE, CORDAGE &/OR TWINE MFRS. &/OR DISTS.	K.& G. Industrial Supplies, 72 Winbourne Rd., Brookvale. 2100	83746	Premise Match	61m	South
13	ENGINEERS SUPPLIES	H. & G. Industrial Supplies 702-704 Pittwater Rd., Brookvale. 2100	31339	Premise Match	62m	South West
	HARDWARE-WHOLESALE &/OR RETAIL.	H. & G. Supplies, 702 Pittwater Road, Brookvale. 2100	44887	Premise Match	62m	South West
	PAINTERS SUPPLIES &/OR REQUISITES.	Hardware & General Supplies Ltd., 702 Pittwater Rd. Brookvale. 2100	71908	Premise Match	62m	South West
	BUILDERS HARDWARE MFRS. &/OR IMPS. &/OR DISTS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	8392	Premise Match	62m	South West
	HARDWARE MERCHANTS RETAIL.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	44611	Premise Match	62m	South West
	HARDWARE MERCHANTS-WHOLESALE.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	44854	Premise Match	62m	South West
	LOCKSMITHS &/OR KEY CUTTERS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	51806	Premise Match	62m	South West
	PAINT, VARNISH, OILS &/OR COLOUR MERCHANTS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	71740	Premise Match	62m	South West

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
13	POWER TOOL - SALES' &/OR SERVICE.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	75725	Premise Match	62m	South West
	TOOL DEALERS - RETAIL.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	93841	Premise Match	62m	South West
	TOOL WHOLESALERS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	94003	Premise Match	62m	South West
	BUILDERS SUPPLIERS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale.2100	8607	Premise Match	62m	South West
14	PLASTIC PIPE &/OR FITTINGS MFRS. &/OR DISTS.	Hardware & General Supplies Pty. Ltd. 74 Winbourne Rd., Brookvale. 2100	74804	Premise Match	62m	South
	PLUMBERS SUPPLIES.	Hardware & General Supplies Pty. Ltd., 74 Winbourne Rd., Brookvale. 2100	75142	Premise Match	62m	South
	WIRE NETTING MFRS. &/OR DISTS.	Hardware & General Supplies Pty. Ltd., 74 Winbourne Rd., Brookvale. 2100	99758	Premise Match	62m	South
	WIRE PRODUCTS MFRS. &/OR DISTS.	Hardware & General Supplies Pty. Ltd., 74 Winbourne Rd., Brookvale. 2100	99782	Premise Match	62m	South
15	PRINTERS. LITHOGRAPHIC PLATEMAKERS.	K. & H. Lithographic Plates Pty. Ltd., 70 Winbourne Rd., Brookvale. 2100	77022	Premise Match	64m	South
16	BATH, BASIN &/OR SINK MFRS. &/OR DISTS.	Hardware & General Supplies Pty. Ltd., 68 Winbourne Rd., Brookvale. 2100	5456	Premise Match	65m	South
	BATHROOM EQUIPMENT MFRS. &/OR DISTS.	Hardware & General Supplies Pty. Ltd., 68 Winbourne Rd., Brookvale. 2100	5406	Premise Match	65m	South
	DOOR MFRS. &/OR DISTS. &/OR INSTALLERS.	Hardware & General Supplies Pty. Ltd., 68 Winbourne Rd., Brookvale. 2100	24655	Premise Match	65m	South
	ELECTRICAL SUPPLIES &/OR APPLIANCES-RETAIL.	Hardware & General Supplies Pty. Ltd., 68 Winbourne Rd., Brookvale. 2100	27440	Premise Match	65m	South
	HOT WATER SYSTEMS-ELECTRIC MFRS. &/OR DISTS.	Hardware & General Supplies Pty. Ltd., 68 Winbourne Rd., Brookvale. 2100	46340	Premise Match	65m	South
	RANGES - ELECTRIC.-MFRS. &/OR DISTS.	Hardware & General Supplies Pty. Ltd., 68 Winbourne Rd., Brookvale. 2100	78976	Premise Match	65m	South
	SANITARYWARE MFRS. &/OR DISTS.	Hardware & General Supplies Pty. Ltd., 68 Winbourne Rd., Brookvale. 2100	84455	Premise Match	65m	South
17	MOTOR BRAKE LINING MFRS. &/OR DISTS. &/OR SUPPLIERS.	Better Brakes Holdings Pty. Ltd., 66 Winbourne Rd., Brookvale. 2100	61453	Premise Match	68m	South
	RADIO - TWO-WAY SALES &/OR SERVICE.	Heyden-Spike Co. Pty. Ltd., 66 Winbourne Rd., Brookvale. 2100	78867	Premise Match	68m	South
18	FURNITURE MFRS.-DINING ROOM.	Nice 'N' Old, 64 Winbourne Rd., Brookvale 2100	37759	Premise Match	70m	South
	FURNITURE-CONTEMPORARY MFRS. &/OR W/SALERS.	Nice 'N' Old, 64 Winbourne Rd., Brookvale 2100	36898	Premise Match	70m	South
	FURNITURE-GENERAL-MFRS. &/OR W/SALERS.	Nice 'N' Old, 64 Winbourne Rd., Brookvale 2100	37547	Premise Match	70m	South
	FURNITURE REPRODUCTIONS.	Nice 'N' Old, 64 Winbourne Rd., Brookvale. 2100	38129	Premise Match	70m	South
	KITCHEN UNITS MFRS. &/OR DISTS. &/OR INSTALLERS.	Nice 'N' Old, 64 Winbourne Rd., Brookvale. 2100	50475	Premise Match	70m	South
	PLASTIC COATING SPECIALISTS. MATERIAL.	Peratex Plastics Pty. Ltd., Rear 64 Winbourne Rd., Brookvale. 2100	74167	Premise Match	70m	South
19	PRINTERS SILK &/OR TEXTILE	Wilprint Pty. Ltd., 32 Mitchell Rd., Brookvale. 2100	77164	Premise Match	77m	South East
20	RADIO &/OR TELEVISION SALES &/OR SERVICEMEN.	North Manly Radio, 535 Pittwater Rd., Brookvale. 2100	78785	Premise Match	80m	South East
	CLUBS SUPPLIES.	Silex Grills Aust., 535 Pittwater Rd., Brookvale. 2100	19023	Premise Match	80m	South East

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20	HOTEL &/OR MOTEL EQUIPMENT &/OR SUPPLIES.	Silex Grills Aust., 535 Pittwater Rd., Brookvale. 2100	46502	Premise Match	80m	South East
21	DELICATESSENS.	Cesare, V., 698 Pittwater Rd., Brookvale. 2100	21581	Premise Match	87m	South West
	MILK, FRUIT JUICE BARS &/OR CONFECTIONERS.	Cesare, V., 698 Pittwater Rd., Brookvale. 2100	59100	Premise Match	87m	South West
22	TELEPHONE ANSWERING SERVICES.	Brookvale Telephone Answering & Typing Centre, 537 Pittwater Rd., Brookvale. 2100	92544	Premise Match	92m	East
	ENGINEERS – ELECTRICAL.	Harris Engineering Projects (Elec.) Pty. Ltd., 537 Pittwater Rd., Brookvale. 2100	29176	Premise Match	92m	East
23	AUCTIONEERS REAL ESTATE	Caputo Real Estate, 696 Pittwater Rd., Brookvale. 2100	4367	Premise Match	93m	South West
	PROPERTY MANAGEMENT.	Caputo Real Estate, 696 Pittwater Rd., Brookvale. 2100	77470	Premise Match	93m	South West
	REAL ESTATE AGENTS.	Caputo Real Estate, 696 Pittwater Rd., Brookvale. 2100	79231	Premise Match	93m	South West
	TRAVEL AGENCIES &/OR BOOKING OFFICES.	Caputo Travel, 694 Pittwater Rd., Brookvale. 2100.	95245	Premise Match	93m	South West
	BOOKSELLERS-RETAIL.	Pittwater Stationery, 694 Pittwater Rd., Brookvale. 2100	7154	Premise Match	93m	South West
	STATIONERS - RETAIL.	Pittwater Stationery, 694 Pittwater Rd., Brookvale. 2100	88539	Premise Match	93m	South West
	TOY DEALERS - RETAIL.	Pittwater Stationery, 694 Pittwater Rd., Brookvale. 2100	94491	Premise Match	93m	South West
24	COMPUTER SALES &/OR SERVICE.	Computermax Pty. Ltd., 539 Pittwater Rd, Brookvale. 2100	19540	Premise Match	104m	East
	COMPUTER EQUIPMENT &/OR BUREAU & TIME SHARING SERVICES.	Computermax Pty. Ltd., 539 Pittwater Rd., Brookvale. 2100	19400	Premise Match	104m	East
	CASH REGISTER REPAIRERS.	Norwood Business Machines, 539 Pittwater Rd. Brookvale.2100	13114	Premise Match	104m	East
	ADDING & CALCULATING MACHINE MFRS. &/OR IMPS. &/OR DISTS.	Norwood Business Machines, 539 Pittwater Rd., Brookvale. 2100	1302	Premise Match	104m	East
	CASH REGISTER MFRS. &/OR IMPS. &/OR DEALERS.	Norwood Business Machines, 539 Pittwater Rd., Brookvale. 2100	13097	Premise Match	104m	East
	COPYING MACHINES MFRS. &/OR DISTS.	Norwood Business Machines, 539 Pittwater Rd., Brookvale. 2100	20421	Premise Match	104m	East
	OFFICE SUPPLIES &/OR EQUIPMENT - RETAIL.	Norwood Business Machines, 539 Pittwater Rd., Brookvale. 2100	70456	Premise Match	104m	East
	TYPEWRITER DEALERS &/OR REPAIRERS.	Norwood Business Machines, 539 Pittwater Rd., Brookvale. 2100	96155	Premise Match	104m	East
25	BUILDERS SUPPLIERS.	Buildex Trading Co., 1 Mitchell Rd., Brookvale. 2100	8506	Premise Match	106m	South East
	BUILDERS &/OR BUILDING CONTRACTORS.	Mancer, F. J. Building Co. Pty. Ltd., 1 Mitchell Rd., Brookvale. 2100	8193	Premise Match	106m	South East
	ENGINEERS – CIVIL	Mancer, F. J. Building Co. Pty. Ltd., 1 Mitchell Rd., Brookvale. 2100	28664	Premise Match	106m	South East
	COURIER SERVICES.	Wheels Courier, 1 Mitchell Rd., Brookvale. 2100	20660	Premise Match	106m	South East
	COURIER SERVICES.	Wheels Couriers, 1 Mitchell Rd., Brookvale. 2100	20661	Premise Match	106m	South East
26	WALLBOARD MERCHANTS.	Hardware & General Supplies Pty. Ltd. 85 Winbourne Rd. Brookvale. 2100	98053	Premise Match	106m	South
	CEMENT PORTLAND MFRS. &/OR DISTS.	Hardware & General Supplies Pty. Ltd., 85 Winbourne Rd., Brookvale 2100	13363	Premise Match	106m	South
	PLASTERERS SUPPLIES & EQUIPMENT.	Hardware & General Supplies Pty. Ltd., 85 Winbourne Rd., Brookvale. 2100	74094	Premise Match	106m	South

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26	CEMENT &/OR LIME MERCHANTS &/OR DISTS.	Hardware & General Supplies Pty. Ltd., 85 Winbourne Rd., Brookvale.2100	13338	Premise Match	106m	South
27	ELECTRIC CABLE-FLEXIBLE &/OR WIRE-MFRS. &/OR DISTS.	Bambach, A. F. Pty. Ltd., 752 Pittwater Rd., Brookvale. 2100	26020	Premise Match	110m	South East
	WIRE MFRS. &/OR DISTS.	Bambach, A. F. Pty. Ltd., 752 Pittwater Rd., Brookvale. 2100	99729	Premise Match	110m	South East
28	FENCE &/OR GATE MFRS.	Daley, T. F., 2/3 Mitchell Rd., Brookvale. 2100	32203	Premise Match	115m	South East
	WELDERS - ELECTRIC &/OR OXY.	Daley, T. F., 2/3 Mitchell Rd., Brookvale. 2100	98596	Premise Match	115m	South East
	WROUGHT IRON WORKERS.	Daley, T. F., 2/3 Mitchell Rd., Brookvale. 2100	100059	Premise Match	115m	South East
	WELDERS - ELECTRIC &/OR OXY.	T.F. DALEY, 2, 3 Mitchell Road, Brookvale. 2100	98524	Premise Match	115m	South East
29	TYRE DEALERS &/OR RETREADERS &/OR VULCANISERS.	Owen Tyres, 83 Winbourne Rd., Brookvale. 2100	96411	Premise Match	115m	South
30	HAIRDRESSERS-LADIES &/OR BEAUTY SALONS.	Brookvale Beauty Salon, 688 Pittwater Rd., Brookvale. 2100	41715	Premise Match	124m	South West
	TAKE-AWAY FOODS.	East India Restaurant, 688 Pittwater Rd., Brookvale. 2100.	90793	Premise Match	124m	South West
	BEAUTICIANS.	Jules Skin Care, 688 Pittwater Rd., Brookvale. 2100	5757	Premise Match	124m	South West
	BALLET & DANCE REQUISITES.	North Shore Ballet Centre, 688 Pittwater Rd., Brookvale.2100	5255	Premise Match	124m	South West
	CHEMISTS-PHARMACEUTICAL.	Re, J, 688 Pittwater Rd., Brookvale. 2100	14744	Premise Match	124m	South West
31	MOTOR GARAGES & SERVICE STATIONS.	Maunder & Saville Mechanical Repairs Pty. Ltd., 5 Mitchell Rd., Brookvale. 2100	65060	Premise Match	124m	South East
	MOTOR CLUTCH SPECIALISTS.	Warringah Clutch Service, 5 Mitchell Rd., Brookvale. 2100	62585	Premise Match	124m	South East
32	FANCY DRESS &/OR DRESS SUIT HIRERS.	Formal Hire, 543 Pittwater Rd., Brookvale. 2100	31931	Premise Match	127m	East
	HIRING SERVICES.	Manly Warringah Formal Hire, 543 Pittwater Rd., Brookvale. 2100	45850	Premise Match	127m	East
33	RADIO &/OR TELEVISION MFRS, &/OR IMPS. &/OR W/SALERS.	Hayden-Spike Co. Pty. Ltd., 56 Winbourne Rd., Brookvale. 2100	78712	Premise Match	134m	South East
	RADIO &/OR TELEVISION COMPONENT PARTS, MFRS. &/OR IMPS. &/OR DISTS.	Heyden-Spike Co Pty. Ltd., 56 Winbourne Rd., Brookvale. 2100	78696	Premise Match	134m	South East
	RADIO - TWO-WAY RADIO TELEPHONE COMMUNICATION.	Heyden-Spike Co. Pty, Ltd., 56 Winbourne Rd., Brookvale. 2100	78845	Premise Match	134m	South East
	RADIO TRANSMITTER MFRS.	Heyden-Spike Co. Pty, Ltd., 56 Winbourne Rd., Brookvale. 2100	78834	Premise Match	134m	South East
	RADIO - TWO-WAY SALES &/OR SERVICE.	Heyden-Spike Co. Pty. Ltd. 56 Winbourne Road, Brookvale. 2100	78852	Premise Match	134m	South East
	RADIO - COMMUNICATION - SYSTEMS.	Heyden-Spike Co. Pty. Ltd., 56 Winbourne Rd., Brookvale. 2100	78656	Premise Match	134m	South East
	RADIO CONTROL EQUIPMENT.	Heyden-Spike Co. Pty. Ltd., 56 Winbourne Rd., Brookvale. 2100	78663	Premise Match	134m	South East
	RADIO TELEPHONE INSTALLATION SPECIALISTS.	Heyden-Spike Co. Pty. Ltd., 56 Winbourne Rd., Brookvale. 2100	78680	Premise Match	134m	South East
34	CAFES, MILK BARS &/OR SNACK BARS.	Brookvale Food Bar, 686 Pittwater Rd., Brookvale. 2100	11209	Premise Match	136m	South West
	MILK, FRUIT JUICE BARS &/OR CONFECTIONERS.	Brookvale Food Bar, 686 Pittwater Rd., Brookvale. 2100	59085	Premise Match	136m	South West
35	SLATE MERCHANTS.	Exclusive Slate Products, 77 Winbourne Rd., Brookvale. 2100	87003	Premise Match	138m	South

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35	BOAT, LAUNCH &/OR YACHT ACCESSORIES MFRS. &/OR DISTS,	Hydrafoil Australia Pty. Ltd., Rear 77 Winbourne Rd., Brookvale. 2100	6216	Premise Match	138m	South
	MARINE EQUIPMENT MFRS. &/OR DISTS.	Hydrafoil Australia Pty. Ltd., Rear 77 Winbourne Rd., Brookvale. 2100	52876	Premise Match	138m	South
	FIBREGLASS PRODUCTS MFRS.	Hydrafoil Australia Pty. Ltd., Rear 77 Winbourne Rd., Brookvale.2100	32398	Premise Match	138m	South
36	MOTOR BODY REPAIRS &/OR CONVERTERS.	Mallard, Tom Automotive, 75 Winbourne Rd., Brookvale. 2100	61410	Premise Match	139m	South
	MOTOR PANEL BEATERS &/OR SPRAY PAINTERS.	Nadard, Tom Automotive, 75 Winbourne Rd., Brookvale. 2100	66588	Premise Match	139m	South
	MOTOR ENGINEERS.	Nallard, Tom Automotive, 73 Winbourne Rd., Brookvale. 2100	63478	Premise Match	139m	South
	MOTOR RADIATOR SPECIALISTS &/OR REPAIRERS.	Warringah Auto Radiator Repairs, 75 Winbourne Rd., Brookvale. 2100	67091	Premise Match	139m	South
	AIR CONDITIONING-AUTOMOTIVE.	Warringah Auto-Air Installations, 75 Winbourne Rd., Brookvale. 2100	2166	Premise Match	139m	South
37	SLATE MERCHANTS.	Slate People Pty. Ltd., The, 73 Winbourne Rd., Brookvale. 2100	87009	Premise Match	142m	South
38	MOTOR PANEL BEATERS &/OR PAINTERS SUPPLIES.	Crash Supplies Pty. Ltd. 52 Winbourne Road, Brookvale. 2100	66913	Premise Match	143m	South East
	MOTOR PANEL BEATERS &/OR PAINTERS SUPPLIES.	Crash Supplies Pty. Ltd., 52 Winbourne Rd., Brookvale. 2100	66941	Premise Match	143m	South East
39	MOTOR ENGINEERS.	Mason, James Motors, 71 Winbourne Rd., Brookvale. 2100	63456	Premise Match	143m	South
	MOTOR SPARE PARTS DEALERS RETAIL	Mason, James Motors, 71 Winbourne Rd., Brookvale. 2100	67390	Premise Match	143m	South
40	DOOR MFRS. &/OR DISTS. &/OR INSTALLERS.	Cemac Home Carpenter Centres, 545 Pittwater Rd., Brookvale. 2100	24625	Premise Match	144m	East
	PLYWOOD MFRS. &/OR DISTS. &/OR MERCHANTS.	Cemac Home Carpenter Centres, 545 Pittwater Rd., Brookvale. 2100	75260	Premise Match	144m	East
41	HAIRDRESSERS-LADIES &/OR BEAUTY SALONS.	Kut N Kurl Boutique, 682 Pittwater Rd., Brookvale. 2100	42593	Premise Match	148m	South West
	RESTAURANTS.	Spaghetti Seller, 680 Pittwater Rd., Brookvale. 2100	82893	Premise Match	148m	South West

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1986 Business to Business Directory Records Road or Area Matches

Records from the 1986 UBD Business to Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
42	MOTOR GARAGES & SERVICE STATIONS.	Caltex Service Station Brookvale, 46 Pittwater Rd., Brookvale. 2100	64393	Road Match	0m
43	BLIND MFRS. &/OR DISTS.-CANVAS-HOLLAND-VENETIAN.	Blindmaster Pty. Ltd., Mitchell Rd., Brookvale. 2100	6064	Road Match	60m
	CURTAIN RAILS, RODS & RINGS MFRS. &/OR DISTS.	Blindmaster Pty. Ltd., Mitchell Rd., Brookvale. 2100	20833	Road Match	60m
	MOTOR ELECTRICIANS.	Warringah Auto Electrical, 24 Mitchell Rd., Brookvale. 2100	63049	Road Match	60m

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
44	ARTISTS SUPPLIES-RETAIL.	Atos Art Supplies, Winbourne Rd., Brookvale. 2100	3931	Road Match	64m
	DRAWING OFFICE SUPPLIES.	Atos Art Supplies, Winbourne Rd., Brookvale. 2100	24938	Road Match	64m
	PHOTO COPYING SERVICES.	Atos Art Supplies, Winbourne Rd., Brookvale. 2100	72713	Road Match	64m
	PLAN PRINTERS.	Atos Art Supplies, Winbourne Rd., Brookvale. 2100	74023	Road Match	64m
45	VALUERS - REAL ESTATE.	Bombardier Real Estate, 9 Old Pittwater Rd. Brookvale. 2100	96832	Road Match	75m
	AUCTIONEERS REAL ESTATE	Bombardier Real Estate, 9 Old Pittwater Rd., Brookvale. 2100	4353	Road Match	75m
	BUILDERS &/OR BUILDING CONTRACTORS.	Bombardier Real Estate, 9 Old Pittwater Rd., Brookvale. 2100	8000	Road Match	75m
	BUSINESS AGENTS &/OR BROKERS.	Bombardier Real Estate, 9 Old Pittwater Rd., Brookvale. 2100	9309	Road Match	75m
	PROPERTY MANAGEMENT.	Bombardier Real Estate, 9 Old Pittwater Rd., Brookvale. 2100	77443	Road Match	75m
	REAL ESTATE AGENTS.	Bombardier Real Estate, 9 Old Pittwater Rd., Brookvale. 2100	79179	Road Match	75m
	PRAM &/OR STROLLER MFRS. &/OR DISTS &/OR REPAIRERS.	Pram City, 7 Old Pittwater Rd., Brookvale. 2100	75801	Road Match	75m

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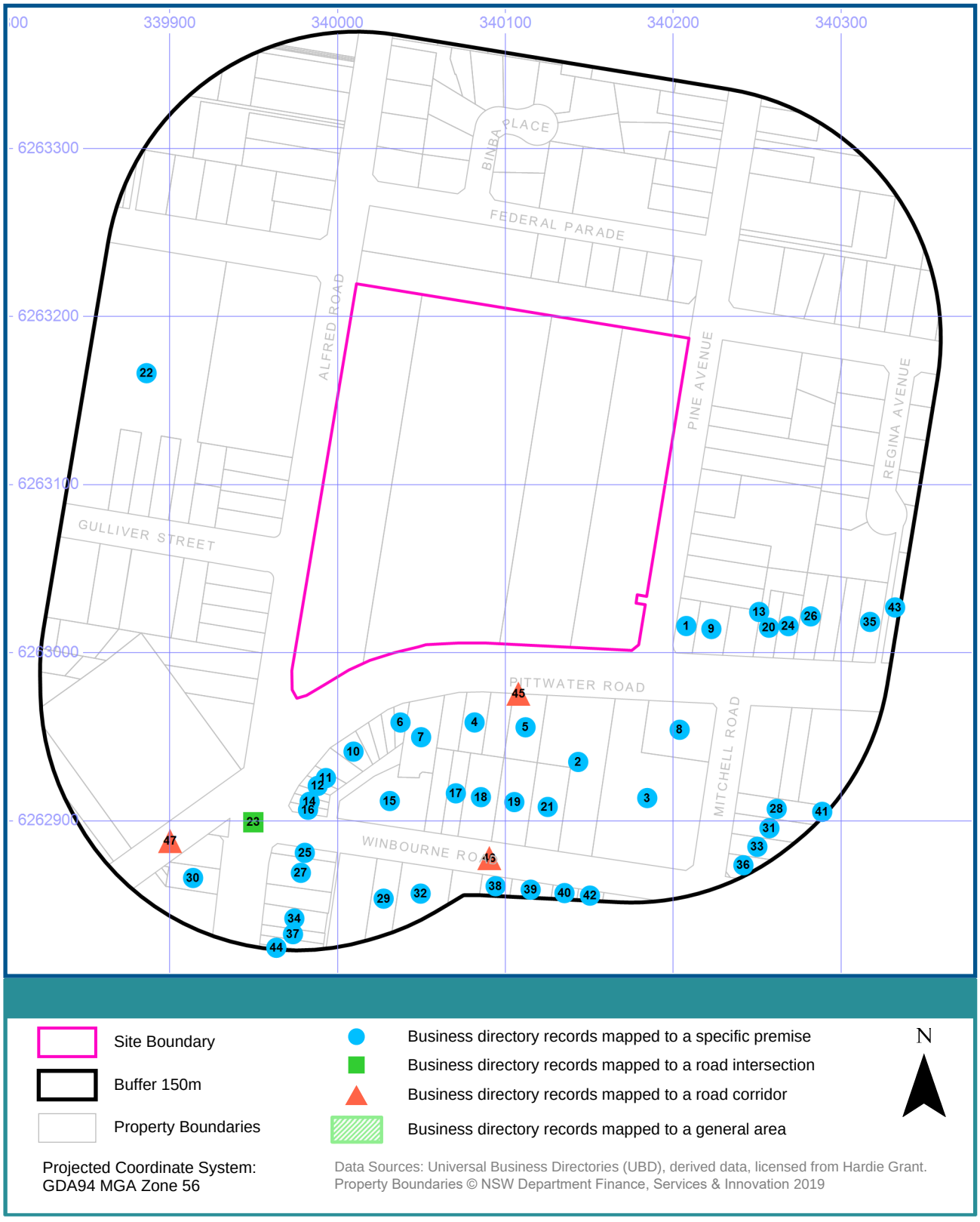
Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1982 Business Directory Records



Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1982 Business Directory Records
Premise or Road Intersection Matches

Records from the 1982 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	PEST CONTROL. (P2800)	Flick, W. A. & Co. Pty. Ltd., 527 Pittwater Rd., Brookvale. 2100.,	63279	Premise Match	20m	South East
	PEST CONTROL. (P2800)	Flick, W.A. & Co. Pty. Ltd., 527 Pittwater Rd., Brookvale. 2100.	63280	Premise Match	20m	South East
	MOTOR CAR RADIO MFRS. &/OR DISTS. (M5620)	Havede Pty. Ltd., 527 Pittwater Rd., Brookvale. 2100.	54588	Premise Match	20m	South East
2	MOTOR WRECKERS. (M8600)	Abco Motor Wreckers Pty. Ltd., 734 Pittwater Rd., Brookvale. 2100.	59975	Premise Match	29m	South
3	ELECTRIC GENERATING EQUIPMENT MFRS. &/OR IMPS.&/OR DISTS. (E1560)	Distragen Pty. Ltd., 4 Mitchell Rd., Brookvale. 2100.	24729	Premise Match	29m	South East
	SCREEN PROCESS PRINTERS.(S1650)	Kookaburra Studio, 4 Mitchell Rd., Brookvale. 2100.	73740	Premise Match	29m	South East
	SIGNWRITERS. (S3465)	Kookaburra Studio, 4 Mitchell Rd., Brookvale. 2100.	74930	Premise Match	29m	South East
	PRINTERS - LITHOGRAPHIC (OFFSET). (P8440)	Prior Press Pty. Ltd., 2 Mitchell Rd., Brookvale. 2100.	66680	Premise Match	29m	South East
4	CARPET &/OR FLOOR COVERING PLANNERS &/OR LAYERS. (C1815)	Mills & Moore, 728 Pittwater Rd., Brookvale. 2110.	13358	Premise Match	29m	South
	CARPET &/OR FLOOR COVERING RETAILERS &/OR SPECIALISTS. (C1830)	Mills & Moore, 728 Pittwater Rd., Brookvale. 2110.	13455	Premise Match	29m	South
5	DENTISTS. (D1800)	Spence, W. G., 732 Pittwater Rd., Dee Why. 2099.	20878	Premise Match	29m	South
6	REAL ESTATE AGENTS (R2555)	Anderson, R. T, Real Estate Pty. Ltd., 722 Pittwater Rd., Brookvale. 2100.	68571	Premise Match	30m	South
	PROPERTY MANAGEMENT. (P9060)	Anderson, R. T. Real Estate Pty, Ltd., 722 Pittwater Rd., Brookvale. 2100.	67135	Premise Match	30m	South
	AUCTIONEERS - REAL ESTATE.(A8430)	Anderson, R. T. Real Estate Pty. Ltd., 722 Pittwater Rd., Brookvale. 2100.	3873	Premise Match	30m	South
	REAL ESTATE AGENTS (R2555)	Baynes, K., 722 Pittwater Rd., Brookvale. 2100.	68641	Premise Match	30m	South
	SURGICAL INSTRUMENTS MFRS.&/OR SPECIALISTS. (S8025)	Manly Warringah Surgical Supplies, 718 Pittwater Rd., Brookvale 2100.	77679	Premise Match	30m	South
	MEDICAL PRACTITIONERS. (M2020)	Thomson, E., 722 Pittwater Rd., Brookvale. 2100.	50599	Premise Match	30m	South
	PRINTERS - LITHOGRAPHIC (OFFSET). (P8440)	Time Instant Printing, 722 Pittwater Rd., Brookvale. 2100.	66766	Premise Match	30m	South
7	KITCHEN UNIT MANUFACTURERS. (K0500)	Kitchen Master, 724 Pittwater Rd., Brookvale. 2100.	44208	Premise Match	31m	South

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
8	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Solo, 738 Pittwater Rd., Brookvale. 2100.	57584	Premise Match	31m	South East
9	FUNERAL DIRECTORS. (F7050)	Gregory & Carr Funeral Directors, 529 Pittwater Rd., Brookvale.2100.	34130	Premise Match	32m	South East
	FUNERAL DIRECTORS. (F7050)	Gregory & Carr Pty. Ltd., 529 Pittwater Rd., Brookvale. 2100.	34131	Premise Match	32m	South East
10	BATTERY SALES &/OR SERVICE.(B1820)	Independent Tyre Sales & Service Pty. Ltd., 714 Pittwater Rd., Brookvale. 2100	5039	Premise Match	33m	South West
	TYRE DEALERS &/ORRETREADERS &/OR VULCANISERS. (T8830)	Independent Tyre Sales & Service Pty. Ltd., 714 Pittwater Rd., Brookvale. 2100.	82662	Premise Match	33m	South West
11	ARMATURE WINDERS. (A6840)	McCahill, J. F. Electric, 710 Pittwater Rd., Brookvale. 2100.	3316	Premise Match	42m	South West
	ELECTRIC MOTOR WINDING &/OR REWINDING SPECIALISTS. (E2490)	McCahill, J. F. Electric. 710 Pittwater Rd., Brookvale. 2100.	25098	Premise Match	42m	South West
12	AWNINGS-ALUMINIUM MFRS.&/OR DISTS. (A8910)	Controlite Blind & Awning Centre, 706 Pittwater Rd., Brookvale. 2100.	4241	Premise Match	46m	South West
	BLIND MFRS. &/OR DISTS.-CANVAS - HOLLAND - VENETIAN. (B3030)	Controlite Blind & Awning Centre, 706 Pittwater Rd., Brookvale. 2100.	6961	Premise Match	46m	South West
	BLIND MFRS. &/OR DISTS.-CANVAS - HOLLAND - VENETIAN. (B3030)	Controlite, 706 Pittwater Rd., Brookvale. 2100.	6960	Premise Match	46m	South West
	MEDICAL PRACTITIONERS. (M2020)	Morganti, J., 708A Pittwater Rd., Brookvale. 2100.	49479	Premise Match	46m	South West
	LAWNMOWER REPAIRERS &/OR SHARPENERS. (L2550)	P, & R. Mower Centre, 708 Pittwater Rd., Brookvale. 2100.	44993	Premise Match	46m	South West
	LAWNMOWER SALES &/OR.SERVICE. (L2600)	P. & R. Mower Centre, 708 Pittwater Rd., Brookvale. 2100.	45046	Premise Match	46m	South West
13	BOAT, LAUNCH &/OR YACHT ACCESSORIES MFRS. &/OR DISTS. (B3560)	Smiths Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100.	7118	Premise Match	50m	South East
	BOAT, LAUNCH &/OR YACHT SALES &/OR SERVICE. (B3660)	Smiths Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100.	7371	Premise Match	50m	South East
	MARINE EQUIPMENT MFRS. &/OR DISTS. (M1120)	Smiths Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100.	46551	Premise Match	50m	South East
	OUTBOARD MOTOR MFRS. &/OR DISTS. (O4260)	Smiths Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100.	62052	Premise Match	50m	South East
14	HARDWARE MERCHANTS - RETAIL (H2050)	Brookvale Hardware & General, 704 Pittwater Rd., Brookvale. 2100.	39046	Premise Match	57m	South West
15	MOTOR WHEEL REPAIRERS &/OR SPECIALISTS. (M8540)	City Tyre & Wheel Co., 76 Winbourne Rd., Brookvale. 2100.	59941	Premise Match	62m	South
16	ABRASIVE MERCHANTS &/OR DISTS. (A0245)	H. & G. Industrial Supplies, 702 Pittwater Rd., Brookvale. 2100.	95	Premise Match	62m	South West
	ROPE, CORDAGE &/OR TWINE MFRS. &/OR DISTS, (R6860)	H. & G. Industrial Supplies, 702 Pittwater Rd., Brookvale. 2100.	72469	Premise Match	62m	South West
	SCREW MFRS. &/OR W/SALERS.(S1680)	H. & G. Industrial Supplies, 702 Pittwater Rd., Brookvale. 2100.	73822	Premise Match	62m	South West
	ENGINEERS SUPPLIES. (E8370)	H. & G. Industrial Supplies, 702 Pittwater Rd., Brookvale., 2100.	29456	Premise Match	62m	South West
	WELDING EQUIPMENT &/OR SUPPLIES MFRS. &/OR DISTS.(W3520)	H. & Q. Industrial Supplies, 702 Pittwater Rd., Brookvale. 2100.	84342	Premise Match	62m	South West

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
16	BUILDERS HARDWARE MFRS.&/OR IMPS. &/OR DISTS. (B6990)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	9562	Premise Match	62m	South West
	BUILDERS SUPPLIERS. (B7060)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	9770	Premise Match	62m	South West
	CEMENT PORTLAND MFRS. &/OR DISTS. (C3210)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	14163	Premise Match	62m	South West
	ELECTRICAL SUPPLIES &/OR APPLIANCES - RETAIL. (E3840)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	25755	Premise Match	62m	South West
	HARDWARE MERCHANTS - RETAIL (H2050)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	39130	Premise Match	62m	South West
	HARDWARE MERCHANTS - WHOLESALE. (H2100)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	39340	Premise Match	62m	South West
	HOT WATER SYSTEMS - ELECTRIC MFRS. &/OR GISTS. (H6500)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	40436	Premise Match	62m	South West
	LIME &/OR CEMENT MERCHANTS.(L4550)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	45369	Premise Match	62m	South West
	LOCKSMITHS &/OR KEY CUTTERS. (L6350)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	45555	Premise Match	62m	South West
	PAINT, VARNISH, OILS &/OR COLOUR MERCHANTS. (P0800)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	62577	Premise Match	62m	South West
	PAINTERS SUPPLIES &/OR REQUISITES. (P0960)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	62725	Premise Match	62m	South West
	PLUMBERS SUPPLIES. (P6700)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	65338	Premise Match	62m	South West
	RANGES - ELECTRIC - MFRS. &/OR IMPS. &/OR DISTS. (R1960)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	68493	Premise Match	62m	South West
	SANITARYWARE MFRS. &/OR DISTS. (S0705)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	73072	Premise Match	62m	South West
	TOOL DEALERS - RETAIL. (T5350)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	80594	Premise Match	62m	South West
	TOOL WHOLESALERS. (T5550)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	80723	Premise Match	62m	South West
	WALLBOARD MERCHANTS, (W0480)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	83621	Premise Match	62m	South West
	WIRE NETTING MFRS. &/OR DISTS. (W6520)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	85147	Premise Match	62m	South West
	WIRE PRODUCTS MFRS. &/OR DISTS. (W6600)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	85166	Premise Match	62m	South West
17	PRINTERS - LITHOGRAPHIC PLATEMAKERS. (P8460)	K. & H. Quality Lithographic Plates Pty. Ltd., 70 Winbourne Rd., Brookvale. 2100.	66820	Premise Match	64m	South
	MOTOR PANEL BEATERS &/OR SPRAY PAINTERS. (M7360)	Millar, P. W. Motor Body Repairs, 70 Winbourne Rd., Brookvale. 2100.	58531	Premise Match	64m	South
18	CABINET MAKERS. (C0030)	Nutone Joinery Pty. Ltd, 68 Winbourne Rd., Brookvale. 2100.	12046	Premise Match	65m	South
19	MOTOR BRAKE LINING MFRS.&/OR DISTS. &/OR SUPPLIERS. (M5205)	Better Brakes Holdings Pty. Ltd., 66 Winbourne Rd., Brookvale. 2100.	54346	Premise Match	68m	South
20	FIREPLACE MFRS. (F2350)	Burning Log Fireplace Specialists Pty. Ltd., 533 Pittwater Rd., Brookvale. 2100.	30819	Premise Match	68m	South East
21	ELECTRONIC EQUIPMENT MFRS.&/OR DISTS. (E4770)	Audioson International Pty. Ltd., 64 Winbourne Rd., Brookvale. 2100.	26122	Premise Match	70m	South

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21	HI-FIDELITY EQUIPMENT SALES & /OR SERVICE. (H3897)	Audioson International Pty. Ltd., 64 Winbourne Rd., Brookvale. 2100.	39931	Premise Match	70m	South
	PLASTIC COATING SPECIALISTS - MATERIAL. (P5660)	Peratex Plastics Pty. Ltd., 64 Winbourne Rd., Brookvale. 2100.	64482	Premise Match	70m	South
22	CLOTHING - COATS & COSTUMES - LADIES MFRS. &/OR W/SALERS.(C5164)	Edwards, D., 12 Gulliver St., Brookvale. 2100.	16448	Premise Match	75m	West
	CLOTHING - DRESSING GOWNS MFRS. &/OR W/SALERS. (C5165)	Edwards, D., 12 Gulliver St., Brookvale. 2100.	16467	Premise Match	75m	West
	CLOTHING - FROCKS & SUITS MFRS. &/OR W/SALERS. (C5166)	Edwards, D., 12 Gulliver St., Brookvale. 2100.	16519	Premise Match	75m	West
	CLOTHING - GENERAL MFRS.&/OR W/SALERS. (C5167)	Edwards, D., 12 Gulliver St., Brookvale. 2100.	16698	Premise Match	75m	West
	CLOTHING - SHIRT & PYJAMA MFRS. &/OR W/SALERS. (C5696)	Edwards, D., 12 Gulliver St., Brookvale. 2100.	16986	Premise Match	75m	West
	CLOTHING - SPORTSWEAR MFRS.&/OR W/SALERS. (C5701)	Edwards, D., 12 Gulliver St., Brookvale. 2100.	17061	Premise Match	75m	West
	CLOTHING - WATERPROOF MFRS,&/OR W/SALERS. (C5707)	Edwards, D., 12 Gulliver St., Brookvale. 2100.	17201	Premise Match	75m	West
23	ARTISTS SUPPLIES - RETAIL (A7530)	Atos Art Supplies, Winbourne & Pittwater Rds., Brookvale. 2100.	3494	Road Intersection	78m	South West
24	RADIO &/OR TELEVISION SALES&/OR SERVICEMEN. (R1260)	North Manly Radio, 535 Pittwater Rd., Brookvale. 2100.	68321	Premise Match	80m	South East
25	ARTISTS SUPPLIES - RETAIL (A7530)	Atos Art Supplies, 698 Pittwater Rd., Brookvale. 2100.	3495	Premise Match	87m	South West
	DRAWING OFFICE SUPPLIES.(D6750)	Atos Art Supplies, 698 Pittwater Rd., Brookvale. 2100.	22259	Premise Match	87m	South West
	PHOTO COPYING SERVICES. (P3280)	Atos Art Supplies, 698 Pittwater Rd., Brookvale. 2100.	63383	Premise Match	87m	South West
	PLAN PRINTERS. (P5200)	Atos Art Supplies, 698 Pittwater Rd., Brookvale. 2100.	64369	Premise Match	87m	South West
	DELICATESSENS, (D1250)	Gurzeni, S. P., 698 Pittwater Rd., Brookvale. 2100.	19428	Premise Match	87m	South West
	MILK, FRUIT JUICE BARS &/OR CONFECTIONERS, (M3180)	Gurzeni, S. P., 698 Pittwater Rd., Brookvale. 2100.	52220	Premise Match	87m	South West
26	ADDING & CALCULATING MACHINE MFRS. &/OR IMPS. &/OR DISTS. (A0970)	Norwood Business Machines, 537 Pittwater Rd., Brookvale. 2100.	1162	Premise Match	92m	East
	CASH REGISTER MFRS. IMPS. &/ORDEALERS. (C2520)	Norwood Business Machines, 537 Pittwater Rd., Brookvale. 2100.	13949	Premise Match	92m	East
	CASH REGISTER REPAIRERS.(C2550)	Norwood Business Machines, 537 Pittwater Rd., Brookvale. 2100.	13966	Premise Match	92m	East
	COPYING MACHINES MFRS. &/OR DISTS. (C8100)	Norwood Business Machines, 537 Pittwater Rd., Brookvale. 2100.	18119	Premise Match	92m	East
	TYPEWRITER DEALERS &/OR REPAIRERS. (T8525)	Norwood Business Machines, 537 Pittwater Rd., Brookvale. 2100.	82484	Premise Match	92m	East
	OFFICE SUPPLIES &/OR EQUIPMENT-RETAIL. (O0800)	Norwood House Business Machines, 537 Pittwater Rd., Brookvale. 2100.	61460	Premise Match	92m	East

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
27	TRAVEL AGENCIES &/OR BOOKING OFFICES. (T7425)	Brookvale Travel, 694 Pittwater Rd, Brookvale. 2100.	81782	Premise Match	93m	South West
	AUCTIONEERS - REAL ESTATE.(A8430)	Caputo Real Estate, 696 Pittwater Rd., Brookvale. 2100.	3896	Premise Match	93m	South West
	PROPERTY MANAGEMENT. (P9060	Caputo Real Estate, 696 Pittwater Rd., Brookvale. 2100.	67202	Premise Match	93m	South West
	REAL ESTATE AGENTS. (R2555)	Caputo Real Estate, 696 Pittwater Rd., Brookvale. 2100.	68726	Premise Match	93m	South West
	BOOKSELLERS - RETAIL. (B4475)	Pittwater Stationery, 694 Pittwater Rd., Brookvale. 2100.	7962	Premise Match	93m	South West
	STATIONERS - RETAIL. (S5535)	Pittwater Stationery, 694 Pittwater Rd., Brookvale. 2100.	76546	Premise Match	93m	South West
	TOY DEALERS - RETAIL. (T6200)	Pittwater Stationery, 694 Pittwater Rd., Brookvale. 2100.	81155	Premise Match	93m	South West
	BLIND MFRS. &/OR DISTS.-CANVAS - HOLLAND - VENETIAN. (B3030)	Warringah Blind Factory, 694 Pittwater Rd., Brookvale. 2100.	7015	Premise Match	93m	South West
28	BUILDERS &/OR BUILDING CONTRACTORS. (B6920)	Mancer, F. J. Building Co. Pty. Ltd., 1 Mitchell Rd., Brookvale. 2100.	9353	Premise Match	106m	South East
	ENGINEERS - CIVIL. (E6420)	Mancer, F. J. Building Co. Pty. Ltd., 1 Mitchell Rd., Brookvale. 2100.	26836	Premise Match	106m	South East
	MOTOR ELECTRICIANS, (M6580)	Warringah Auto Electrical, 1 Mitchell Rd., Brookvale. 2100.	55618	Premise Match	106m	South East
29	BOAT, LAUNCH &/OR YACHT SALES &/OR SERVICE. (B3660)	Manta Marine Sail Boats, 85 Winbourne Rd., Brookvale. 2100.	7348	Premise Match	106m	South
	SHIP CHANDLERS. (S2760)	Manta Marine Sail Boats, 85 Winbourne Rd., Brookvale. 2100.	74520	Premise Match	106m	South
30	HEALTH CENTRES &/OR CLINICS.(H2800)	Brookvale Baby Health Centre, 519 Pittwater Rd., Brookvale. 2100.	39486	Premise Match	111m	South West
31	FENCE &/OR GATE MFRS. (F0725)	McGowan, N. R 3 Mitchell Rd., Brookvale. 2100.	30140	Premise Match	115m	South East
	ORNAMENTAL METAL WORKERS.(O4050)	McGowan, N. R., 3 Mitchell Rd., Brookvale. 2100.	62001	Premise Match	115m	South East
	WELDERS - ELECTRIC &/OR OXY.(W3160)	McGowan, N. R., 3 Mitchell Rd., Brookvale. 2100.	84189	Premise Match	115m	South East
	WROUGHT IRON WORKERS. (W9440)	McGowan, N. R., 3 Mitchell Rd., Brookvale. 2100.	85491	Premise Match	115m	South East
32	TYRE DEALERS &/ORRETREADERS &/OR VULCANISERS. (T8830)	P. A. Owen Tyre & Wheel Pty. Ltd., 83 Winbourne Rd., Brookvale. 2100.	82696	Premise Match	115m	South
33	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Cush, R. Mechanical Repairs Pty. Ltd, 5 Mitchell Rd., Brookvale. 2100.	56601	Premise Match	124m	South East
	MOTOR CLUTCH SPECIALISTS.(M6200)	Warringah Clutch Service, 5 Mitchell Rd., Brookvale. 2100.	55245	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Warringah Clutch Service, 5 Mitchell Rd., Brookvale. 2100.	57815	Premise Match	124m	South East
34	TAKE-AWAY FOODS. (T0235)	East India Restaurant, 688 Pittwater Rd., Brookvale. 2100.	78314	Premise Match	124m	South West
	REAL ESTATE AGENTS. (R2555)	Gaven, G & Co., 7/688 Pittwater Rd., Brookvale. 2100.	68969	Premise Match	124m	South West
	CHEMISTS - PHARMACEUTICAL. (C4110)	Re, J., 688 Pittwater Rd., Brookvale. 2100.	15555	Premise Match	124m	South West
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS. (B2000)	Stardust Beauty Salon, 688 Pittwater Rd., Brookvale. 2100.	6570	Premise Match	124m	South West

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35	FANCY DRESS &/OR DRESS SUITHIRERS. (F0275)	Formal Hire, 543 Pittwater Rd Brookvale. 2100.	29962	Premise Match	127m	East
	PAINT - INDUSTRIAL PROTECTIVECOATING. (P0400)	Plastevic (Australia) Pty. Ltd., 543 Pittwater Rd., Brookvale. 2149.	62458	Premise Match	127m	East
36	MOTOR PANEL BEATERS &/OR SPRAY PAINTERS. (M7360)	Automarket, The, 54 Winbourne Rd., Brookvale. 2100.	58078	Premise Match	134m	South East
	TILE - FLOOR &/OR WALL - IMPS.&/OR MFRS. &/OR DISTS. (T4065)	Florwall Tiles Pty. Ltd., 56 Winbourne Rd., Brookvale. 2100.	80118	Premise Match	134m	South East
	TILE FIXERS- FLOOR &/OR WALL(T4050)	Florwall Tiles Pty. Ltd., 56 Winbourne Rd., Brookvale. 2100.	80043	Premise Match	134m	South East
37	CAFES, TEA ROOMS &/OR COFFEELOUNGES. (C0345)	Sotiropoulos, V., 686 Pittwater Rd., Brookvale. 2100.	12378	Premise Match	136m	South West
	MILK, FRUIT JUICE BARS &/OR CONFECTIONERS, (M3180)	Sotiropoulos, V., 686 Pittwater Rd., Brookvale. 2100.	52465	Premise Match	136m	South West
38	BOAT, LAUNCH &/OR YACHT BUILDERS &/OR REPAIRERS. (B3600)	Hydrafoil Australia Pty. Ltd., 77 Winbourne Rd., Brookvale. 2100.	7188	Premise Match	138m	South
	FIBREGLASS PRODUCTS MFRS. - MOULDING, FABRICATING EXTRUSIONS. (F1325)	Hydrafoil Australia Pty. Ltd., 77 Winbourne Rd., Brookvale. 2100.	30291	Premise Match	138m	South
39	MOTOR BODY REPAIRS &/OR CONVERTERS. (M5140)	J. & C. Smash Repairs, 75 Winbourne Rd., Brookvale. 2100.	54279	Premise Match	139m	South
	MOTOR PANEL BEATERS &/OR SPRAY PAINTERS. (M7360)	J. & C. Smash Repairs, 75 Winbourne Rd., Brookvale. 2100.	58396	Premise Match	139m	South
	MOTOR ENGINEERS. (M6660)	Nailard, Tom Automotive, 75 Winbourne Rd., Brookvale. 2100.	55778	Premise Match	139m	South
	MOTOR RADIATOR SPECIALISTS&/OR REPAIRERS. (M7620)	Warringah Auto Radiator Repairs, 75 Winbourne Rd., Brookvale. 2100,	58960	Premise Match	139m	South
	AIR CONDITIONING - AUTOMOTIVE. (A3480)	Warringah Auto-Air Installations, 75 Winbourne Rd., Brookvale. 2100.	1940	Premise Match	139m	South
40	FURNITURE-GENERAL-MFRS.&/OR W/SALERS. (F7675)	C. K.D. Furniture, 73 Winbourne Rd, Brookvale. 2100.	34952	Premise Match	142m	South
41	MOTOR BODY BUILDERS SUPPLIES. (M508O)	Crash Supplies, 52 Winbourne Rd., Brookvale. 2100.	54232	Premise Match	143m	South East
42	GLUE MFRS. &/OR MERCHANTS.(G5000)	Fuller, H.B. Company (Aust) Pty. Ltd, 71 Winbourne Rd., Brookvale. 2100.	36940	Premise Match	143m	South
43	PLYWOOD MFRS. &/OR MERCHANTS &/OR DISTS. (P6780)	Cemac Pty. Ltd., 545 Pittwater Rd., Brookvale 2100.	65433	Premise Match	144m	East
	DOOR MFRS. &/OR DISTS. &/OR INSTALLERS, (D5805)	Cemac Pty. Ltd., 545 Pittwater Rd., Brookvale. 2100.	21941	Premise Match	144m	East
44	BUTCHERS - RETAIL. (B8040)	Brookvale Meat Market, 680 Pittwater Rd., Brookvale. 2100.	10576	Premise Match	148m	South West
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS. (B2000)	Golden Scissors, 682 Pittwater Rd., Brookvale. 2100,	5710	Premise Match	148m	South West
	SAIL MAKERS. (S0270)	Olympic Sails, 682 Pittwater Rd., Brookvale, 2100.	72872	Premise Match	148m	South West
	RESTAURANTS. (R5180)	Spaghetti Seller, 680 Pittwater Rd., Brookvale. 2100.	71745	Premise Match	148m	South West

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1982 Business Directory Records
Road or Area Matches

Records from the 1982 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

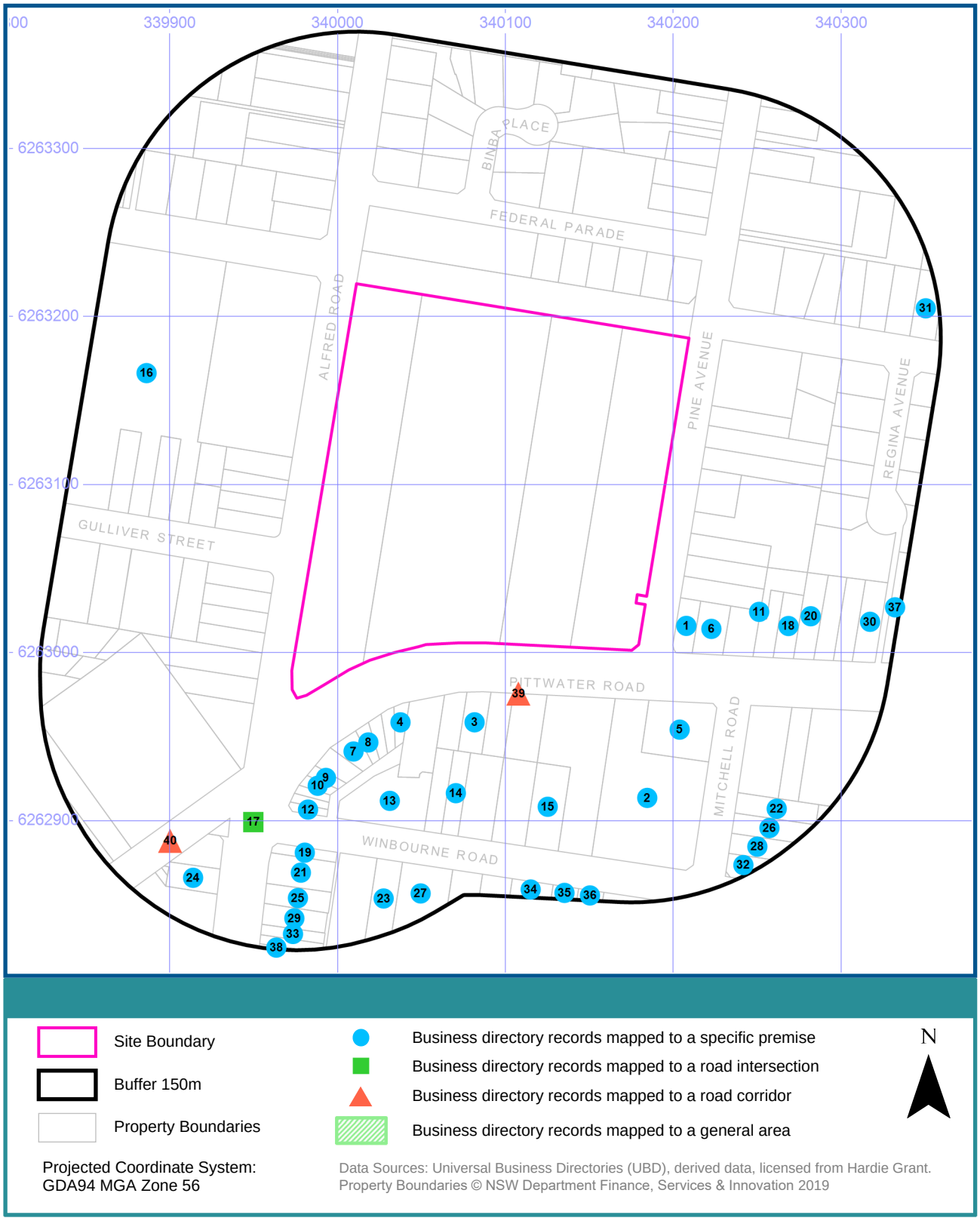
Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
45	MOTOR CAR &/OR TRUCK DEALERS - NEW &/OR USED.(M5840)	Mason, J. Motors Pty. Ltd., 786 Pittwater Rd., Brookvale. 2100.	54903	Road Match	0m
46	TYRE DEALERS &/ORRETREADERS &/OR VULCANISERS. (T8830)	Steel Cat Centre, Winbourne Rd., Brookvale. 2100.	82725	Road Match	64m
47	AUCTIONEERS - REAL ESTATE.(A8430)	Bombardier Real Estate, 9 Old Pittwater Rd., Brookvale. 2100.	3885	Road Match	75m
	BUILDERS &/OR BUILDING CONTRACTORS. (B6920)	Bombardier Real Estate, 9 Old Pittwater Rd., Brookvale. 2100.	9139	Road Match	75m
	BUSINESS AGENTS &/OR BROKERS. (B7920)	Bombardier Real Estate, 9 Old Pittwater Rd., Brookvale. 2100.	10229	Road Match	75m
	PROPERTY MANAGEMENT. (P9060)	Bombardier Real Estate, 9 Old Pittwater Rd., Brookvale. 2100.	67177	Road Match	75m
	REAL ESTATE AGENTS. (R2555)	Bombardier Real Estate, 9 Old Pittwater Rd., Brookvale. 2100.	68667	Road Match	75m
	DRESS FABRIC RETAILERS. (D7150)	Lincraft Fabrics, Shop 4, Old Pittwater Rd., Brookvale. 2100.	22371	Road Match	75m
	SEWING MACHINE SALES &/ORSERVICE. (S2280)	Lincraft Fabrics, Shop 4, Old Pittwater Rd., Brookvale. 2100.	74149	Road Match	75m
	SEWING MACHINE SALES &/ORSERVICE. (S2280)	Lincraft Fabrics, Shop 4, Old Pittwater Rd., Brookvale. 2100.	74150	Road Match	75m
	PRAM & STROLL ER MFRS. &/OR DISTS. &/OR REPAIRS. (P7850)	Pram City, Old Pittwater Rd., Brookvale. 2100.	65804	Road Match	75m

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1978 Business Directory Records



Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1978 Business Directory Records
Premise or Road Intersection Matches

Records from the 1978 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	INSURANCE BROKERS.	Lockard, D. Insurances Pty. Ltd., 527 Pittwater Rd., Brookvale. 2100	37971	Premise Match	20m	South East
2	ELECTRIC GENERATORS MFRS. &/OR IMPS. &/OR DISTS.	Distragen Pty. Ltd., 4 Mitchell Rd., Brookvale. 2100	21724	Premise Match	29m	South East
	SCREEN PROCESS PRINTERS.	Kookaburra Studio, 4 Mitchell Rd., Brookvale. 2100	65248	Premise Match	29m	South East
	SIGNWRITERS.	Kookaburra Studio, 4 Mitchell Rd., Brookvale. 2100	66350	Premise Match	29m	South East
	PRINTERS-LITHOGRAPHIC	Prior Press Pty. Ltd., 2 Mitchell Rd., Brookvale. 2100	59594	Premise Match	29m	South East
3	CARPET &/OR FLOOR COVERING PLANNERS &/OR LAYERS.	Mills & Moore. 728 Pittwater Rd., Brookvale. 2100	11504	Premise Match	29m	South
	CARPET &/OR FLOOR COVERING RETAILERS &/OR SPECIALISTS.	Mills & Moore. 728 Pittwater Rd., Brookvale. 2100	11607	Premise Match	29m	South
4	EMPLOYMENT AGENCIES.	Centacom Staff Pty. Ltd., 722 Pittwater Rd., Brookvale. 2100	23513	Premise Match	30m	South
	MEDICAL SUPPLIES.	Manly-Warringah Surgical Supplies Pty. Ltd., 718 Pittwater Rd., Brookvale. 2100	44768	Premise Match	30m	South
	REAL ESTATE AGENTS &/OR VALUERS.	Ruby Real Estate Pty. Ltd, 722 Pittwater Rd, Brookvale. 2100	62209	Premise Match	30m	South
	PROPERTY MANAGEMENT.	Ruby Real Estate Pty. Ltd., 722 Pittwater Rd., Brookvale. 2100	60351	Premise Match	30m	South
	PRINTERS-LITHOGRAPHIC	Time Instant Printing, 722 Pittwater Rd., Brookvale. 2100	59664	Premise Match	30m	South
	ACCOUNTANTS & AUDITORS.	Tucker. R.N. & Co., 722 Pittwater Rd., Brookvale. 2100	850	Premise Match	30m	South
5	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Total Service Station, 738 Pittwater Rd., Brookvale. 2100	51010	Premise Match	31m	South East
6	FUNERAL DIRECTORS.	Gregory & Carr Pty. Ltd., 529 Pittwater Rd., Brookvale. 2100	30990	Premise Match	32m	South East
7	BATTERY SALES &/OR SERVICE.	Independent Tyre Sales & Service Pty. Ltd., 714 Pittwater Rd., Brookvale. 2100	4590	Premise Match	33m	South West
	TYRE DEALERS &/OR RETREADERS &/OR VULCANISERS	Independent Tyre Sales & Service Pty. Ltd., 714 Pittwater Rd., Brookvale. 2100	72937	Premise Match	33m	South West
8	SURGICAL APPLIANCE MFRS. &/OR DISTS.	Manly Warringah Surgical Supplies Pty. Ltd., 716 Pittwater Rd., Brookvale. 2100	68769	Premise Match	33m	South West
	SURGICAL BELTS, STOCKING, SPECIALISTS.	Manly Warringah Surgical Supplies Pty. Ltd., 716 Pittwater Rd., Brookvale. 2100	68787	Premise Match	33m	South West
9	ARMATURE WINDERS.	McCahill, J. F. Electric Co., 710 Pittwater Rd., Brookvale. 2100	3161	Premise Match	42m	South West
	ELECTRIC MOTOR WINDING &/OR REWINDING SPECIALISTS.	McCahill, J. F. Electric Co., 710 Pittwater Rd., Brookvale. 2100	22066	Premise Match	42m	South West

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
10	AWNINGS-ALUMINIUM MFRS.&/OR DISTS.	Controlite Blind & Awning Centre, 706 Pittwater Rd., Brookvale. 2100	3930	Premise Match	46m	South West
	BLIND MFRS. &/OR DISTS. - CANVAS - HOLLAND - VENETIAN.	Controlite Blind & Awning Centre, 706 Pittwater Rd., Brookvale. 2100	5975	Premise Match	46m	South West
	BLIND MFRS. &/OR DISTS. - CANVAS - HOLLAND - VENETIAN.	Controlite. 706 Pittwater Rd., Brookvale. 2100	5976	Premise Match	46m	South West
	LAWNMOWER REPAIRERS &/OR SHARPENERS.	P. & R. Mower Centre, 708 Pittwater Rd., Brookvale. 2100	39918	Premise Match	46m	South West
11	BOAT, LAUNCH &/OR YACHT ACCESSORIES MFRS. &/OR DISTS.	Smiths Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100	6130	Premise Match	50m	South East
	BOAT, LAUNCH &/OR YACHT SALES &/OR SERVICE.	Smiths Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100	6391	Premise Match	50m	South East
	MARINE EQUIPMENT MFRS.&/OR DISTS.	Smiths Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100	41658	Premise Match	50m	South East
	OUTBOARD MOTOR MFRS. &/OR DISTS.	Smiths Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100	55098	Premise Match	50m	South East
12	ROPE, CORDAGE &/OR TWINE MERCHANTS.	H & G Industrial Supplies, 702 Pittwater Rd., Brookvale. 2100	64004	Premise Match	62m	South West
	SCFREW MFRS. &/OR W/SALERS	H & G industrial Supplies, 702 Pittwater Rd., Brookvale. 2100	65317	Premise Match	62m	South West
	ABRASIVE MERCHANTS &/OR DISTS.	H & G. Industrial Supplies, 702 Pittwater Rd, Brookvale. 2100	69	Premise Match	62m	South West
	ENGINEERS SUPPLIES	H. & G. Industrial Supplies 702-704 Pittwater Rd., Brookvale 2100	26496	Premise Match	62m	South West
	ENGINEERS SUPPLIES	H. &G. Industrial Supplies, 702 Pittwater Rd, Brookvale. 2100	26555	Premise Match	62m	South West
	WELDING EQUIPMENT &/OR SUPPLIES MFRS. &/OR DISTS.	H.& G. Industrial Supplies, 702 Pittwater Rd., Brookvale. 2100	74436	Premise Match	62m	South West
	BUILDERS HARDWARE MFRS. &/OR IMPS. &/OR DISTS.	Hardware & General Supplies Ltd, 702 Pittwater Rd, Brookvale. 2100	8054	Premise Match	62m	South West
	TOOL DEALERS-RETAIL.	Hardware & General Supplies Ltd, 702 Pittwater Rd, Brookvale.2100	71169	Premise Match	62m	South West
	TOOLW/SALERS.	Hardware & General Supplies Ltd, 702 Pittwater Rd, Brookvale.2100	71272	Premise Match	62m	South West
	CEMENT PORTLAND MFRS. &/OR DISTS.	Hardware & General Supplies Ltd, 702 Pittwater Rd., Brookvale. 2100	12303	Premise Match	62m	South West
	HARDWARE DEALERS &/OR IRONMONGERS.	Hardware & General Supplies Ltd. 702 Pittwater Road, Brookvale 2100	34845	Premise Match	62m	South West
	HARDWARE MERCHANTS-WHOLESALE.	Hardware & General Supplies Ltd., 702 Pittwater Rd, Brookvale. 2100	35066	Premise Match	62m	South West
	HARDWARE DEALERS &/OR IRONMONGERS.	Hardware & General Supplies Ltd., 702 Pittwater Rd. Brookvale. 2100	34912	Premise Match	62m	South West
	LOCKSMITHS &/OR KEY CUTTERS.	Hardware & General Supplies Ltd., 702 Pittwater Rd. Brookvale. 2100	40551	Premise Match	62m	South West
	BUILDERS SUPPLIERS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	8240	Premise Match	62m	South West
	ELECTRICAL SUPPLIES &/OR APPLIANCES-RETAIL.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	22789	Premise Match	62m	South West
	HOT WATER SYSTEMS-ELECTRIC MFRS. &/OR DISTS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	35837	Premise Match	62m	South West
	LIME &/OR CEMENT MERCHANTS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	40340	Premise Match	62m	South West
	PAINTERS SUPPLIES &/OR REQUISITES.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	55818	Premise Match	62m	South West
	PLUMBERS SUPPLIES.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	58334	Premise Match	62m	South West

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
12	RANGES-ELECTRIC-MFRS, &/OR IMPS. &/OR DISTS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	61249	Premise Match	62m	South West
	SANITARY FITTINGS &/OR HARDWARE MFRS. &/OR DISTS	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	64593	Premise Match	62m	South West
	WIRE NETTING MFRS. &/OR DISTS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	75019	Premise Match	62m	South West
	WIRE PRODUCTS MFRS. &/OR DISTS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	75037	Premise Match	62m	South West
	WALLBOARD MERCHANTS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale.2100	73697	Premise Match	62m	South West
	PAINT VARNISH OILS &/OR COLOUR MERCHANTS.	Hardware 8 General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100	55645	Premise Match	62m	South West
13	ENGINEERS SUPPLIES	H. & G. Industrial Supplies 74 Winbourne Rd., Brookvale 2100	26497	Premise Match	62m	South
14	PRINTERS-LITHOGRAPHIC PLATEMAKERS.	K. &H. Quality Lithographic Plates Pty. Ltd., 70 Winbourne Rd., Brookvale. 2100	59719	Premise Match	64m	South
	MOTOR PAINTERS.	Millar, P. W. Motor Body Repairs, 70 Winbourne Rd., Brookvale. 2100	51562	Premise Match	64m	South
	MOTOR PANEL BEATERS	Millar, P. W. Motor Body Repairs, 70 Winbourne Rd., Brookvale. 2100	52217	Premise Match	64m	South
15	ELECTRONIC EQUIPMENT MFRS. &/OR DISTS.	Audioson International Pty. Ltd., 64 Winbourne Rd., Brookvale. 2100	23129	Premise Match	70m	South
	HIGH-FIDELITY SALES &/OR SERVICE.	Audioson International Pty. Ltd., 64 Winbourne Rd., Brookvale. 2100	35525	Premise Match	70m	South
	PLASTIC COATING SPECIALISTS MATERIAL.	Peratex Plastics Pty. Ltd., 64 Winbourne Rd., Brookvale. 2100	57432	Premise Match	70m	South
16	CLOTHING - SPORTSWEAR MFRS. &/OR W/SALERS.	Edwards. D., 12 Gulliver St., Brookvale. 2100	15367	Premise Match	75m	West
	CLOTHING-GENERAL MFRS. &/OR W/SALERS.	Edwards. D., 12 Gulliver St., Brookvale. 2100	14921	Premise Match	75m	West
	CLOTHING COATS & COSTUMES LADIES MFRS. &/OR W/SALERS.	Edwards. O., 12 Gulliver St., Brookvale. 2100	14601	Premise Match	75m	West
	CLOTHING-SHIRT & PYJAMA MFRS. &/OR W/SALERS.	Edwards. O., 12 Gulliver St., Brookvale. 2100	15280	Premise Match	75m	West
	CLOTHING-WATERPROOF MFRS. &/OR W/SALERS.	Edwards. O., 12 Gulliver St., Brookvale. 2100	15540	Premise Match	75m	West
17	ARTISTS SUPPLIES-RETAIL.	Atos Art Supplies, Winbourne & Pittwater Rds., Brookvale. 2100	3322	Road Intersection	78m	South West
18	MARINE EQUIPMENT MFRS.&/OR DISTS.	International Transceivers Pty. Ltd., 535 Pittwater Rd., Brookvale. 2100	41637	Premise Match	80m	South East
	RADIO &/OR TELEVISION SALES &/OR SERVICEMEN.	International Transceivers Pty. Ltd., 535 Pittwater Rd., Brookvale. 2100	61098	Premise Match	80m	South East
	RADIO &/OR TELEVISION SALES &/OR SERVICEMEN.	North Manly Radio-Electric Pty. Ltd., 535 Pittwater Rd., Brookvale. 2100	61119	Premise Match	80m	South East
19	ARTISTS SUPPLIES-RETAIL.	Atos Art Supplies, 698 Pittwater Rd., Brookvale. 2100	3323	Premise Match	87m	South West
	DRAWING OFFICE SUPPLIES	Atos Art Supplies, 698 Pittwater Rd., Brookvale. 2100	19719	Premise Match	87m	South West
	PHOTO COPYING SERVICES.	Atos Art Supplies, 698 Pittwater Rd., Brookvale. 2100	56429	Premise Match	87m	South West
	PLAN PRINTERS.	Atos Art Supplies. 698 Pittwater Rd., Brookvale. 2100	57321	Premise Match	87m	South West
	DELICATESSENS.	Mauro Delicatessen, 698 Pittwater Rd., Brookvale. 2100	17565	Premise Match	87m	South West

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
19	MILK, FRUIT JUICE BARS &/OR CONFECTIONERS.	Mauro Delicatessen, 698 Pittwater Rd., Brookvale. 2100	46037	Premise Match	87m	South West
20	TYPEWRITER DEALERS &/OR REPAIRERS.	Norwood Business Machines, 537 Pittwater Rd, Brookvale. 2100	72746	Premise Match	92m	East
	ADDING & CALCULATING MACHINE MFRS. &/OR IMPS. &/OR DISTS.	Norwood Business Machines, 537 Pittwater Rd., Brookvale. 2100	1051	Premise Match	92m	East
	CASH REGISTER IMPS. &/OR DEALERS.	Norwood Business Machines, 537 Pittwater Rd., Brookvale. 2100	12085	Premise Match	92m	East
	COPYING MACHINES MFRS. &/OR DISTS.	Norwood Business Machines, 537 Pittwater Rd., Brookvale. 2100	16366	Premise Match	92m	East
	CASH REGISTER REPAIRERS.	Norwood Business Machines. 537 Pittwater Rd., Brookvale. 2100	12103	Premise Match	92m	East
21	TRAVEL AGENCIES &/OR BOOKING OFFICES.	Brookvale Travel Consultants, 696 Pittwater Rd, Brookvale. 2100	72255	Premise Match	93m	South West
	STATIONERS-RETAIL.	Burden, T. R. & S. L., 694 Pittwater Rd., Brookvale. 2100	67622	Premise Match	93m	South West
	BOOKSELLERS RETAIL.	Burden, T.R. & S.L., 694 Pittwater Rd., Brookvale. 2100	6783	Premise Match	93m	South West
	TOY DEALERS-RETAIL.	Burden, T.R. AS.L, 694 Pittwater Rd, Brookvale.2100	71582	Premise Match	93m	South West
	AUCTIONEERS-REAL ESTATE.	Caputo Real Estate, 696 Pittwater Rd, Brookvale. 2100	3684	Premise Match	93m	South West
	PROPERTY MANAGEMENT.	Caputo Real Estate, 696 Pittwater Rd., Brookvale. 2100	60081	Premise Match	93m	South West
	REAL ESTATE AGENTS &/OR VALUERS.	Caputo Real Estate, 696 Pittwater Rd., Brookvale. 2100	61469	Premise Match	93m	South West
	GROCERS-RETAIL	Goodways Food Market, 694 Pittwater Rd., Brookvale. 2100	33923	Premise Match	93m	South West
	CLOTHING - SPORTSWEAR MFRS. &/OR W/SALERS.	Janissa Wear Pty. ltd., 694 Pittwater Rd., Brookvale. 2100	15387	Premise Match	93m	South West
	BLIND MFRS. &/OR DISTS. - CANVAS - HOLLAND - VENETIAN.	Warringah Blind Factory, 694 Pittwater Rd., Brookvale. 2100	6017	Premise Match	93m	South West
22	BUILDERS &/OR BUILDING CONTRACTORS.	Mancer, F. J. Building Co. Pty. Ltd., 1 Mitchell Rd., Brookvale. 2100	7805	Premise Match	106m	South East
	ENGINEERS-CIVIL	Mancer, F. J. Building Co. Pty. Ltd., 1 Mitchell Rd., Brookvale. 2100	23871	Premise Match	106m	South East
	MOTOR ELECTRICIANS	Warringah Auto Electrical, 1 Mitchell Rd., Brookvale. 2100	49086	Premise Match	106m	South East
23	BOAT, LAUNCH &/OR YACHT SALES &/OR SERVICE.	Trade Wind Sail Boats, 85 Winbourne Rd., Brookvale. 2100	6398	Premise Match	106m	South
	SURFING EQUIPMENT MFRS.	Trade Wind Sail Boats, 85 Winbourne Rd., Brookvale. 2100	68755	Premise Match	106m	South
24	HEALTH CENTRES &/OR CLINICS.	Brookvale Baby Health Centre, 519 Pittwater Rd., Brookvale. 2100	35191	Premise Match	111m	South West
25	ACCOUNTANTS & AUDITORS.	Lewis, A.B.K. & Co., 690 Pittwater Rd., Brookvale. 2100	521	Premise Match	112m	South West
26	WROUGHT IRON WORKERS.	McGowan N. R., 3 Mitchell Rd., Brookvale 2100	75357	Premise Match	115m	South East
	FENCE &/OR GATE MFRS.	McGowan, N. R. 3 Mitchell Rd., Brookvale. 2100	27235	Premise Match	115m	South East
	ORNAMENTAL METAL WORKERS.	McGowan, N. R., 3 Mitchell Rd., Brookvale. 2100	55037	Premise Match	115m	South East
	WELDERS-ELECTRIC &/OR OXY.	McGowan, N. R., 3 Mitchell Rd., Brookvale. 2100	74273	Premise Match	115m	South East
27	TYRE DEALERS &/OR RETREADERS &/OR VULCANISERS	Owen, P. A. Pty. Ltd., 83 Winbourne Rd., Brookvale. 2100	72959	Premise Match	115m	South
	PILE DRIVING CONTRACTORS.	Vibropile (N. S. W.) Pty. Ltd., 81 Winbourne Rd., Brookvale. 2100	57145	Premise Match	115m	South

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
28	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Cush, R. Mechanical Repairs Pty. Ltd., 5 Mitchell Rd., Brookvale. 2100	49875	Premise Match	124m	South East
	MOTOR CLUTCH SPECIALISTS.	Warringah Clutch Service, 5 Mitchell Rd., Brookvale. 2100	48728	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Warringah Clutch Service, 5 Mitchell Rd., Brookvale. 2100	51056	Premise Match	124m	South East
29	RESTAURANTS.	East India Restaurant. 688 Pittwater Rd, Brookvale. 2100	62934	Premise Match	124m	South West
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS.	Evening Star Beauty Salon, 688 Pittwater Rd., Brookvale. 2100	4979	Premise Match	124m	South West
	REAL ESTATE AGENTS &/OR VALUERS.	Gaven. G. & Co., 7/688 Pittwater Rd., Brookvale. 2100	61672	Premise Match	124m	South West
	MEDICAL PRACTITIONERS.	Morgante, J., 688 Pittwater Rd., Brookvale. 2100	43740	Premise Match	124m	South West
	CHEMISTS-PHARMACEUTICAL.	Re. J., 688 Pittwater Rd., Brookvale. 2100	13731	Premise Match	124m	South West
30	PLYWOOD MFRS. &/OR MERCHANTS &/OR DISTS.	Bruynzeel Factories Aust. Pty. Ltd., 543 Pittwater Rd., Brookvale. 2100	58413	Premise Match	127m	East
31	PEST CONTROL.	G. & G. Pest Control. 24 Federal Pde., Brookvale. 2100	56370	Premise Match	131m	East
32	MOTOR ELECTRICIANS	Automarket, The, 54 Winbourne Rd., Brookvale. 2100	48964	Premise Match	134m	South East
	MOTOR PAINTERS.	Automarket, The, 54 Winbourne Rd., Brookvale. 2100	51275	Premise Match	134m	South East
	MOTOR PANEL BEATERS	Automarket, The, 54 Winbourne Rd., Brookvale. 2100	51838	Premise Match	134m	South East
	TILE FIXERS-FLOOR &/OR WALL.	Florwall Tiles Pty. Ltd, 56 Winbourne Rd, Brookvale.2100	70626	Premise Match	134m	South East
	TILE-FLOOR &/OR WALL IMPS. &/OR MFRS. &/OR DISTS.	Florwall Tiles Pty. Ltd, 56 Winbourne Rd, Brookvale.2100	70690	Premise Match	134m	South East
33	MILK, FRUIT JUICE BARS &/OR CONFECTIONERS.	Sotiropoulos, V., 686 Pittwater Rd., Brookvale. 2100	46174	Premise Match	136m	South West
	CAFES, TEA ROOMS &/OR COFFEE LOUNGES.	Sotiropoulos. V., 686 Pittwater Rd., Brookvale. 2100	10621	Premise Match	136m	South West
34	MOTOR BODY REPAIRS &/OR CONVERTERS.	J. & C. Smash Repairs, 75 Winbourne Rd., Brookvale. 2100	47827	Premise Match	139m	South
	MOTOR PAINTERS.	J. & C. Smash Repairs. 75 Winbourne Rd., Brookvale. 2100	51474	Premise Match	139m	South
	MOTOR PANEL BEATERS	J. & C. Smash Repairs. 75 Winbourne Rd., Brookvale. 2100	52109	Premise Match	139m	South
	MOTOR RADIATOR SPECIALISTS &/OR REPAIRERS.	Warringah Auto Radiator Repairs, 75 Winbourne Rd., Brookvale. 2100	52582	Premise Match	139m	South
	AIR CONDITIONING-AUTOMOTIVE.	Warringah Auto-Air Installations, 75 Winbourne Rd., Brookvale. 2100	1921	Premise Match	139m	South
35	FURNITURE MFRS. &/OR W/SALERS.	C.K.O. Pty. Ltd., 73 Winbourne Rd., Brookvale. 2100	31991	Premise Match	142m	South
	AIR COMPRESSORS &/OR EQUIPMENT FOR HIRE.	Davis, R. & Son Pty. Ltd., 73 Winbourne Rd., Brookvale. 2100	1850	Premise Match	142m	South
	EARTH MOVING CONTRACTORS	Davis, R. & Son Pty. Ltd., 73 Winbourne Rd., Brookvale. 2100	21239	Premise Match	142m	South
	EARTH MOVING MACHINERY HIRERS.	Davis, R. & Son Pty. Ltd., 73 Winbourne Rd., Brookvale. 2100	21395	Premise Match	142m	South
	ENGINEERS-DIESEL	Davis, R. & Son Pty. Ltd., 73 Winbourne Rd., Brookvale. 2100	24264	Premise Match	142m	South
	WELDERS-ELECTRIC &/OR OXY.	Davis, R. & Son Pty. Ltd., 73 Winbourne Rd., Brookvale. 2100	74174	Premise Match	142m	South

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
36	ANIMAL &/OR BIRD FOOD SUPPLIES.	Pet Imports Pty. Ltd., 71 Winbourne Rd., Brookvale. 2100	2566	Premise Match	143m	South
	AQUARIUMS & SUPPLIES.	Pet Imports Pty. Ltd., 71 Winbourne Rd., Brookvale. 2100	2819	Premise Match	143m	South
	IMPORTERS.	Pet Imports Pty. Ltd., 71 Winbourne Rd., Brookvale. 2100	37082	Premise Match	143m	South
	PACKAGING &/OR PACKING SPECIALISTS.	Tye & Ceel Pty. Ltd., 71 Winbourne Rd., Brookvale. 2100	55285	Premise Match	143m	South
37	DOOR MFRS. &/OR DISTS. &/OR INSTALLERS.	Cemac Pty. Ltd., 545 Pittwater Rd., Brookvale. 2100	19388	Premise Match	144m	East
	PLYWOOD MFRS. &/OR MERCHANTS &/OR DISTS.	Cemac Pty. Ltd., 545 Pittwater Rd., Brookvale. 2100	58418	Premise Match	144m	East
38	BEAUTY SALONS &/OR LADIES HAIRDRESSERS.	Carissa Coifure, 682 Pittwater Rd., Brookvale. 2100	4813	Premise Match	148m	South West
	BUTCHERS-RETAIL.	Drake, M.F., 680 Pittwater Rd., Brookvale. 2100	9093	Premise Match	148m	South West
	ART DEALERS - GALLERIES & MUSEUMS.	Gallery Upstairs, The, 680 Pittwater Rd., Brookvale. 2100	3192	Premise Match	148m	South West
	SAIL MAKERS.	Olympic Sails, 682 Pittwater Rd., Brookvale. 2100	64400	Premise Match	148m	South West

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1978 Business Directory Records Road or Area Matches

Records from the 1978 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
39	MOTOR CAR &/OR TRUCK DEALERS-NEW &/OR USED.	Mason. J. Motors Pty. Ltd., 786 Pittwater Rd., Brookvale. 2100	48397	Road Match	0m
	MOTOR PAINTERS SUPPLIES.	Williamson, Croft Pty. Ltd., 463 Pittwater Rd., Brookvale. 2100	51783	Road Match	0m
	MOTOR PANEL BEATERS SUPPLIES.	Williamson, Croft Pty. Ltd., 463 Pittwater Rd., Brookvale. 2100	52493	Road Match	0m
	WALLPAPER MERCHANTS.	Williamson, Croft Pty. Ltd., 463 Pittwater Rd., Brookvale.2100	73789	Road Match	0m
	PAINTERS SUPPLIES &/OR REQUISITES.	Williamson. Croft Pty. Ltd., 463 Pittwater Rd., Brookvale. 2100	55847	Road Match	0m
40	AUCTIONEERS-REAL ESTATE.	Bombardier Real Estate, 9 Old Pittwater Rd., Brookvale. 2100	3677	Road Match	75m
	BUILDERS &/OR BUILDING CONTRACTORS.	Bombardier Real Estate, 9 Old Pittwater Rd., Brookvale. 2100	7580	Road Match	75m
	PROPERTY MANAGEMENT.	Bombardier Real Estate, 9 Old Pittwater Rd., Brookvale. 2100	60066	Road Match	75m
	REAL ESTATE AGENTS &/OR VALUERS.	Bombardier Real Estate, 9 Old Pittwater Rd., Brookvale. 2100	61417	Road Match	75m
	BUSINESS AGENTS &/OR BROKERS.	Bombardier Real Estate. 9 Old Pittwater Rd., Brookvale. 2100	8604	Road Match	75m
	PHOTOGRAPHIC EQUIPMENT- MFRS.&/OR DISTS.	Camera Distributors Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	56748	Road Match	75m
	PHOTOGRAPHIC EQUIPMENT- MFRS.&/OR DISTS.	Fotek Corporation Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	56755	Road Match	75m

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
40	OFFICE EQUIPMENT MFRS. &/OR DISTS.	Hanimex Pty, Ltd, Old Pittwater Rd, Brookvale 2100	54565	Road Match	75m
	RECORDING EQUIPMENT MFRS. &/OR IMPS. &/OR DISTS.	Hanimex Pty. Ltd, Old Pittwater Rd, Brookvale. 2100	62482	Road Match	75m
	X-RAY MEDICAL &/OR INDUSTRIAL APPARATUS MFRS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale 2100	75403	Road Match	75m
	ADDING & CALCULATING MACHINE MFRS. &/OR IMPS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	1043	Road Match	75m
	BEACH EQUIPMENT MFRS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	4619	Road Match	75m
	COPYING MACHINES MFRS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	16363	Road Match	75m
	CYCLE ACCESSORIES MFRS. &/OR W/SALERS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	17021	Road Match	75m
	CYCLE MFRS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	17079	Road Match	75m
	DUPLICATING MACHINE MFRS. &/OR IMPS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	21032	Road Match	75m
	ELECTRIC FAN MFRS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	21642	Road Match	75m
	ELECTRIC LAMP (BED, DESK, STANDARD ETC.) MFRS &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	21738	Road Match	75m
	EXPORTERS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	26883	Road Match	75m
	FILM EQUIP MFRS	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	27497	Road Match	75m
	FILM EQUIPMENT IMPS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	27488	Road Match	75m
	FILM PROJECTOR MFRS. &./OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	27576	Road Match	75m
	IMPORTERS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	36900	Road Match	75m
	MICROFILM SERVICES.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	45780	Road Match	75m
	PHOTO-COPYING EQUIPMENT MFRS.&/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	56423	Road Match	75m
	PHOTOGRAPHIC DEVELOPING, PRINTING &/OR COLOURING SERVICES.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	56690	Road Match	75m
	PHOTOGRAPHIC EQUIPMENT DEALERS &/OR IMPS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	56722	Road Match	75m
	PHOTOGRAPHIC EQUIPMENT- MFRS.&/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	56758	Road Match	75m
	PHOTOGRAPHIC SUPPLIES.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	56817	Road Match	75m
	PICTURE THEATRE EQUIPMENT &/OR SUPPLIES.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	57069	Road Match	75m
	RADIO &/OR TELEVISION DISTS. -W/SALE.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	61017	Road Match	75m
	ROOM HEATERS-ELECTRIC-MFRS, &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	63959	Road Match	75m
	SCHOOL SUPPLIES MFRS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	64850	Road Match	75m
	SPEARFISHING &/OR UNDERWATER EQUIPMENT.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	66727	Road Match	75m
	SPORTS GOODS MFRS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	66790	Road Match	75m

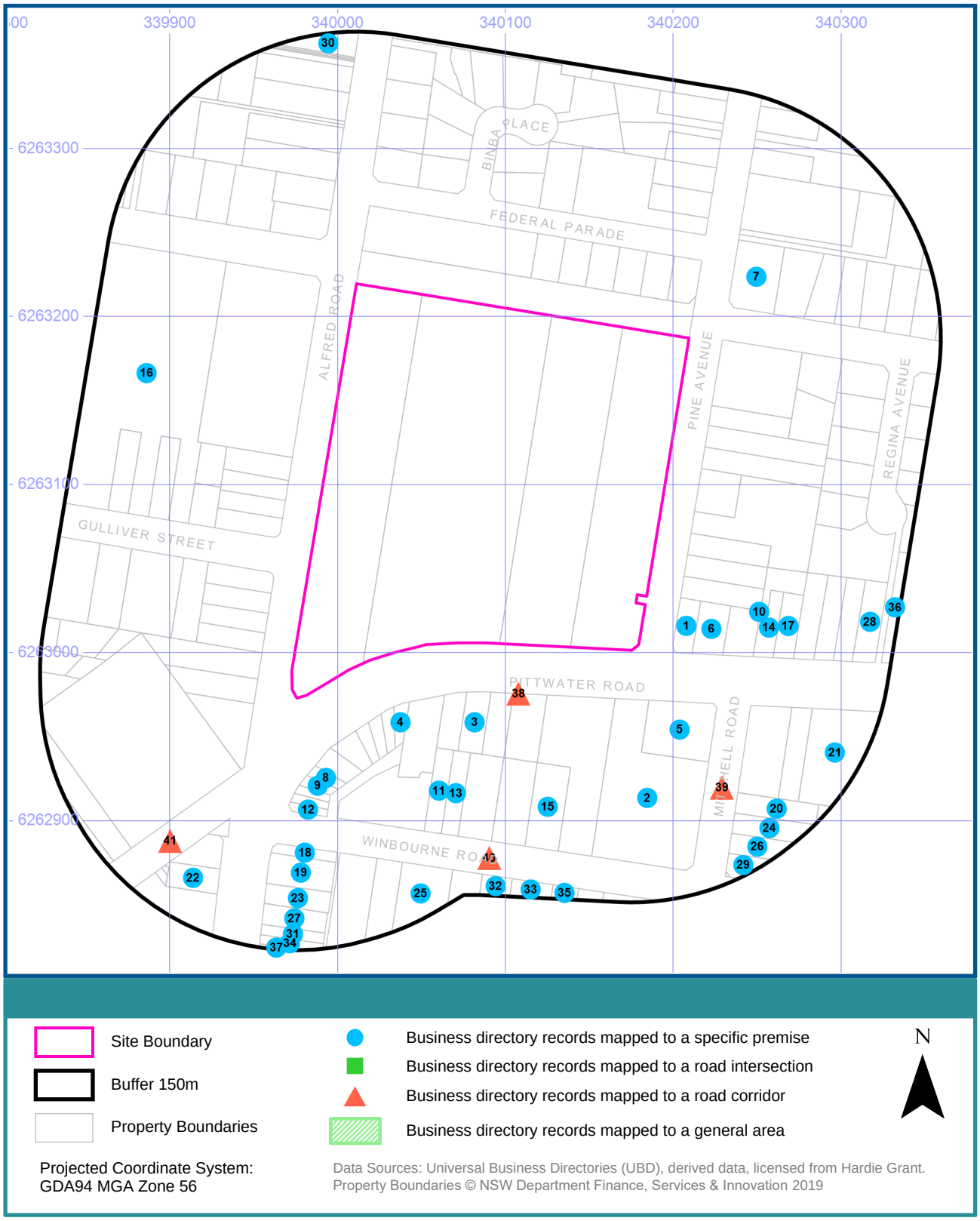
Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
40	STEREOPHONIC EQUIPMENT MFRS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	68461	Road Match	75m
	SURFING EQUIPMENT MFRS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	68743	Road Match	75m
	KNITTED GOODS MFRS. &/OR KNITTING MILLS.	Knit Fabric Centre, Shop 4, Old Pittwater Rd., Brookvale. 2100	39397	Road Match	75m

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1975 Business Directory Records



Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1975 Business Directory Records
Premise or Road Intersection Matches

Records from the 1975 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	ELECTRONIC EQUIPMENT MFRS. &/OR DISTS.	Granger Associates Pty. Ltd., 527 Pittwater Rd., Brookvale. 2100.	26821	Premise Match	20m	South East
	PROPERTY MANAGEMENT.	Hawke, C. H. Pty. Ltd., 527 Pittwater Rd., Brookvale.2100	70646	Premise Match	20m	South East
	REAL ESTATE AGENTS &/OR VALUERS.	Hawke, C. H. Pty. Ltd., 527 Pittwater Rd., Brookvale.2100	72422	Premise Match	20m	South East
	BUILDERS &/OR BUILDING CONTRACTORS.	Hayes, A. M. Builders Pty. Ltd., 527 Pittwater Rd., Brookvale. 2100.	8501	Premise Match	20m	South East
	INSURANCE BROKERS.	Lockard D. Insurances Pty. Ltd., 527 Pittwater Rd., Brookvale.	44892	Premise Match	20m	South East
2	SCREEN PROCESS PRINTERS	Kookaburra Studio., 4 Mitchell Rd., Brookvale.2100	76228	Premise Match	29m	South East
	SCREEN PROCESS PRINTERS	Kookaburra Studio., 4 Mitchell Rd., Brookvale.2100	76229	Premise Match	29m	South East
	SIGNWRITERS.	Kookaburra Studio., 4 Mitchell Rd., Brookvale.2100	77649	Premise Match	29m	South East
	PRINTERS-LITHOGRAPHIC (OFFSET).	Prior Press Pty. Ltd., 2 Mitchell Rd., Brookvale.2100	70037	Premise Match	29m	South East
3	CARPET &/OR FLOOR COVERING PLANNERS &/OR LAYERS.	Mills & Moore, 728 Pittwater Rd., Brookvale. 2100	13427	Premise Match	29m	South
	CARPET &/OR FLOOR COVERING RETAILERS &/OR SPECIALISTS.	Mills & Moore, 728 Pittwater Rd., Brookvale. 2100.	13526	Premise Match	29m	South
4	EMPLOYMENT AGENCIES.	Centacom Staff Pty. Ltd., 722 Pittwater Rd., Brookvale. 2100.	27188	Premise Match	30m	South
	SURGICAL APPLIANCE MFRS. &/OR DISTS.	Manly Warringah Surgical Supplies Pty. Ltd., 718 Pittwater Rd., Brookvale. 2100.	81316	Premise Match	30m	South
	SURGICAL BELTS, STOCKING, SPECIALISTS.	Manly Warringah Surgical Supplies Pty. Ltd., 718 Pittwater Rd., Brookvale. 2100.	81336	Premise Match	30m	South
	MEDICAL SUPPLIES.	Manly-Warringah Surgical Supplies, 722 Pittwater Rd., Brookvale.2100	51956	Premise Match	30m	South
	NEWSPAPER PUBLISHERS	Pacific Times., 722'Pittwater Rd., Brookvale.2100	63987	Premise Match	30m	South
	PROPERTY MANAGEMENT.	Ruby Real Estate Pty. Ltd., 718 Pittwater Rd., Brookvale.2100	70798	Premise Match	30m	South
	REAL ESTATE AGENTS &/OR VALUERS.	Ruby Real Estate Pty. Ltd., 718 Pittwater Rd., Brookvale.2100	72922	Premise Match	30m	South
	ARCHITECTS.	Smith, F. H., 722 Pittwater Rd., Brookvale. 2100.	2842	Premise Match	30m	South
	PRINTERS-LITHOGRAPHIC (OFFSET).	Time Instant Printing., 722 Pittwater Rd., Brookvale.2100	70102	Premise Match	30m	South
	INSURANCE BROKERS.	Time Insurance Brokers, 722 Pittwater Rd., Brookvale.2100	44929	Premise Match	30m	South
	SOLICITORS.	Wood, P. H., Linden & Co., 722 Pittwater Rd., Brookvale.2100	78841	Premise Match	30m	South
5	MOTOR GARAGES &/OR ENGINEERS.	Total Service Station., 738 Pittwater Rd., Brookvale.2100	59689	Premise Match	31m	South East

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
6	FUNERAL DIRECTORS.	Gregory & Carr (Brookvale) Pty. Ltd., 529 Pittwater Rd., Brookvale	36049	Premise Match	32m	South East
	FUNERAL DIRECTORS.	Gregory & Carr, 529 Pittwater Rd., Brookvale. 2100	36050	Premise Match	32m	South East
7	BUILDERS &/OR BUILDING CONTRACTORS (M.M.B.A.)	Phillpot Constructions Pty. Ltd., 21 Pine Ave., Brookvale. 2100.	8915	Premise Match	32m	North East
8	ARMATURE WINDERS.	McCahill, J. F. Electric Co., 710 Pittwater Rd., Brookvale. 2100.	2894	Premise Match	42m	South West
	ELECTRIC MOTOR WINDING &/OR REWINDING SPECIALISTS.	McCahill, J. F. Electric Co., 710 Pittwater Rd., Brookvale. 2100.	25510	Premise Match	42m	South West
9	AWNINGS-ALUMINIUM MFRS.&/OR DISTS.	Controlite Blind & Awning Centre, 706 Pittwater Rd., Brookvale. 2100.	3704	Premise Match	46m	South West
	BLIND MFRS. &/OR DISTS. - CANVAS - HOLLAND-VENETIAN.	Controlite Blind & Awning Centre, 706 Pittwater Rd., Brookvale. 2100.	6401	Premise Match	46m	South West
	BLIND MFRS. &/OR DISTS. - CANVAS - HOLLAND-VENETIAN.	Controlite, 708 Pittwater Rd., Brookvale. 2100.	6402	Premise Match	46m	South West
	GYMNASIUM EQUIPMENT MFRS. &/OR DEALERS.	Fitness wise (Holdings) Pty. Ltd., 708 Pittwater Rd. Brookvale 2100	40132	Premise Match	46m	South West
	LAWNMOWER SALES &/OR SERVICE	P. & R. Mowers, 708 Pittwater Rd., Brookvale.2100	47135	Premise Match	46m	South West
	LAWNMOWER SALES &/OR SERVICE	P. & R. Mowers. 708 Pittwater Rd., Brookvale.2100	47136	Premise Match	46m	South West
	LAWNMOWER REPAIRERS &/OR SHARPENERS.	P. & R. Mowers., 708 Pittwater Rd., Brookvale.2100	47086	Premise Match	46m	South West
10	OUTBOARD MOTOR MFRS. &/OR DISTS.	Smiths Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale.	65001	Premise Match	50m	South East
	BOAT, LAUNCH &/OR YACHT ACCESSORIES MFRS. &/OR DISTS	Smiths Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100.	6558	Premise Match	50m	South East
	BOAT, LAUNCH &/OR YACHT SALES &/OR SERVICE	Smiths Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100.	6833	Premise Match	50m	South East
	BOAT, LAUNCH &/OR YACHT SALES &/OR SERVICE	Smith's Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale. 2100.	6832	Premise Match	50m	South East
11	MOTOR ENGINEERS.	Thompson, W., 72 Winbourne Rd., Brookvale.2100	58246	Premise Match	61m	South
	MOTOR BRAKE SERVICES.	Thompson. W., 72 Winbourne Rd., Brookvale.2100	56843	Premise Match	61m	South
12	ABRASIVE MERCHANTS &/OR DISTS.	H & G Industrial Supplies, 702 Pittwater Rd, Brookvale. 2100.	69	Premise Match	62m	South West
	ENGINEER'S SUPPLIES	H & G Industrial Supplies, 702 Pittwater Rd., Brookvale. 2100.	30652	Premise Match	62m	South West
	ROPE, CORDAGE &/OR TWINE MERCHANTS.	H & G. Industrial Supplies., 702 Pittwater Rd., Brookvale.2100	74740	Premise Match	62m	South West
	WELDING EQUIPMENT &/OR SUPPLIES MFRS. &/OR DISTS.	H. & G. Industrial Supplies, 702 Pittwater Rd., Brookvale.2100	87207	Premise Match	62m	South West
	HARDWARE DEALERS &/OR IRONMONGERS.	Hardware & General Supplies Ltd. 702-704 Pittwater Rd., Brookvale, 2100	41173	Premise Match	62m	South West
	BUILDERS HARDWARE MFRS. &/OR IMPS. &/OR DISTS.	Hardware & General Supplies Ltd., 702 Pittwater Rd, Brookvale. 2100.	9071	Premise Match	62m	South West
	BUILDERS SUPPLIERS.	Hardware & General Supplies Ltd., 702 Pittwater Rd, Brookvale. 2100.	9260	Premise Match	62m	South West
	HARDWARE DEALERS &/OR IRONMONGERS.	Hardware & General Supplies Ltd., 702 Pittwater Rd, Brookvale.2100	41261	Premise Match	62m	South West
	PLUMBERS SUPPLIES.	Hardware & General Supplies Ltd., 702 Pittwater Rd, Brookvale.2100	68692	Premise Match	62m	South West

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
12	CEMENT PORTLAND MFRS. &/OR DISTS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale. 2100.	14233	Premise Match	62m	South West
	HARDWARE DEALERS &/OR IRONMONGERS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale.2100	41262	Premise Match	62m	South West
	HARDWARE MERCHANTS-W/SALE	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale.2100	41461	Premise Match	62m	South West
	LIME &/OR CEMENT MERCHANTS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale.2100	47592	Premise Match	62m	South West
	LOCKSMITHS &/OR KEY CUTTERS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale.2100	47874	Premise Match	62m	South West
	PAINT VARNISH OILS &/OR COLOUR MERCHANTS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale.2100	65546	Premise Match	62m	South West
	PAINT VARNISH OILS &/OR COLOUR MERCHANTS.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale.2100	65547	Premise Match	62m	South West
	PAINTERS SUPPLIES &/OR REQUISITES.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale.2100	65780	Premise Match	62m	South West
	TOOL DEALERS., RETAIL.	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale.2100	83756	Premise Match	62m	South West
	WALLBOARD MERCHANTS	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale.2100	86358	Premise Match	62m	South West
	INSURANCE BROKERS.	Nelson Golding & Co. Pty. Ltd., 702 Pittwater Rd., Dee Why.2099	44907	Premise Match	62m	South West
13	MOTOR PANEL BEATERS.	Millar, P A. Motor Body Repairs., 70 Winbourne Rd., Brookvale.2100	60969	Premise Match	64m	South
	MOTOR PAINTERS.	Millar, P. A. Motor Body Repairs., 70 Winbourne Rd., Brookvale.2100	60294	Premise Match	64m	South
14	PHOTOGRAPHIC DEVELOPING, PRINTING &/OR COLOURING SERVICES.	Photola Pty. Ltd., 533 Pittwater Rd., Brookvale. 2100	66825	Premise Match	68m	South East
	AUCTIONEERS-REAL ESTATE	Rourke, B. Pty. Ltd., 533 Pittwater Rd., Brookvale. 2100.	3558	Premise Match	68m	South East
	BUSINESS AGENTS &/OR BROKERS.	Rourke, B. Pty. Ltd., 533 Pittwater Rd., Brookvale. 2100.	9887	Premise Match	68m	South East
	PROPERTY MANAGEMENT.	Rourke, B. Pty. Ltd., 533 Pittwater Rd., Brookvale.2100	70795	Premise Match	68m	South East
	REAL ESTATE AGENTS &/OR VALUERS.	Rourke, B. Pty. Ltd., 533 Pittwater Rd., Brookvale.2100	72918	Premise Match	68m	South East
15	ELECTRONIC EQUIPMENT MFRS. &/OR DISTS.	Audioson International Pty. Ltd., 64 Winbourne Rd., Brookvale. 2100	26770	Premise Match	70m	South
	PLASTIC COATING SPECIALISTS MATERIAL	Peratex Plastics Pty. Ltd., 64 Winbourne Rd., Brookvale.2100	67622	Premise Match	70m	South
16	CLOTHING - COATS & COSTUMES - LADIES MFRS. &/OR W/SALERS.	Edwards, D., 12 Gulliver Rd., Brookvale.2100	16819	Premise Match	75m	West
	CLOTHING - DRESSING GOWNS MFRS. &/OR W/SALERS.	Edwards, D., 12 Gulliver Rd., Brookvale.2100	16869	Premise Match	75m	West
	CLOTHING - FROCKS & SUITS MFRS. &/OR W/SALERS.	Edwards, D., 12 Gulliver Rd., Brookvale.2100	16958	Premise Match	75m	West
	CLOTHING - GENERAL MFRS. &/OR W/SALERS.	Edwards, D., 12 Gulliver Rd., Brookvale.2100	17203	Premise Match	75m	West
	CLOTHING-SPORTSWEAR LADIES MFRS.&/OR W/SALERS	Edwards, D., 12 Gulliver Rd., Brookvale.2100	17770	Premise Match	75m	West
	CLOTHING-WATERPROOF MFRS.&/OR W/SALERS	Edwards, D., 12 Gulliver Rd., Brookvale.2100	18005	Premise Match	75m	West

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
16	CLOTHING-SHIRT & PYJAMA MFRS.&/OR W/SALERS	Edwards. D., 12 Gulliver Rd., Brookvale.2100	17648	Premise Match	75m	West
17	MARINE EQUIPMENT MFRS. &/OR DISTS.	International Transceivers Pty. Ltd., 535 Pittwater Rd., Brookvale.	49189	Premise Match	80m	South East
	RADIO &/OR TELEVISION SALES &/OR SERVICEMEN.	International Transceivers Pty. Ltd., 535 Pittwater Rd., Brookvale.2100	71635	Premise Match	80m	South East
	RADIO &/OR TELEVISION SALES &/OR SERVICEMEN.	North Manly Radio., Electric Pty. Ltd., 535 Pittwater Rd., Brookvale.2100	71671	Premise Match	80m	South East
18	DRAWING OFFICE SUPPLIES.	Atos Plans & Copying Co., 698 Pittwater Rd., Brookvale. 2100	22725	Premise Match	87m	South West
	PHOTO COPYING SERVICES.	Atos Plans & Copying Co., 698 Pittwater Rd., Brookvale. 2100	66470	Premise Match	87m	South West
	ARTISTS SUPPLIES-RETAIL	Atos Plans & Copying Co., 698 Pittwater Rd., Brookvale. 2100.	3051	Premise Match	87m	South West
	PLAN PRINTERS.	Atos Plans & Copying Co., 698 Pittwater Rd., Brookvale.2100	67495	Premise Match	87m	South West
	DELICATESSENS	Milani Bros., 698 Pittwater Rd., Brookvale. 2100	20346	Premise Match	87m	South West
	MILK, FRUIT JUICE BARS &/OR CONFECTIONERS.	Milani Bros., 698 Pittwater Rd., Brookvale.2100	53594	Premise Match	87m	South West
19	REAL ESTATE AGENTS &/OR VALUERS.	Alaustralia, D. P. Pty. Ltd., 696 Pittwater Rd., Brookvale.2100	71945	Premise Match	93m	South West
	BOOKSELLERS RETAIL	Brookvale Arcade Stationer, 694 Pittwater Rd., Brookvale. 2100.	7262	Premise Match	93m	South West
	TOY DEALERS., RETAIL	Brookvale Arcade Stationer, 694 Pittwater Rd., Brookvale.2100	84198	Premise Match	93m	South West
	STATIONERS-RETAIL	Brookvale Arcade Stationer., 694 Pittwater Rd., Brookvale.2100	79864	Premise Match	93m	South West
	REAL ESTATE AGENTS &/OR VALUERS.	Caputo Real Estate., 696 Pittwater Rd., Brookvale.2100	72100	Premise Match	93m	South West
	GROCERS-RETAIL	Goodways Food Market., 696 Pittwater Rd., Brookvale. 2100	39467	Premise Match	93m	South West
	THEATRICAL AGENTS.	Myles, D. Enterprises, 694 Pittwater Rd., Brookvale.2100	83041	Premise Match	93m	South West
	SOLICITORS.	Sherwood McLean & Co., 696 Pittwater Rd., Brookvale.2100	78718	Premise Match	93m	South West
	BLIND MFRS. &/OR DISTS. - CANVAS - HOLLAND-VENETIAN.	Warringah Blind Factory, 694 Pittwater Rd., Brookvale. 2100.	6452	Premise Match	93m	South West
20	MOTOR ELECTRICIANS.	Warringah Auto Electrical., 1 Mitchell Rd., Brookvale. 2100.	58061	Premise Match	106m	South East
	MOTOR ELECTRICIANS.	Warringah Auto Electrical., 1 Mitchell Rd., Brookvale. 2100.	58062	Premise Match	106m	South East
21	ELECTRONICS-INDUSTRIAL CONTROL EQUIPMENT MFRS.	Hawker Siddeley Electronics Ltd., 752 Pittwater Rd., Brookvale.	26917	Premise Match	110m	South East
	ELECTRONIC EQUIPMENT MFRS. &/OR DISTS.	Hawker Siddeley Electronics Ltd., 752 Pittwater Rd., Brookvale. 2100	26826	Premise Match	110m	South East
	ENGINEERS-ELECTRONIC.	Hawker Siddeley Electronics Ltd., 752 Pittwater Rd., Brookvale. 2100.	28326	Premise Match	110m	South East
22	HEALTH CENTRES & OR CLINICS	Brookvale Baby Health Centre, 519 Pittwater Rd., Brookvale.2100	41611	Premise Match	111m	South West
23	DUPLICATING &/OR TYPING SPECIALISTS.	Brookvale Typing & Duplicating Services, 690 Pittwater Rd., Brookvale. 2100	24507	Premise Match	112m	South West
	ACCOUNTANTS & AUDITORS.	Lewis A. B. K., 692 Pittwater Rd., Brookvale. 2100.	397	Premise Match	112m	South West
24	FENCE &/OR GATE MFRS.	McGowan, N. R., 3 Mitchell Rd., Brookvale. 2100.	31437	Premise Match	115m	South East
	ORNAMENTAL METAL WORKERS.	McGowan, N. R., 3 Mitchell Rd., Brookvale.2100	64933	Premise Match	115m	South East
	WELDERS., Electric &/OR OXY.	McGowan, N. R., 3 Mitchell Rd., Brookvale.2100	86986	Premise Match	115m	South East

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
24	WROUGHT IRON WORKERS.	McGowan, N. R., 3 Mitchell Rd., Brookvale.2100	87982	Premise Match	115m	South East
25	TYRE DEALERS, RETREADERS &/OR VULCANIZERS,	Owen, P. A. Pty. Ltd., 83 Winbourne Rd., Brookvale.2100	85612	Premise Match	115m	South
	PILE DRIVING CONTRACTORS.	Vibropile (N.S.W,) Pty, Ltd., 81 Winbourne Rd., Brookvale.2100	67303	Premise Match	115m	South
26	MOTOR ENGINEERS.	Cush, R. Mechanical Repairs Pty. Ltd., 5 Mitchell Rd., Brookvale.2100	58161	Premise Match	124m	South East
	MOTOR ENGINEERS.	Murphy, T., 5 Mitchell Rd., Brookvale.2100	58215	Premise Match	124m	South East
	MOTOR CLUTCH MFRS.	Warringah Clutch Service., 5 Mitchell Rd., Brookvale. 2100.	57675	Premise Match	124m	South East
27	RESTAURANTS.	East India Restaurant., 688 Pittwater Rd., Brookvale.2100	73693	Premise Match	124m	South West
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS.	Evening Star Salon, 688 Pittwater Rd., Brookvale. 2100.	5239	Premise Match	124m	South West
	MEDICAL PRACTITIONERS.	Morgante, J., 688 Pittwater Rd., Brookvale. 2100.	51106	Premise Match	124m	South West
	CHEMISTS-PHARMACEUTICAL	Re, J., 688 Pittwater Rd., Brookvale.2100	15810	Premise Match	124m	South West
28	PLYWOOD MFRS &/OR MERCHANTS &/OR DISTS.	Bruynzeel Factories Aust. Pty. Ltd., 543 Pittwater Rd., Brookvale.2100	68769	Premise Match	127m	East
	TIMBER IMPORTERS &/OR DISTS.	Bruynzeel Factories Aust. Pty. Ltd., 543 Pittwater Rd., Brookvale.2100	83319	Premise Match	127m	East
	MINING COMPANIES	Stellar Mining N.L., 543 Pittwater Rd., Brookvale.2100	54214	Premise Match	127m	East
29	MOTOR WRECKERS.	Auto market, The., 54 Winbourne Rd., Brookvale.2100	62916	Premise Match	134m	South East
	MOTOR SPARE PARTS DEALERS- RETAIL	Auto market., The. 54 Winbourne Rd., Brookvale.2100	62113	Premise Match	134m	South East
	MOTOR ENGINEERS.	Automarket, The., 54 Winbourne Rd., Brookvale.2100	58146	Premise Match	134m	South East
	MOTOR PANEL BEATERS.	Automarket, The., 54 Winbourne Rd., Brookvale.2100	60590	Premise Match	134m	South East
	MOTOR PAINTERS.	Automarket. The, 54 Winbourne Rd., Brookvale.2100	59957	Premise Match	134m	South East
	MOTOR ELECTRICIANS.	Automarket. The., 54 Winbourne Rd., Brookvale. 2100.	57921	Premise Match	134m	South East
	TILE FIXERS., FLOOR &/OR WALL.	Florwall Tiles Pty. Ltd., 56 Winbourne Rd., Brookvale.2100	83123	Premise Match	134m	South East
	TILE.,FLOOR &/OR WALL IMPS. &/OR MFRS. &/OR DISTS.	Florwall Tiles Pty. Ltd., 56 Winbourne Rd., Brookvale.2100	83199	Premise Match	134m	South East
30	HAULAGE CONTRACTORS.	McFarlane, S. S., 64 Alfred Rd., Brookvale 2100	41569	Premise Match	135m	North
	ROAD TRANSPORT SERVICES-NSW.	McFarlane, S. S., 64 Alfred Rd., Brookvale.2100	74470	Premise Match	135m	North
31	CAFES, TEA ROOMS &/OR COFFEE LOUNGES.	Brookvale Food Bar, 686 Pittwater Rd., Brookvale. 2100.	11851	Premise Match	136m	South West
32	MOTOR PAINTERS.	Panel Shop, The., 77 Winbourne Rd., Brookvale.2100	60343	Premise Match	138m	South
	MOTOR PANEL BEATERS.	Panel Shop, The., 77 Winbourne Rd., Brookvale.2100	61024	Premise Match	138m	South
33	MOTOR BODY REPAIRS &/OR CONVERTERS.	J. & C. Smash Repairs., 75 Winbourne Rd., Brookvale.2100	56650	Premise Match	139m	South
	MOTOR PAINTERS.	J. & C. Smash Repairs., 75 Winbourne Rd., Brookvale.2100	60206	Premise Match	139m	South
	MOTOR PANEL BEATERS.	J. & C. Smash Repairs., 75 Winbourne Rd., Brookvale.2100	60870	Premise Match	139m	South
	AIR COMPRESSOR MFRS. &/OR DISTS.	Manrick Industries Pty. Ltd., 75 Winbourne Rd, Brookvale. 2100.	1570	Premise Match	139m	South

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
33	SAW BLADES-BAND, CIRCULAR,- MFRS. &/OR IMPS. &/OR DISTS.	Manrick Industries Pty. Ltd., 75 Winbourne Rd., Brookvale 2100	75653	Premise Match	139m	South
	SAW MFRS. &/OR IMPS. &/OR DISTS.	Manrick Industries Pty. Ltd., 75 Winbourne Rd., Brookvale. 2100	75696	Premise Match	139m	South
	MACHINERY DEALERS-SECONDHAND.	Manrick Industries Pty. Ltd., 75 Winbourne Rd., Brookvale. 2100.	48093	Premise Match	139m	South
	MACHINERY MERCHANTS &/OR IMPORTERS.	Manrick Industries Pty. Ltd., 75 Winbourne Rd., Brookvale. 2100.	48258	Premise Match	139m	South
	MACHINERY VALUATORS.	Manrick Industries Pty. Ltd., 75 Winbourne Rd., Brookvale. 2100.	48309	Premise Match	139m	South
	MACHINE TOOL MFRS. &/OR IMPS.&/OR DISTS.	Manrick Industries Pty. Ltd., 75 Winbourne Rd., Brookvale.2100	48031	Premise Match	139m	South
	MACHINERY DEALERS-SECONDHAND.	Manrick Industries Pty. Ltd., 75 Winbourne Rd., Brookvale.2100	48069	Premise Match	139m	South
	WELDING EQUIPMENT &/OR SUPPLIES MFRS. &/OR DISTS.	Manrick Industries Pty. Ltd., 75 Winbourne Rd., Brookvale.2100	87216	Premise Match	139m	South
	MOTOR RADIATOR SPECIALISTS &/OR REPAIRERS	Warringah Auto Radiator Repairs., 75 Winbourne Rd., Brookvale.2100	61337	Premise Match	139m	South
	AIR CONDITIONING-AUTOMOTIVE.	Warringah Auto-Air installations, 75 Winbourne Rd., Brookvale. 2100.	1648	Premise Match	139m	South
34	CAKE SHOPS &/OR PASTRYCOOKS.	Buttercup Cakes, 684 Pittwater Rd., Brookvale. 2100.	12466	Premise Match	142m	South West
35	AIR COMPRESSORS &/OR EQUIPMENT FOR HIRE	Davis, R. & Son Pty. Ltd., 73 Winbourne Rd, Brookvale. 2100.	1621	Premise Match	142m	South
	EARTH MOVING CONTRACTORS.	Davis, R. & Son Pty. Ltd., 73 Winbourne Rd., Brookvale. 2100	24723	Premise Match	142m	South
	EARTH MOVING MACHINERY HIRERS.	Davis, R. & Son Pty. Ltd., 73 Winbourne Rd., Brookvale. 2100	24855	Premise Match	142m	South
	ENGINEERS- DIESEL	Davis, R. & Son Pty. Ltd., 73 Winbourne Rd., Brookvale. 2100.	28059	Premise Match	142m	South
	WELDERS., Electric &/OR OXY.	Davis, R. & Son Pty. Ltd., 73 Winbourne Rd., Brookvale.2100	86853	Premise Match	142m	South
36	DOOR MFRS. &/OR DISTS. &/OR INSTALLERS.	Cemac Pty. Ltd., 545 Pittwater Rd., Brookvale. 2100	22343	Premise Match	144m	East
	PLYWOOD MFRS &/OR MERCHANTS &/OR DISTS.	Cemac Pty. Ltd., 545 Pittwater Rd., Brookvale.2100	68775	Premise Match	144m	East
37	BEAUTY SALONS &/OR LADIES HAIRDRESSERS.	Carissa Coifure, 682 Pittwater Rd., Brookvale. 2100.	5044	Premise Match	148m	South West
	BUTCHERS-RETAIL	Drake, L. W. B., 680 Pittwater Rd., Brookvale. 2100.	10285	Premise Match	148m	South West
	ART GALLERIES &/OR MUSEUMS.	Gallery, The, 682 Pittwater Rd., Brookvale. 2100.	2930	Premise Match	148m	South West
	FOOTWEAR RETAILERS.	Mr. Brandons Family Shoe Store, 682 Pittwater Rd., Brookvale. 2100.	34084	Premise Match	148m	South West

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1975 Business Directory Records
Road or Area Matches

Records from the 1975 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
38	MOTOR ENGINEERS.	Fisher Motors Pty. Ltd., 467 Pittwater Rd., Brookvale.2100	58169	Road Match	0m
	MOTOR CAR &/OR TRUCK DEALERS- NEW &/OR USED.	Mason, J. Motors., 786 Pittwater Rd., Brookvale. 2100.	57286	Road Match	0m
	PAINTERS SUPPLIES &/OR REQUISITES.	Williamson, Croft Pty. Ltd., 463 Pittwater Rd., Brookvale 2100	65813	Road Match	0m
39	SANDWICH &/OR LUNCHEON SHOPS.	Friar Tuck Shop., Mitchell Rd., Brookvale. 2100	75331	Road Match	60m
	MIXED BUSINESSES.	Friar Tuck Shop., Mitchell Rd., Brookvale.2100	54870	Road Match	60m
	BLIND MFRS. &/OR DISTS. - CANVAS - HOLLAND-VENETIAN.	Litchfield, E. N. & G. Pty. Ltd., Mitchell Rd., Brookvale. 2100.	6426	Road Match	60m
	CURTAIN RAILS, RODS & RINGS MFRS &/OR DISTS.	Litchfield, E. N. & G. Pty. Ltd., Mitchell Rd., Brookvale.2100	19403	Road Match	60m
	ENGINEERS-ELECTRONIC.	Sigtronic Industries Pty. Mitchell Rd. Brookvale. 2100	28344	Road Match	60m
	ELECTRONIC EQUIPMENT MFRS. &/OR DISTS.	Sigtronic Industries Pty., Mitchel Rd., Brookvale. 2100.	26861	Road Match	60m
	MOTOR GARAGES &/OR ENGINEERS.	White Motors, Mitchell Rd., Brookvale.2100	59776	Road Match	60m
	MOTOR ACCESSORIES DEALERS.	White Motors., Mitchell Rd., Brookvale.2100	56322	Road Match	60m
40	ARTISTS SUPPLIES-RETAIL	Atos Art Supplies, Winbourne Rd., Brookvale. 2100.	3050	Road Match	64m
	SPORTS GOODS RETAILERS.	Dive n' Surf Shop., Winbourne Rd., Brookvale.2100	79022	Road Match	64m
41	AUCTIONEERS-REAL ESTATE	Bombardier, S. Real Estate, 9 Old Pittwater Rd., Brookvale. 2100.	3448	Road Match	75m
	REAL ESTATE AGENTS &/OR VALUERS.	Bombardier, S. Real Estate., 9 Old Pittwater Rd., Brookvale.2100	72042	Road Match	75m
	BUSINESS AGENTS &/OR BROKERS.	Bombardier. S Real Estate. 9 Old Pittwater Rd., Brookvale. 2100.	9684	Road Match	75m
	PHOTOGRAPHIC EQUIPMENT-MFRS. &/OR DISTS.	Camera Distributors Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	66893	Road Match	75m
	PHOTOGRAPHIC EQUIPMENT-MFRS. &/OR DISTS.	Fotek Corporation Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	66899	Road Match	75m
	RADIO &/OR TELEVISION DISTS. W/SALE.	Hanimex Pty, Ltd., Old Pittwater Rd., Brookvale.2100	71520	Road Match	75m
	STEREOPHONIC EQUIP MFRS &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd. Brookvale.2100	80908	Road Match	75m
	PHOTOGRAPHIC DEVELOPING, PRINTING &/OR COLOURING SERVICES.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale 2100	66818	Road Match	75m
	DUPLICATING MACHINE MFRS. &/OR IMPS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	24476	Road Match	75m
	ELECTRIC LAMP (BED, DESK, STANDARD ETC.) MFRS &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	25297	Road Match	75m
	IMPORTERS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	43702	Road Match	75m
	PHOTO-COPYING EQUIPMENT MFRS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	66462	Road Match	75m
	PHOTOGRAPHIC EQUIPMENT DEALERS &/OR IMPS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	66858	Road Match	75m
	PHOTOGRAPHIC EQUIPMENT-MFRS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	66904	Road Match	75m
	PHOTOGRAPHIC SUPPLIES.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	66971	Road Match	75m
	SAFETY EQUIPMENT MFRS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	75130	Road Match	75m

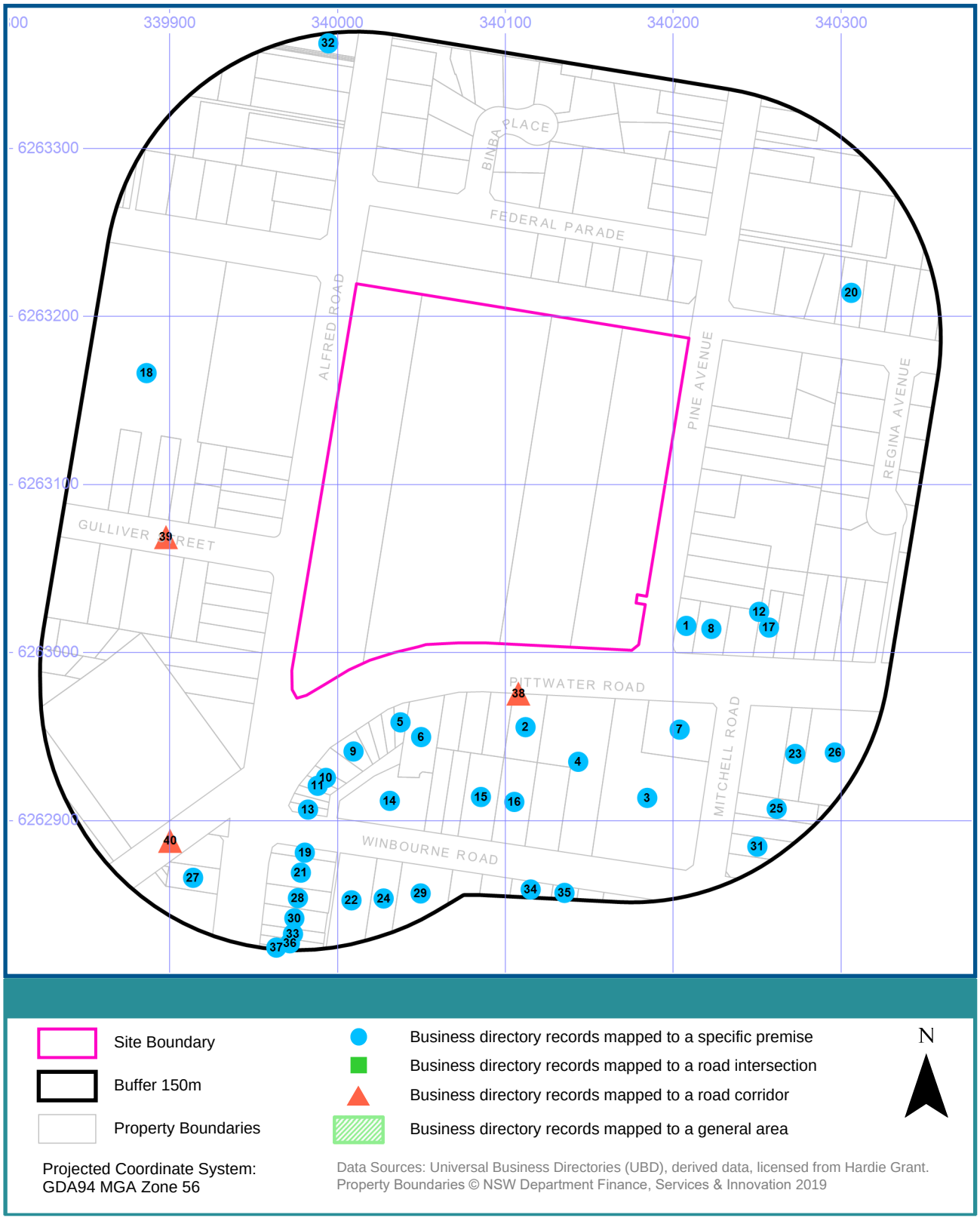
Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
41	SCHOOL SUPPLIES MFRS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	75855	Road Match	75m
	ADDING & CALCULATING MACHINE MFRS. &/OR IMPS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100.	767	Road Match	75m
	BEACH EQUIPMENT MFRS	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100.	4841	Road Match	75m
	EXPORTERS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100.	31040	Road Match	75m
	FILM EQUIP MFRS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100.	31697	Road Match	75m
	FILM EQUIPMENT IMPS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100.	31684	Road Match	75m
	FILM PROJECTOR MFRS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100.	31783	Road Match	75m
	SURFING EQUIPMENT MFRS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100.	81288	Road Match	75m
	COPYING MACHINES MFRS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale.2100	18950	Road Match	75m
	MICROFILM SERVICES.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale.2100	53152	Road Match	75m
	OFFICE EQUIPMENT MFRS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale.2100	64382	Road Match	75m
	PICTURE THEATRE EQUIPMENT &/OR SUPPLIES.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale.2100	67179	Road Match	75m
	RECORDING EQUIPMENT MFRS. &/OR IMPS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale.2100	73218	Road Match	75m
	ROOM HEATERS-ELECTRIC-MFRS. &/OR DISTS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale.2100	74686	Road Match	75m
	RUBBER FOOTWEAR MFRS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale.2100	74762	Road Match	75m
	SPEARFISHING &/OR UNDERWATER EQUIPMENT.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale.2100	78883	Road Match	75m
	SPORTS GOODS MFRS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale.2100	78955	Road Match	75m
	TOY IMPS. &/ORW/SALERS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale.2100	84480	Road Match	75m
	TRAVEL GOODS MFRS.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale.2100	85179	Road Match	75m
	ELECTRIC FAN MFRS. &/OR DISTS.	Hanlmex Pty. Ltd., Old Pittwater Rd., Brookvale. 2100	25184	Road Match	75m
	LEATHER GOODS MFRS. &/OR W/SALERS.	Hanlmex Pty. Ltd., Old Pittwater Rd., Brookvale.2100	47245	Road Match	75m
	AIR COMPRESSOR MFRS. &/OR DISTS.	Sullair Australia Limited Clearview Place, Old Pittwater Road, Brookvale. 2100	1535	Road Match	75m
	STATIONERS-WHOLESALE	Vale Press Pty. Ltd., Old Pittwater Rd, Brookvale.2100	80307	Road Match	75m
	PRINTERS-LETTERPRESS.	Vale Press Pty. Ltd., Old Pittwater Rd., Brookvale.2100	69704	Road Match	75m
	PRINTERS-LITHOGRAPHIC (OFFSET).	Vale Press Pty. Ltd., Old Pittwater Rd., Brookvale.2100	70114	Road Match	75m
	OFFICE EQUIPMENT MFRS. &/OR DISTS.	Valroy Stationers Pty, Ltd., Old Pittwater Rd., Brookvale.2010	64435	Road Match	75m
	STATIONERS-RETAIL	Valroy Stationers Pty. Ltd., Old Pittwater Rd., Brookvale.2100	80202	Road Match	75m
	STATIONERS-WHOLESALE	Valroy Stationers Pty. Ltd., Old Pittwater Rd., Brookvale.2100	80308	Road Match	75m

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1970 Business Directory Records



Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1970 Business Directory Records
Premise or Road Intersection Matches

Records from the 1970 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	ENGINEERS-CHARTERED (E515)	Dyson, N. K., 527 Pittwater Rd., Brookvale	297461	Premise Match	20m	South East
	ENGINEERS-STRUCTURAL (E165)	Dyson, N. K., 527 Pittwater Rd., Brookvale	301085	Premise Match	20m	South East
	REAL ESTATE AGENTS/VALUERS (R205)	Hawke, C. H. Pty. Ltd., 527 Pittwater Rd., BROOKVALE	355461	Premise Match	20m	South East
	SPORTING TROPHIES (S437)	Warringah Toy & Trophy Supplies, 527 Pittwater Rd., Brookvale	363290	Premise Match	20m	South East
	TOY IMPORTERS &/OR WHOLESALERS(T540)	Warringah Toy & Trophy Supplies, 527 Pittwater Rd., Brookvale	370403	Premise Match	20m	South East
2	PLUMBERS,GASFITTERS/DRAINLAYERS (P608)	Grogan, G. W., 732 Pittwater Rd., BROOKVALE	350556	Premise Match	29m	South
3	PRINTERS-LITHOGRAPHIC (OFFSET)(P810)	Prior Press Pty. Ltd., 2 Mitchell Rd., Brookvale	352691	Premise Match	29m	South East
4	LOCAL BODIES (L630)	Warringah Shire Council., 734 Pittwater Rd., Brookvale	323785	Premise Match	29m	South
5	INSURANCE BROKERS (I520)	Aviation Accident & General Insurance Brokers., 722 Pittwater Rd., Brookvale	319956	Premise Match	30m	South
	PHOTO-COPYING SERVICES (P254)	Drew, R. Secretarial & Copying Service., 722 Pittwater Rd., Brookvale	347753	Premise Match	30m	South
	DUPLICATING &/OR TYPING SPEC.	Drew-Robin Secretarial & Copying Service., 1st Flr, 722 Pittwater Rd., Brookvale	292691	Premise Match	30m	South
	SURGICAL APPLIANCE MFRS./DIST.(S808)	Manly Warringah Surgical Supplies, 718 Pittwater Rd., Brookvale	366298	Premise Match	30m	South
	SURGICAL BELTS/STOCKINGS SPECIALISTS (S811)	Manly Warringah Surgical Supplies, 718 Pittwater Rd., Brookvale	366320	Premise Match	30m	South
	MEDICAL SUPPLIES (M220)	Manly-Warringah Surgical Supplies., 722 Pittwater Rd., Brookvale	328653	Premise Match	30m	South
6	SIGNWRITERS (S320)	Fitzsimmons, Al., 724 Pittwater Rd., Brookvale	361606	Premise Match	31m	South
	PAINTERS,PAPERHANGERS/DECORATORS (P092)	Fitzsimons, A. L., 724 Pittwater Rd., BROOKVALE	346651	Premise Match	31m	South
7	MOTOR GARAGES & ENGINEERS(M6S6)	Total Service Station., 738 Pittwater Rd., BROOKVALE	338603	Premise Match	31m	South East
8	FUNERAL DIRECTORS (F670)	Gregory & Carr (Brookvale) Pty. Ltd., 529 Pittwater Rd., BROOKVALE	308328	Premise Match	32m	South East
9	TYRE/TUBE DEALERS (T760)	American Tyre Distributors (A/asia) Pty. Ltd., 714 Pittwater Rd, Brookvale	371809	Premise Match	33m	South West
	TYRE/TUBE DEALERS (T760)	Warringah Discount Tyre Service, .7.14-716 Pittwater Rd., Brookvale, 2100 v	371954	Premise Match	33m	South West
	TYRE & TUBE MANUFACTURERS &/OR DISTRIBUTORS	Warringah Discount Tyre Service, 714-716 Pittwater Rd., Brookvale, 2100	371648	Premise Match	33m	South West
	TYRE DEALERS, RETREADERS & VULCANIZERS	Warringah Discount Tyre Service, 714-716 Pittwater Rd., Brookvale, 2100	371776	Premise Match	33m	South West
	BATTERY DISTRIBUTORS (B190)	Warringah Tyre Service., 714-716 Pittwater Rd., Brookvale	265263	Premise Match	33m	South West

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
10	ARMATURE WINDERS (A465)	McCahill, J F Electric Co., 710 Pittwater Rd., Brookvale	262260	Premise Match	42m	South West
	ELECTRIC MOTOR WINDING/REWINDING SPECIALISTS (E205)	McCahill, J. F. Electric Co., 710 Pittwater Rd., Brookvale	294123	Premise Match	42m	South West
11	BLIND MFRS. &/OR SPECIALISTS (B410)	Controlite Blind & Awning Centre., 706-708 Pittwater Rd., Brookvale	267153	Premise Match	46m	South West
	BLIND MFRS.-HOLLAND (B405)	Controll's Blind & Awning Centre., 706-708 Pittwater Rd., Brookvale	267278	Premise Match	46m	South West
	BLIND MFRS.-VENETIAN (B420)	Controll's Blind & Awning Centre., 706-708 Pittwater Rd., Brookvale	267317	Premise Match	46m	South West
12	BOAT, LAUNCH & YACHT ACCESSORIES MFRS&/OR DISTS. (B444)	Smiths Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale	267456	Premise Match	50m	South East
	BOAT, LAUNCH & YACHT BUILDERS &/OR REPAIRERS	Smith's Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale	267606	Premise Match	50m	South East
	BOAT, LAUNCH & YACHT SALES & SERVICE (B457)	Smith's Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale	267718	Premise Match	50m	South East
13	ENGINEERS' SUPPLIES (E770)	H. & G. Industrial Supplies., 702 Pittwater Rd., Brookvale.	297171	Premise Match	62m	South West
	BUILDERS' EQUIPMENT HIRERS (B802)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale	270981	Premise Match	62m	South West
	BUILDERS' HARDWARE MFRS. &/OR DISTRIBUTORS	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale	271064	Premise Match	62m	South West
	BUILDERS' SUPPLIERS (B814)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale	271383	Premise Match	62m	South West
	CEMENT-PORTLAND-MFRS. &/OR DISTS. (C222)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale	278984	Premise Match	62m	South West
	CONCRETE MIXER & HANDLING EQUIPMENT HIRE SERVICE (C581)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale	285174	Premise Match	62m	South West
	ENGINEERS' SUPPLIES (E770)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale	297173	Premise Match	62m	South West
	HARDWARE DEALERS/IRONMONGERS(H230)	Hardware & General Supplies Ltd., 702 Pittwater Rd., BROOKVALE	315087	Premise Match	62m	South West
	LIME/CEMENT MERCHANTS (L490)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale	323385	Premise Match	62m	South West
	PAINT,VARNISH,OILS/COLOUR MERCHANTS (P074)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale	346218	Premise Match	62m	South West
	PAINTERS' SUPPLIES/REQUISITES (P100)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale	346541	Premise Match	62m	South West
	PLUMBERS' SUPPLIES (P612)	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale	350282	Premise Match	62m	South West
	TOOL DEALERS-RETAIL	Hardware & General Supplies Ltd., 702 Pittwater Rd., Brookvale	369444	Premise Match	62m	South West
14	TYRE & TUBE MANUFACTURERS &/OR DISTRIBUTORS	Tyre Wholesalers (A'sia.) Pty. Ltd., 76 Winbourne Rd., Brookvale, 2100	371645	Premise Match	62m	South
15	ENGINEERS-ELECTRICAL (E570)	Matthew Hall (Pty.) Ltd., 68 Winbourne Rd., Brookvale, 2100	298223	Premise Match	65m	South
	PIPE BENDERS &/OR FABRICATORS(P396)	Matthew Hall (Pty.) Ltd., 68 Winbourne Rd., Brookvale, 2100	348962	Premise Match	65m	South
16	PRODUCE MERCHANTS-GRAIN & SEED-RETAIL (P854)	Brookvale Produce Store., 66 Winbourne Rd., Brookvale	352961	Premise Match	68m	South
	MOTOR GARAGES & ENGINEERS(M6S6)	Harvey, G. & J., 66 Winbourne Rd., BROOKVALE	337993	Premise Match	68m	South
	WELDERS-ELECTRIC &/OR OXY	Harvey, G.& J., 66 Winbourne Rd., Brookvale	373702	Premise Match	68m	South

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
16	FRUITERERS/GREENGROCERS (F640)	Potatoes Incorporated Pty. Ltd., 66 Winbourne Rd., Brkvle	307769	Premise Match	68m	South
17	RADIO &/OR TELEVISION SALES & SERVICEMEN (R090)	North Manly Radio-Electric Pty. Ltd., 533 Pittwater Rd., Brookvale	354437	Premise Match	68m	South East
	PHOTOGRAPHIC DEVELOPING,PRINTING/COLOURING SERVICES (P288)	Photola Pty. Ltd., 533 Pittwater Rd., Brookvale, 2100	348178	Premise Match	68m	South East
	AUCTIONEERS-GENERAL (A620)	Rourke, Basil Pty. Ltd., 533 Pittwater Rd.	263699	Premise Match	68m	South East
	REAL ESTATE AGENTS/VALUERS (R205)	Rourke, Basil Pty. Ltd., 533 Pittwater Rd., BROOKVALE	355980	Premise Match	68m	South East
18	CLOTHING MFRS. &/OR W/SALERS. - SPORTSWEAR	Edwards D 12 Gulliver Rd., Brookvale	283611	Premise Match	75m	West
	CLOTHING MFRS. &/OR W/SALERS. - DRESSING GOWNS.	Edwards, D., 12 Guliver Rd., Brookvale	282344	Premise Match	75m	West
	CLOTHING MFRS. &/OR W/SALERS. - BABY &/OR CHILDRENS WEAR	Edwards, D., 12 Gulliver Rd., Brookvale	282152	Premise Match	75m	West
	CLOTHING MFRS. &/OR W/SALERS. - LADIES FROCKS &/OR SUITS.	Edwards, D., 12 Gulliver Rd., Brookvale	282921	Premise Match	75m	West
	CLOTHING MFRS. &/OR W/SALERS. - WATERPROOF	Edwards, D., 12 Gulliver Rd., Brookvale	283883	Premise Match	75m	West
	CLOTHING MFRS. &/OR W'SALERS - LADIES' COATS & COSTUMES	Edwards, D., 12 Gulliver Rd., Brookvale	282752	Premise Match	75m	West
19	DELICATESSENS (D080)	Alpine Delicatessen., 698 Pittwater Rd., Brookvale	287098	Premise Match	87m	South West
	FANCY GOODS W'SALERS (F060)	Kendrew Distributors Pty. Ltd., 698 Pittwater Rd., Brookvale, 2100	302148	Premise Match	87m	South West
20	BUILDERS & CONTRACTORS (B800)	Philipot, R.D. & A.J., 30 Federal Pde., Brookvale	270315	Premise Match	87m	North East
21	SURVEYORS-LAND	Alexander, K.W., 694 Pittwater Rd., Brookvale	366383	Premise Match	93m	South West
	STATIONERS-RETAIL (S516)	Brookvale Arcade Stationer, 694 Pittwater Rd., Brookvale	364438	Premise Match	93m	South West
	TOY DEALERS-RETAIL	Brookvale Arcade Stationer, 694 Pittwater Rd., Brookvale	369988	Premise Match	93m	South West
	BOOKSELLERS-RETAIL	Brookvale Arcade Stationer., 694 Pittwater Rd., Brookvale	268312	Premise Match	93m	South West
	CHEMISTS-PHARMACEUTICAL	Brookvale Pharmacy., 694 Pittwater Rd., Brookvale	280123	Premise Match	93m	South West
	TRAVEL AGENCIES/BOOKING OFFICES(T645)	Brookvale Travel Consultants, 696 Pittwater Rd., Brookvale	371010	Premise Match	93m	South West
	CLOTHING MFRS. &/OR W/SALERS. - SPORTSWEAR	Shannon Productions Pty. Ltd., 694 Pittwater Rd., Brookvale	283710	Premise Match	93m	South West
	SIGN MANUFACTURERS (S317)	Styrofoam Sign Manufacturing Co., 694 Pittwater Rd., Brookvale	361563	Premise Match	93m	South West
	BLIND MFRS.-CANVAS & AWNING (B400)	Warringah Blind Factory., 694 Pittwater Rd., Brookvale	267266	Premise Match	93m	South West
	BLIND MFRS.-HOLLAND (B405)	Warringah Blind Factory., 694 Pittwater Rd., Brookvale	267303	Premise Match	93m	South West
	BLIND MFRS. &/OR SPECIALISTS (B410)	Warringah Blinds., Brookvale Arc., 694 Pittwater Rd., Brookvale	267190	Premise Match	93m	South West
22	BEAUTY SALONS &/OR LADIES' HAIRDRESSERS (B260)	Suzies Salon., 4 Chard Rd., Brookvale, 2100.	266673	Premise Match	96m	South

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
23	JOINERY MANUFACTURERS (J240)	Van-Laar, H. Pty. Ltd., 748 Pittwater Rd., Brookvale	321917	Premise Match	99m	South East
	JOINERY MERCHANTS (J250)	Van-Laar, H., 748 Pittwater Rd., Brookvale	321974	Premise Match	99m	South East
24	ALUMINIUM WINDOW FRAME MFRS. &/OR DISTS.	Aluminium Industries Pty. Ltd., 85 Winbourne Rd., Brookvale	261315	Premise Match	106m	South
	SHOP/OFFICE FITTERS (S276)	Aluminium Industries Pty. Ltd., 85 Winbourne Rd., Brookvale	361283	Premise Match	106m	South
25	ENGINEERS-PRECISION (E705)	Pantographic Die & Tool Co., 1 Mitchell Rd., Brookvale	300428	Premise Match	106m	South East
26	TELEVISION ANTENNAE MFRS./INSTALLERS (T151)	Channel Master (Aust.) Pty. Ltd., 752 Pittwater Rd., Brookvale, 2100	367622	Premise Match	110m	South East
	TELEVISION EQUIPMENT IMPORTS., MFRS. &/OR DISTS.	Channel Master (Aust.) Pty. Ltd., 752 Pittwater Rd., Brookvale, 2100	367641	Premise Match	110m	South East
	MARINE EQUIPMENT MFRS. &/OR DISTRIBUTORS (M134)	Ferris Bros. Pty. Limited., 752 Pittwater Rd., Brookvale	325567	Premise Match	110m	South East
	DIE CASTERS (D250)	Ferris Bros. Pty. Ltd, Industrial Division., 752 Pittwater Rd., Brookvale	289535	Premise Match	110m	South East
	GOLD EMBOSSING SPECIALISTS/GOLD STAMPERS (G410)	Ferris Bros. Pty. Ltd. Industrial Division., 752 Pittwater Rd., Brookvale	311483	Premise Match	110m	South East
	ELECTRONIC EQUIPMENT MFRS.&/OR DISTRIBUTORS (E355)	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	296371	Premise Match	110m	South East
	ENGINEERS-INDUSTRIAL (E655)	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	300048	Premise Match	110m	South East
	ENGINEERS-PRECISION (E705)	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	300398	Premise Match	110m	South East
	MOTOR CAR RADIO AERIAL MANUFACTURERS (M538)	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	335670	Premise Match	110m	South East
	MOTOR CAR RADIO MFRS./DISTS.	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	335681	Premise Match	110m	South East
	RADIO &/OR RADIOGRAM MFRS. (R035)	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	353960	Premise Match	110m	South East
	RADIO &/OR T.V. COMPONENT PARTS DEALERS (R060)	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	353993	Premise Match	110m	South East
	TELEVISION SET MANUFACTURERS/DISTRIBUTORS (T155)	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	367707	Premise Match	110m	South East
	ENGINEERS-ELECTRICAL (E570)	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale.	298152	Premise Match	110m	South East
	RADIO &/OR TELEVISION COMPONENT PARTS MFRS. (R065)	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale.	354066	Premise Match	110m	South East
	ELECTROPLATERS (E370)	Ferris Bros. Pty. Ltd., Industrial Division, 752 Pittwater Rd., Brookvale	296601	Premise Match	110m	South East
	PLASTIC GOODS MFRS. (P564)	Ferris Bros. Pty. Ltd., Industrial Division, 752 Pittwater Rd., Brookvale	349675	Premise Match	110m	South East
	PLASTIC MFRS. &/OR MOULDERS(P580)	Ferris Bros. Pty. Ltd., Industrial Division, 752 Pittwater Rd., Brookvale	349857	Premise Match	110m	South East
	RADIO-PORTABLE-CAR MFRS.	FERRIS RROS PTY. LIMITED., 752 PITTWATER ROAD., BROOKVALE, 2100	354732	Premise Match	110m	South East
	DOG & CAT BREEDERS (D430)	Korbach Kennels., 750 Pittwater Rd., Brookvale	289989	Premise Match	110m	South East
	TRANSFORMER MFRS. (T615)	Telecomponents Pty. Ltd, 752 Pittwater Rd, Brookvale	370851	Premise Match	110m	South East

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
26	ELECTRIC COIL-WINDING/TRANSFORMER SPECIALISTS (E080)	Telecomponents Pty. Ltd., 752 Pittwater Rd., Brookvale	293496	Premise Match	110m	South East
	BOAT, LAUNCH & YACHT ACCESSORIES MFRS&/OR DISTS. (B444)	Transceiver Corp of Aust. Pty. Ltd., 752 Pittwater Rd., Brookvale	267461	Premise Match	110m	South East
	RADIO TRANSMITTER MFRS. (R103)	Transceiver Corp. of Aust, Pty. Ltd., 752 Pittwater Rd., Brookvale	354673	Premise Match	110m	South East
	MARINE RADIO EQUIP. MFRS. (M140)	Transceiver Corp. of Aust. Pty. Ltd., 752 Pittwater Rd., Brookvale	325606	Premise Match	110m	South East
	RADIO TELEPHONE INSTALLATION SPECIALISTS	Transceiver Corp. of Aust. Pty. Ltd., 752 Pittwater Rd., Brookvale	354650	Premise Match	110m	South East
	STEREOTYPERS-METAL, PLASTIC, RUBBER	Tucker, A.R., 750 Pittwater Rd., Brookvale	365802	Premise Match	110m	South East
27	HEALTH CENTRES & CLINICS (H330)	Brookvale Baby Health Centre., 519 Pittwater Rd., Brookvale	315727	Premise Match	111m	South West
28	HABERDASHERY-RETAIL (H010)	Blanshard, E. D., 692 Pittwater Rd., Brookvale	313363	Premise Match	112m	South West
	MANCHESTER SPECIALISTS/RETAILERS (M085)	Blanshard, Ed., 692 Pittwater Rd., Brookvale	324540	Premise Match	112m	South West
	DUPLICATING &/OR TYPING SPEC.	Brookvale Typing & Duplicating Service., 692 Pittwater Rd., Brookvale	292665	Premise Match	112m	South West
	ACCOUNTANTS & AUDITORS (A040)	Lewis, A.B.K.& Co., 690 Pittwater Rd., Brookvale	258995	Premise Match	112m	South West
29	ALUMINIUM PRODUCTS MFRS. (A320)	Aluminium Industries Pty. Ltd., 81 Winbourne Rd., Brookvale	261221	Premise Match	115m	South
	CURTAIN WALL MFRS. &/OR DISTS.(C775)	Aluminium industries Pty. Ltd., 81 Winbourne Rd., Brookvale	286484	Premise Match	115m	South
	TYRE/TUBE DEALERS (T760)	Owen, Peter A.Pty. Ltd., 81-83 Winbourne Rd., Brookvale	371916	Premise Match	115m	South
	TYRE DEALERS, RETREADERS & VULCANIZERS	Owen, Peter A.Pty. Ltd., 81-83 Winbourne Rd., Brookvale.	371739	Premise Match	115m	South
30	RESTAURANTS (R320)	East India Restaurant, 688 Pittwater Rd., Brookvale	356957	Premise Match	124m	South West
	BEAUTY SALONS &/OR LADIES' HAIRDRESSERS (B260)	Evening Star Salon., 688 Pittwater Rd., Brookvale	265862	Premise Match	124m	South West
	TOY DEALERS-RETAIL	Joska, F., 688 Pittwater Rd., Brookvale	370116	Premise Match	124m	South West
	CHEMISTS-PHARMACEUTICAL	Re, J., 688 Pittwater Rd., Brookvale	281018	Premise Match	124m	South West
31	BOAT, LAUNCH & YACHT BUILDERS &/OR REPAIRERS	N.G.E Fibreglass Manufacturers, 54 Winbourne Rd., Brookvale	267575	Premise Match	124m	South East
	FIBREGLASS PRODUCTS MFRS. (MOULDING, FABRICATING, EXTRUSIONS, CONVERTING, Etc.)	N.G.E. Fibreglass Manufacturer., 54 Winbourne Rd., Brookvale	302460	Premise Match	124m	South East
	BOAT, LAUNCH & YACHT SALES & SERVICE (B457)	N.G.E. Fibreglass Manufacturers., 54 Winbourne Rd., Brookvale	267699	Premise Match	124m	South East
32	ROAD TRANSPORT SERVICES-N.S.W. (R385)	McFarlane, S., 64 Alfred Rd., Brookvale	357632	Premise Match	135m	North
33	CAFES, COFFEE LOUNGES, Etc. (C030)	Brookvale Tea & Coffee Shop., 686 Pittwater Rd., Brookvale	275401	Premise Match	136m	South West
34	MOTOR BODY REPAIRS/CONVERTERS(M496)	J. & C. Smash Repairs., 75 Winbourne Rd., Brookvale, 2100	335342	Premise Match	139m	South
	MOTOR PANEL BEATERS (M680)	J. & C. Smash Repairs., 75 Winbourne Rd., Brookvale, 2100	340146	Premise Match	139m	South

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
34	MOTOR PAINTERS (M672)	J. & C. Smash Repairs., 75 Winbourne Rd., Brookvale. 2100	339394	Premise Match	139m	South
	FURNITURE-KITCHEN UNITS & CABINETS-MANUFACTURERS &/OR WHOLESALERS	Kitchens By Crel Co., 75 Winbourne Rd., Brookvale	309675	Premise Match	139m	South
35	SPRAYERS-INDUSTRIAL (S461)	Bladen, C., 73 Winbourne Rd., Brookvale.2100	363775	Premise Match	142m	South
	EARTH-MOVING CONTRACTORS (E010)	Davis, Ron & Son Pty. Ltd., 73 Winbourne Rd., Brookvale, 2100	293125	Premise Match	142m	South
	WELDERS-ELECTRIC &/OR OXY	Davis, Ron & Son Pty. Ltd., 73 Winbourne Rd., Brookvale, 2100	373592	Premise Match	142m	South
	BATTERY CHARGING & TESTING EQUIPMENT MFRS(B185)	Klex Electronics Pty. Ltd., 73 Winbourne Rd., Brookvale	265188	Premise Match	142m	South
	ELECTRIC POWER SUPPLIES (E230)	Klex Electronics Pty. Ltd., 73 Winbourne Rd., Brookvale	294331	Premise Match	142m	South
	ELECTRONIC EQUIPMENT MFRS.&/OR DISTRIBUTORS (E355)	Klex Electronics Pty. Ltd., 73 Winbourne Rd., Brookvale	296401	Premise Match	142m	South
	ENGINEERS-ELECTRONIC (E575)	Klex Electronics Pty. Ltd., 73 Winbourne Rd., Brookvale	298371	Premise Match	142m	South
36	CAKE SHOPS & PASTRYCOOKS (C045)	Brookvale Home Made Pastries., 684 Pittwater Rd., Brookvale	276378	Premise Match	142m	South West
37	BUTCHERS-RETAIL (B860)	Drake, L.W.B., 680 Pittwater Rd., Brookvale	273498	Premise Match	148m	South West

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1970 Business Directory Records Road or Area Matches

Records from the 1970 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
38	MOTOR CAR/TRUCK DEALERS-NEW/USED (M520)	A. J. C. Motors Brookvale Pty. Ltd., Pittwater Rd., Brookvale	335791	Road Match	0m
	ASSOCIATIONS & SOCIETIES (A612)	Brookvale Agricultural Show Society., Pittwater Rd., Brookvale	262756	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL,OIL,Etc.	Ensign Service Station., Pittwater Rd., BROOKVALE	341031	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL,OIL,Etc.	Fisher Motors Pty. Ltd., 467 Pittwater Rd., BROOKVALE	341117	Road Match	0m
	POTATO CRISP MFRS. (P660)	General Foods Corporation Pty. Ltd., 469 Pittwater Rd., Brookvale.	351112	Road Match	0m
	BEAUTY SALONS &/OR LADIES' HAIRDRESSERS (B260)	Hanks, P Salon., Pittwater Rd., Brookvale	265971	Road Match	0m
	TILE MFRS. &/OR DISTS.-FLOOR & WALL	Harrison Tiles Pty. Ltd., 457 Pittwater Rd., Brookvale	368682	Road Match	0m
	ELECTRICAL CONTRACTORS-LICENSED (E300)	L. &T. Electric Pty. Ltd., Pittwater Rd., BROOKVALE	294804	Road Match	0m
	ELECTRICAL CONTRACTORS-LICENSED (E300)	L. &T. Electric Pty. Ltd., Pittwater Rd., BROOKVALE	295307	Road Match	0m
	CLOTHING MFRS. &/OR W/SALERS. - COLLARS &/OR TIES.	Madeline Mac's., Pittwater Rd., Brookvale	282326	Road Match	0m

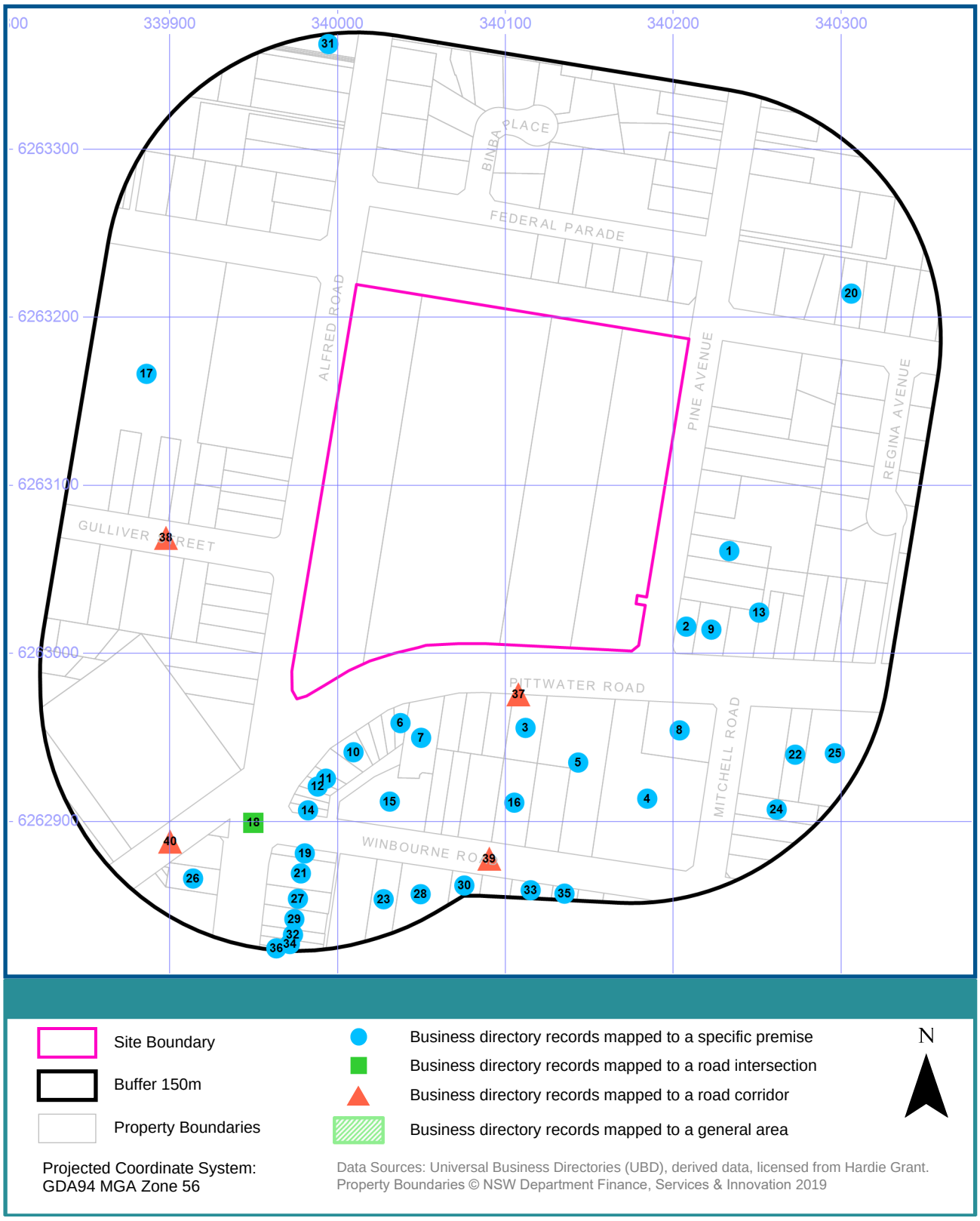
Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
38	RADIO &/OR TELEVISION SALES & SERVICEMEN (R090)	Photronic., 513-515 Pittwater Rd., Brookvale	354458	Road Match	0m
39	CLOTHING MFRS. &/OR W'SALERS-GENERAL (C438)	Edward, D., Gulliver Rd., Brookvale	282426	Road Match	24m
40	GIFT SHOPS (G180)	Art & Giftwares., Old Pittwater Rd., Brookvale, 2100	310671	Road Match	75m
	PHOTOGRAPHIC EQUIPMENT MFRS. &/OR DISTS. (P294)	Camera Distributors Pty. Ltd., Old Pittwater Rd., Brookvale	348264	Road Match	75m
	PHOTOGRAPHIC EQUIPMENT MFRS. &/OR DISTS. (P294)	Fotek Corp. Pty. Ltd., Old Pittwater Rd., Brookvale	348271	Road Match	75m
	DOOR MANUFACTURERS (D480)	Halco Products Pty. Ltd., Old Pittwater Rd., Brookvale	290133	Road Match	75m
	METAL PRESSERS/STAMPERS (M268)	Halco Products Pty. Ltd., Old Pittwater Rd., Brookvale	329945	Road Match	75m
	ADDING &/OR CALCULATING MACHINE MFRS. &/OR DIST.	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	259653	Road Match	75m
	CHEMISTS' SUPPLIERS & SUNDRYMEN (C289)	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	279650	Road Match	75m
	COPYING MACHINES-MFRS. &/OR DISTS. (C672)	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	285839	Road Match	75m
	EXPORTERS (E835)	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	301640	Road Match	75m
	IMPORTERS (I200)	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	318365	Road Match	75m
	PHOTOGRAPHIC EQUIPMENT MFRS. &/OR DISTS. (P294)	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	348277	Road Match	75m
	PHOTOGRAPHIC SUPPLIES (P300)	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	348349	Road Match	75m
	PHOTOGRAPHIC/MOVIE CAMERA REPAIRS (P296)	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	348417	Road Match	75m
	PICTURE THEATRE EQUIPMENT &/OR SUPPLIES (P348)	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	348801	Road Match	75m
	RECORDING EQUIPMENT MFRS., IMPORTS. &/OR DISTS	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	356354	Road Match	75m
	ROOM HEATERS-ELECTRIC-MFRS. &/OR DISTS. (R420)	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	357913	Road Match	75m
	OFFICE EQUIPMENT MFRS./DISTRIBUTORS	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale.	344690	Road Match	75m
	PHOTO COPYING EQUIPMENT MFRS. &/OR DISTS. (P253)	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale.	347681	Road Match	75m
	PHOTOGRAPHIC EQUIPMENT DEALERS &/OR IMPORTERS (P292)	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale.	348219	Road Match	75m
	ELECTRIC FAN MANUFACTURERS &/OR DISTRIBUTORS (E105)	Hanlmex Pty. Ltd., Old Pittwater Rd., Brookvale	293586	Road Match	75m
	PRINTERS-LETTERPRESS (P806)	Vale Press Pty. Ltd., Old Pittwater Rd., Brookvale	352395	Road Match	75m
	STATIONERS-WHOLESALE (S519)	Vale Press Pty. Ltd., Old Pittwater Rd., Brookvale, 2100	364967	Road Match	75m

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1965 Business Directory Records



Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1965 Business Directory Records
Premise or Road Intersection Matches

Records from the 1965 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	Builders & Contractors - (M.M.B.A.)	Brown, G. & K., 5 Pine Ave. Brookvale	54556	Premise Match	20m	East
2	Insurance Agents	Hawke, C. H. Pty. Ltd., 527 Pittwater Rd., Brookvale	104307	Premise Match	20m	South East
	Real Estate Agents/Valuers	Hawks, C. H. Pty. Ltd., 527 Pittwater Rd. Brookvale	139024	Premise Match	20m	South East
3	Plumbers, Gasfitters/Drainlayers	Grogan, G. W., 732 Pittwater Rd., Brookvale	134454	Premise Match	29m	South
4	Printers - Lithographic	Prior Press Pty. Ltd., 2 Mitchell Rd., Brookvale	136522	Premise Match	29m	South East
5	Local Bodies	Warringah Shire Council., 734 Pittwater Rd., Brookdale	108350	Premise Match	29m	South
6	Real Estate Agents/Valuers	Beard, Alan., 722 Pittwater Rd. Brookvale	139019	Premise Match	30m	South
	SURGICAL APPLIANCE MFRS./DIST.	Manly Warringah Surgical Supplies, 718 Pittwater Rd., Brookvale	149207	Premise Match	30m	South
	SURGICAL BELTS/STOCKINGS SPECIALISTS	Manly Warringah Surgical Supplies, 718 Pittwater Rd., Brookvale	149227	Premise Match	30m	South
	Medical Supplies	Manly-Warringah Surgical Supplies, 722 Pittwater Rd., Brookvale	113018	Premise Match	30m	South
	Sanitaryware Retailers	McManus, D. & Sons Pty. Ltd., 722 Pittwater Rd., Brookvale	142345	Premise Match	30m	South
7	SIGNWRITERS	Fitzsimmons, Al., 724 Pittwater Rd., Brookvale	144869	Premise Match	31m	South
	Painters, Paperhangers/Decorators	Fitzsimons, A. L., 724 Pittwater Rd., Brookvale	131147	Premise Match	31m	South
8	Motor Garages & Engineers	Total Service Station, 738 Pittwater Rd. Brookvale	122318	Premise Match	31m	South East
9	Funeral Directors	Gregory & Carr (Brookvale) Pty. Ltd., 529 Pittwater Rd. Brookvale	92502	Premise Match	32m	South East
10	Tyre Dealers, Retreaders & Vulcanizers	Warringah Tyre Service Pty. Ltd, 714 Pittwater Rd, Brkvle	154795	Premise Match	33m	South West
	Tyre/Tube Dealers	Warringah Tyre Service Pty. Ltd., 714-716 Pittwater Rd., Brookvale	154602	Premise Match	33m	South West
	Battery Distributors	Warringah Tyre Service., 714-716 Pittwater Rd., Brookvale	50090	Premise Match	33m	South West
11	Armature Winders	McCahill, J. F. Electric Co., 710 Pittwater Rd., Brookvale	46913	Premise Match	42m	South West
	Electric Motor Winding/Rewinding Specialists	McCahill, J. F. Electric Co., 710 Pittwater Rd., Brookvale	77933	Premise Match	42m	South West
12	Blind Mfrs. &/or Specialists	Controilte Blind & Awning Centre., 706-708 Pittwater Rd., Brookvale	51782	Premise Match	46m	South West
	Fly Screens, Doors/Windows - Manufacturers	Controlite Blind & Awning Centre, 706 Pittwater Rd., Brookvale	88086	Premise Match	46m	South West
	Awnings - Aluminum - Mfrs.	Controlite Blind & Awning Centre., 706 Pittwater Rd., Brookvale	48658	Premise Match	46m	South West
	Blind Mfrs. - Holland	Controlite Blind & Awning Centre., 706-708 Pittwater Rd., Brookvale	51736	Premise Match	46m	South West

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
12	Blind Mfrs. - Venetian	Controlite Blind & Awning Centre., 706-708 Pittwater Rd., Brookvale	51861	Premise Match	46m	South West
	Lawn Mower Sales/Service	Victa & Sports Centre, 708 Pittwater Rd., Brookvale	107378	Premise Match	46m	South West
13	Boat, Launch & Yacht Brokers	Smith's Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale	52017	Premise Match	50m	South East
	Boat, Launch & Yacht Builders & Repairers	Smith's Marine Equipment Pty. Ltd., 531 Pittwater Rd., Brookvale	52124	Premise Match	50m	South East
14	Builders' Equipment Hirers	Hardware & General Supplies Ltd., 702-704 Pittwater Rd., Brookvale	55754	Premise Match	62m	South West
	Builders' Hardware - Mfrs. &/or Dists.	Hardware & General Supplies Ltd., 702-704 Pittwater Rd., Brookvale	55837	Premise Match	62m	South West
	Cement - Portland - Mfrs. &/or Dists.	Hardware & General Supplies Ltd., 702-704 Pittwater Rd., Brookvale	63770	Premise Match	62m	South West
	Lime/Cement Merchants	Hardware & General Supplies Ltd., 702-704 Pittwater Rd., Brookvale	107923	Premise Match	62m	South West
	Hardware Dealers &/or Ironmongers	Hardware & General Supplies Pty. Ltd., 702-704 Pittwater Rd. Brookvale	99092	Premise Match	62m	South West
	Builders' Suppliers	Hardware & General Supplies Pty. Ltd., 702-704 Pittwater Rd., Brookvale	56148	Premise Match	62m	South West
	Concrete Mixer Hire Services	Hardware & General Supplies Pty. Ltd., 702-704 Pittwater Rd., Brookvale	69849	Premise Match	62m	South West
	Paint, Varnish, Oils/Colour Merchants	Hardware & General Supplies Pty. Ltd., 702-704 Pittwater Rd., Brookvale	130877	Premise Match	62m	South West
	TOOL DEALERS --- RETAIL	Hardware & General Supplies Pty. Ltd., 702-704 Pittwater Rd., Brookvale	152367	Premise Match	62m	South West
15	Motor Towing Services	Nuco Spraying Co., 76 Winbourne Rd., Brookvale	127126	Premise Match	62m	South
16	Produce Merchants - Grain & Seed - Retail	Brookvale Produce Store., 66 Winbourne Rd., Brookvale	136728	Premise Match	68m	South
	Motor Garages & Engineers	Harvey, G. & J., 66 Winbourne Rd. Brookvale	122314	Premise Match	68m	South
	Welders - Electric &/or Oxy	Harvey, G. & J., 66 Winbourne Rd., Brookvale	156509	Premise Match	68m	South
	Fruiterers & Greengrocers	Potatoes Incorporated Pty. Ltd., 66 Winbourne Rd., Brkvle	91956	Premise Match	68m	South
	Fruit, Vegetable, Potato & Produce Agents &/or W/salers	Potatoes Incorporated Pty. Ltd., 66 Winbourne Rd., Brookvale	90627	Premise Match	68m	South
	Produce Merch. - W'Sale	Potatoes Incorporated Pty. Ltd., 66 Winbourne Rd., Brookvale	136947	Premise Match	68m	South
	Produce Merchants - Grain & Seed - Retail	Potatoes Incorporated Pty. Ltd., 66 Winbourne Rd., Brookvale	136830	Premise Match	68m	South
	Seed Merchants	Potatoes incorporated Pty. Ltd., 66 Winbourne Rd., Brookvale	143601	Premise Match	68m	South
17	Clothing Mfrs. &/or W'salers - Sportswear	Edwards D., 12 Gulliver Rd., Brookvale	68315	Premise Match	75m	West
	Clothing Mfrs. &/or W'salers - Baby &/or Children's Wear	Edwards, D., 12 Gulliver Rd. Brookvale	66715	Premise Match	75m	West
	Clothing Mfrs. &/or W'salers - Ladies' Dresses & Gowns	Edwards, D., 12 Gulliver Rd., Brookvale	67563	Premise Match	75m	West
	Clothing Mfrs. &/or W'salers - Waterproof	Edwards, D., 12 Gulliver Rd., Brookvale	68617	Premise Match	75m	West
18	Plumbers' Supplies	Hardware & General Supplies Pty. Ltd., Cnr. Pittwater & Winbourne Rds., Brookvale	134996	Road Intersection	78m	South West
19	DELICATESSENS	Melanis' Delicatessen, 698 Pittwater Rd., Brookvale	72440	Premise Match	87m	South West
20	Builders & Contractors	Phillpot, R. D. & A. J., 30 Federal Pde., Brookvale	55547	Premise Match	87m	North East
21	Frock & Coat Salons	"Anita", 694b Pittwater Rd., Brookvale	89690	Premise Match	93m	South West
	SURVEYORS—LAND	Alexander, K. W., 694 Pittwater Rd., Brookvale	149287	Premise Match	93m	South West
	Outfitters - Ladies' & Children's	Anita, ,694b Pittwater Rd, Brookvale	130188	Premise Match	93m	South West

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
21	BOOKSELLERS---RETAIL	Brookvale Arcade Stationer, 694 Pittwater Rd., Brookvale	52714	Premise Match	93m	South West
	STATIONERS—RETAIL	Brookvale Arcade Stationer, 694 Pittwater Rd., Brookvale	147381	Premise Match	93m	South West
	TOY DEALERS---RETAIL	Brookvale Arcade Stationer, 694 Pittwater Rd., Brookvale	152840	Premise Match	93m	South West
	Chemists - Pharmaceutical	Brookvale Pharmacy, 694 Pittwater Rd., Brookvale	64777	Premise Match	93m	South West
	Animal & Bird Food Supplies	Dog House (The)Brookvale Arc.., 694 Pittwater Rd., Brookvale	46253	Premise Match	93m	South West
	Dentists	Hagen, Noel M., 694 Pittwater Rd., Brookvale	73392	Premise Match	93m	South West
	Clothing Mfrs. &/or W'salers - Sportswear	Shannon Productions Pty. Ltd., 694 Pittwater Rd., Brookvale	68412	Premise Match	93m	South West
	Hairdressers (Gent.'s)/Tobacconists	Springer, J., 694 Pittwater Rd., Brookvale	98534	Premise Match	93m	South West
	SIGN MANUFACTURERS	Styrofoam Sign Manufacturing Co., 694 Pittwater Rd., Brookvale	144829	Premise Match	93m	South West
	Blind Mfrs. - Canvas & Awning	Warringah Blind Factory., 694 Pittwater Rd., Brookvale	51724	Premise Match	93m	South West
	Blind Mfrs. - Holland	Warringah Blind Factory., 694 Pittwater Rd., Brookvale	51765	Premise Match	93m	South West
	Blind Mfrs. &/or Specialists	Warringah Blinds., Brookvale Arc., 694 Pittwater Rd., Brookvale	51821	Premise Match	93m	South West
22	Joinery Manufacturers	Van-Laar, H. Pty. Ltd., 748 Pittwater Rd., Brookvale	106600	Premise Match	99m	South East
	Joinery Merchants	Van-Laar, H., 748 Pittwater Rd., Brookvale	106669	Premise Match	99m	South East
23	Aluminium Manufacturers - Sheets, Strips, Etc.	Aluminium Industries Pty. Ltd., 85 Winbourne Rd., Brookvale	45970	Premise Match	106m	South
	Aluminium Products Mfrs.	Aluminium Industries Pty. Ltd., 85 Winbourne Rd., Brookvale	45987	Premise Match	106m	South
	Aluminium Window Frame Mfrs.	Aluminium Industries Pty. Ltd., 85 Winbourne Rd., Brookvale	46068	Premise Match	106m	South
	Curtain Wall Mfrs. &/or Dists.	Aluminium Industries Pty. Ltd., 85 Winbourne Rd., Brookvale	71209	Premise Match	106m	South
	SHOP/OFFICE FITTERS	Aluminium Industries Pty. Ltd., 85 Winbourne Rd., Brookvale	144551	Premise Match	106m	South
24	Engineers -Precision	Pantographic Die & Tool Co., 1 Mitchell Rd., Brookvale	83650	Premise Match	106m	South East
25	TELEVISION ANTENNAE MFRS./ INSTALLERS	Channel Master Pty. Ltd., 752 Pittwater Rd., Brookvale	150471	Premise Match	110m	South East
	TELEVISION EQUIPMENT IMPORTS., MFRS. &/OR DISTS.	Channel Master Pty. Ltd., 752 Pittwater Rd., Brookvale	150498	Premise Match	110m	South East
	Radio - Portable - Car Mfrs.	Ferris Bros Pty. Ltd., 752 Pittwater Rd., Brookvale	137941	Premise Match	110m	South East
	Electroplaters	Ferris Bros. Pty. Ltd. Industrial Division, 752 Pittwater Rd., Brookvale	80179	Premise Match	110m	South East
	Plastic Goods Manufacturers	Ferris Bros. Pty. Ltd. Industrial Division, 752 Pittwater Rd., Brookvale	133907	Premise Match	110m	South East
	Plastic Manufacturers &/or Moulders	Ferris Bros. Pty. Ltd. Industrial Division., 752 Pittwater Rd., Brookvale	134072	Premise Match	110m	South East
	Marine Equipment Mfrs. &/or Distributors	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	110225	Premise Match	110m	South East
	Motor Car Radio Aerial Manufacturers	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	121154	Premise Match	110m	South East
	Motor Car Radio Mfrs./Dists.	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	121164	Premise Match	110m	South East
	SPORTS GOODS MFRS.	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	146350	Premise Match	110m	South East
	Die Casters	Ferris Bros. Pty. Ltd., Industrial Division, 752 Pittwater Rd., Brookvale	74183	Premise Match	110m	South East
	Dog Breeders	Korbach Kennels, 750 Pittwater Rd., Brookvale	74634	Premise Match	110m	South East

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
25	Electric Coil-Winding/Transformer Specialists	Telecomponents Pty. Ltd., 752 Pittwater Rd., Brookvale	77286	Premise Match	110m	South East
	Radio &/or Television Component Parts Mfrs.	Telecomponents Pty. Ltd., 752 Pittwater Rd., Brookvale	137832	Premise Match	110m	South East
	Transformer Mfrs.	Telecomponents Pty. Ltd., 752 Pittwater Rd., Brookvale	153704	Premise Match	110m	South East
	STEREO CUTTERS—RUBBER	Tucker Ross, 750 Pittwater Rd., Brookvale	148639	Premise Match	110m	South East
	STEREOTYPERS—METAL, PLASTIC, RUBBER	Tucker, A. R., 750 Pittwater Rd., Brookvale	148664	Premise Match	110m	South East
26	Health Centres & Clinics	Brookvale Baby Health Centre, 519 Pittwater Rd., Brookvale	99844	Premise Match	111m	South West
27	Haberdashery - Retail	Blanshard, E. D., 692 Pittwater Rd., Brookvale	97502	Premise Match	112m	South West
	Dress Fabric Retailers	Blanshard, E. D., 692 Pittwater Rd., Brookvale.	75519	Premise Match	112m	South West
	Furnishing - Soft - Retail	Blanshard, E. D.,. 692 Pittwater Rd., Brookvale	92675	Premise Match	112m	South West
	Manchester Specialists/Retailers	Blanshard, Ed., 692 Pittwater Rd., Brookvale	109100	Premise Match	112m	South West
	Building Societies & Companies	Brookvale Co-op. Building Socy, Ltd., 690-692 Pittwater Rd., Brookvale	56505	Premise Match	112m	South West
	Business Agents &/or Brokers	Grace, A. Pty. Ltd., 690-692 Pittwater Rd., Brookvale	57524	Premise Match	112m	South West
	Insurance Agents	Grace, A. Pty. Ltd., 690-692 Pittwater Rd., Brookvale	104284	Premise Match	112m	South West
	ACCOUNTANTS & AUDITORS	Lewis, A. B. K. & Co., 690 Pittwater Rd., Brookvale	43897	Premise Match	112m	South West
	ACCOUNTANTS & AUDITORS	Sherley & Sherley, 690 Pittwater Rd., Brookvale	44166	Premise Match	112m	South West
28	Tyre Dealers, Retreaders & Vulcanizers	Owen, Peter A. Pty. Ltd., 81-83 Winbourne Rd., Brookvale	154757	Premise Match	115m	South
	Tyre/Tube Dealers	Owen, Peter A. Pty. Ltd., 81-83 Winbourne Rd., Winbourne	154555	Premise Match	115m	South
29	Second - Hand Dealers	Brookvale Opportunity Shop (Clothing)., 6 Rome Arc., 688 Pittwater Rd., Brookvale	143449	Premise Match	124m	South West
	Beauty Salons &/or Ladies Hairdressers	Evening Star Salon., 688 Pittwater Rd., Brookvale	50604	Premise Match	124m	South West
	Cafes, Tea Rooms, Coffee Lounges, Etc.	La Chaumiere Coffee Lounge, 1 Roma Arc., 688 Pittwater Rd., Brookvale	60492	Premise Match	124m	South West
	Real Estate Agents/Valuers	Manning, Thomas & Co., 5 Roma Arc., 688 Pittwater Rd. Brookvale	139025	Premise Match	124m	South West
	Insurance Agents	Manning, Thomas A Co., 688 Pittwater Rd., Brookvale	104408	Premise Match	124m	South West
	Chemists - Pharmaceutical	Re, John, 2 Roma Arc., 688 Pittwater Rd., Brookvale	65521	Premise Match	124m	South West
	Tailors-Ladies'/Gents	Roma Arcade Continental Tailoring, 7 Roma Arc., 688 Pittwater Rd., Brookvale	149733	Premise Match	124m	South West
30	Engineers - Fabricating	Winbourne Engineering Pty. Ltd., 79 Winbourne Rd., Brookvale	81909	Premise Match	134m	South
	Engineers - Structural	Winbourne Engineering Pty. Ltd., 79 Winbourne Rd., Brookvale	84454	Premise Match	134m	South
	Welders - Electric &/or Oxy	Winbourne Engineering Pty. Ltd., 79 Winbourne Rd., Brookvale	156932	Premise Match	134m	South
31	Road Transport Services - N.S.W.	McFarlane, S., 64 Alfred Rd., Brookvale	140987	Premise Match	135m	North
32	Cafes, Tea Rooms, Coffee Lounges, Etc.	Brookvale Tea & Coffee Shop., 686 Pittwater Rd., Brookvale	60165	Premise Match	136m	South West
33	Engineers General &/or Mfrg. &/or Mechanical	B. R. H. Engineering., Rear 75 Winbourne Rd., Brookvale	82118	Premise Match	139m	South
	Welders - Electric &/or Oxy	B.R.H. Engineering., Rear 75 Winbourne Rd., Brookvale	156248	Premise Match	139m	South
	Fluorescent Lighting Spec.	Brookvale Metal Products Pty. Ltd., 75 Winbourne Rd., Brkvle	87998	Premise Match	139m	South

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
33	Fluorescent Lighting Equipment Manufacturers	Brookvale Metal Products Pty. Ltd., 75 Winbourne Rd., Brookvale	87950	Premise Match	139m	South
	Metal Fittings Mfrs.	Brookvale Metal Products Pty. Ltd., 75 Winbourne Rd., Brookvale	114219	Premise Match	139m	South
	Metal Pressers/Stampers	Brookvale Metal Products Pty. Ltd., 75 Winbourne Rd., Brookvale	114385	Premise Match	139m	South
	Plastic Manufacturers &/or Moulders	Brookvale Metal Products Pty. Ltd., 75 Winbourne Rd., Brookvale	134042	Premise Match	139m	South
	Sheet Metal Workers	Brookvale Metal Products Pty. Ltd., 75 Winbourne Rd., Brookvale	143860	Premise Match	139m	South
	Fly Screens, Doors/Windows - Manufacturers	Pilkington & Skinner, 75 Winbourne Rd., Brookvale	88118	Premise Match	139m	South
	Roll Forming	Pilkington, & Skinner Pty. Ltd., 75 Winbourne Rd., Brookvale	141063	Premise Match	139m	South
34	Cake Shops & Pastrycooks	Brookvale Home Made Pastries., 684 Pittwater Rd. Brookvale	61081	Premise Match	142m	South West
35	Die & Press Tool Makers	Mardon Engineering Pty. Ltd., 73 Winbourne Rd., Brookvale	74115	Premise Match	142m	South
	Engineers General &/or Mfrg. &/or Mechanical	Mardon Engineering Pty. Ltd., 73 Winbourne Rd., Brookvale	82624	Premise Match	142m	South
	Packaging/Packing Specialist	Mardon Engineering Pty. Ltd., 73 Winbourne Rd., Brookvale	130300	Premise Match	142m	South
	Plastic Die/Mould Manufacturers	Mardon Engineering Pty. Ltd., 73 Winbourne Rd., Brookvale	133697	Premise Match	142m	South
	Plastic Manufacturers &/or Moulders	Mardon Engineering Pty. Ltd., 73 Winbourne Rd., Brookvale	134103	Premise Match	142m	South
	TOOL MAKERS	Mardon Engineering Pty. Ltd., 73 Winbourne Rd., Brookvale	152563	Premise Match	142m	South
36	Butchers - Retail	Drake, L. W. B., 680 Pittwater Rd., Brookvale	58209	Premise Match	148m	South West
	Paint, Varnish, Oils/Colour Merchants	Punch's Brookvale Hardware, 682 Pittwater Rd., Brookvale	131012	Premise Match	148m	South West

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1965 Business Directory Records Road or Area Matches

Records from the 1965 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
37	Fluorescent Lighting Spec.	Allied Plastic Signs, 455 Pittwater Rd., Brookvale	87988	Road Match	0m
	Photographic Equipment Dealers &/or Importers	Champion Photographics Pty. Ltd., 455 Pittwater Rd., Brookvale	132589	Road Match	0m
	Photographic Equipment Manufacturers &/or Distributors	Champion Photographics Pty. Ltd., 455 Pittwater Rd., Brookvale	132650	Road Match	0m
	SPORTS GOODS MFRS.	McDonagh Surf Boards, 457 Pittwater Rd., Brookvale	146360	Road Match	0m
	SPORTS GOODS RETAILERS	McDonagh Surf Boards, 457 Pittwater Rd., Brookvale	146506	Road Match	0m
	SURFING EQUIPMENT MFRS.	McDonagh Surfboards, 457 Pittwater Rd., Brookvale	149184	Road Match	0m
	Beach Equipment Mfrs.	Surf Boards By McDonagh., 455 Pittwater Rd., Brookvale	50259	Road Match	0m
	SPORTS GOODS MFRS.	Surfboards by McDonagh, 455 Pittwater Rd., Brookvale	146387	Road Match	0m

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
37	SPORTS GOODS RETAILERS	Surfboards by McDonagh, 455 Pittwater Rd., Brookvale	146571	Road Match	0m
	SURFING EQUIPMENT MFRS.	Surfboards by McDonagh, 455 Pittwater Rd., Brookvale	149187	Road Match	0m
	Display Model Manufacturers &/or Suppliers	Vaughan Bros., 455 Pittwater Rd., Brookvale	74490	Road Match	0m
	Duplicating/Typing Specs.	Vaughan Bros., 455 Pittwater Rd., Brookvale	76588	Road Match	0m
	STATIONERS—COMMERCIAL	Vaughan Bros., 455 Pittwater Rd., Brookvale	147242	Road Match	0m
	STATIONERS—RETAIL	Vaughan Bros., 455 Pittwater Rd., Brookvale	147760	Road Match	0m
	Printers - Lithographic	Vaughan Bros.., 455 Pittwater Rd., Brookvale	136561	Road Match	0m
	Printers - Letterpress	Vaughan Douglas Pty. Ltd ., 455 Pittwater Rd., Brookvale	136361	Road Match	0m
	Printers - Lithographic	Vaughan Douglas Pty. Ltd., 455 Pittwater Rd., Brookvale	136562	Road Match	0m
	Publishers	Vaughan, Douglas Pty. Ltd., 455 Pittwater Rd., Brookvale	137365	Road Match	0m
38	Clothing Mfrs. &/or W'salers - General	Edward, D., Gulliver Rd., Brookvale	67046	Road Match	24m
	Clothing Mfrs. &/or W'salers - Ladies' Mantles	Edward, D., Gulliver Rd., Brookvale	67818	Road Match	24m
39	Plastic Manufacturers &/or Moulders	Plas-Tile Pty. Ltd., Winbourne Rd., Brookvale	134134	Road Match	64m
	Tile Mfrs. &/or Dists. - Floor & Wall	Plas-Tile Pty. Ltd., Winbourne Rd., Brookvale	151542	Road Match	64m
40	Photographic Equipment Manufacturers &/or Distributors	Fotex Corporation Pty. Ltd., Old Pittwater Rd., Brookvale	132658	Road Match	75m
	Door Manufacturers	Halco Products Pty. Ltd., Old Pittwater Rd., Brookvale	74781	Road Match	75m
	Metal Pressers/Stampers	Halco Products Pty. Ltd., Old Pittwater Rd., Brookvale	114438	Road Match	75m
	Photographic Equipment Dealers &/or Importers	Hanimax Pty. Ltd., Old Pittwater Rd., Brookvale	132606	Road Match	75m
	Manufacturers' Agents	Hanimex Pty. Ltd., 186 Old Pittwater Rd., Brookvale	109557	Road Match	75m
	Camera Manufacturers	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	61710	Road Match	75m
	Chemists' Suppliers & Sundrymen	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	65810	Road Match	75m
	Exporters	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	85009	Road Match	75m
	Importers	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	102590	Road Match	75m
	Merchants/Importers	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	113772	Road Match	75m
	Photographic Equipment Manufacturers &/or Distributors	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	132661	Road Match	75m
	Photographic Supplies	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	132743	Road Match	75m
	Photographic/Movie Camera Repairs	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	132696	Road Match	75m
	Picture Theatre Equipment &/or Supplies	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	133139	Road Match	75m
	TOILET PREPARATIONS MFRS.	Innoxa (England) Ltd., Old Pittwater Rd., Brookvale	152309	Road Match	75m
	Builders & Contractors - (M.M.B.A.)	Miles, R. C. "Gumbooya,", Old Pittwater Rd. Brookvale	54559	Road Match	75m
	Bitumen & Bituminous Products	Reely, T. S., Old Pittwater Rd., Brookvale	51595	Road Match	75m
	Bitumen Tar, Oils & Paint Mfrs.	Reely, T. S., Old Pittwater Rd., Brookvale	51626	Road Match	75m
	Printers - Letterpress	Vale Press Pty. Ltd., Old Pittwater Rd., Brookvale	136359	Road Match	75m
	Chemists - Industrial	Waratah Chemicals Pty. Ltd., 418 Old Pittwater Rd., Brookvale	64432	Road Match	75m

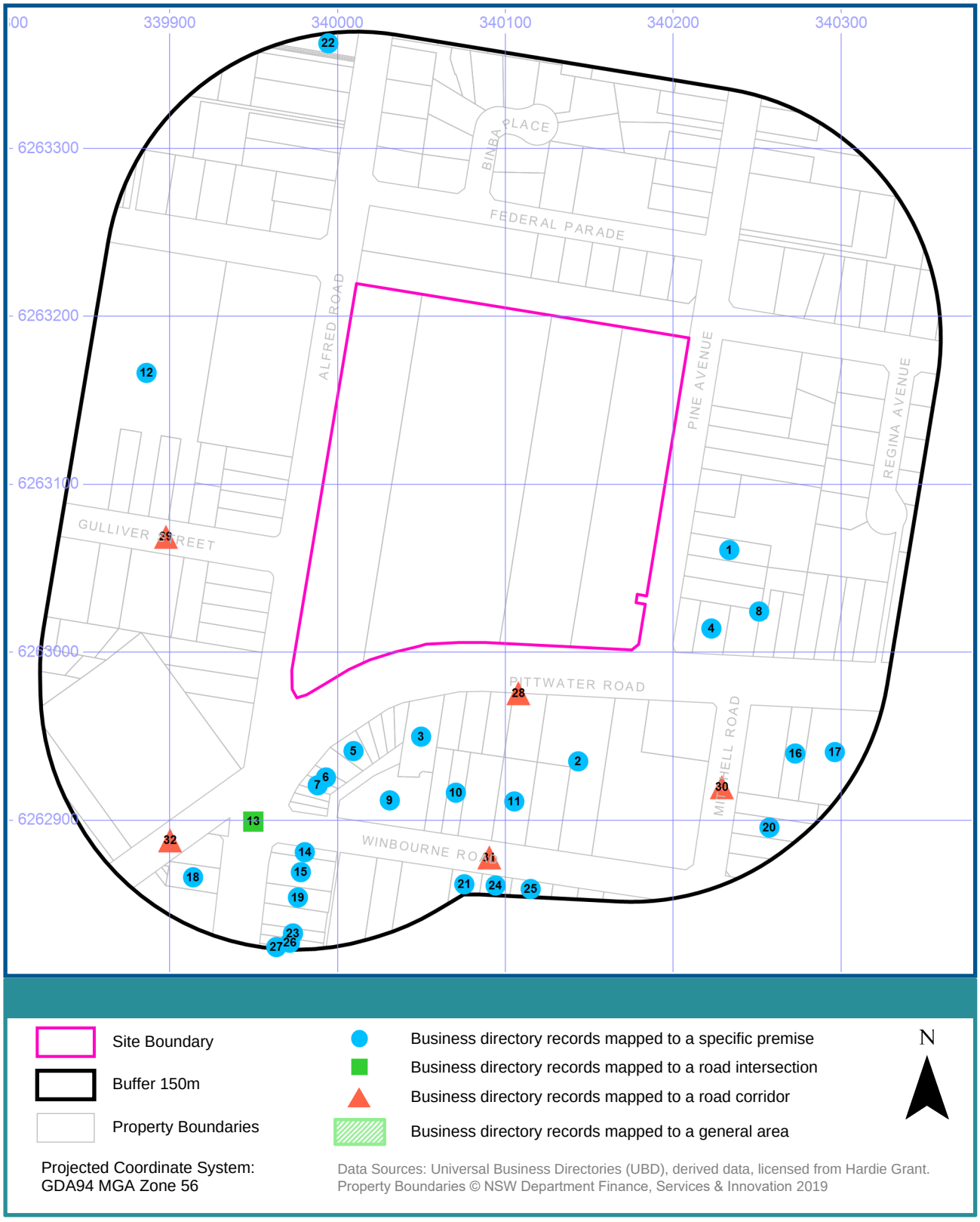
Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
40	Resin Producers &/Or Distributors	Waratah Chemicals Pty., Ltd., 418 Old Pittwater Rd., Brookvale	140311	Road Match	75m

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1961 Business Directory Records



Projected Coordinate System:
GDA94 MGA Zone 56

Data Sources: Universal Business Directories (UBD), derived data, licensed from Hardie Grant.
Property Boundaries © NSW Department Finance, Services & Innovation 2019

Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1961 Business Directory Records
Premise or Road Intersection Matches

Records from the 1961 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	BUILDERS & CONTRACTORS-(M.M.B.A.)	Brown, G. & K 5 Pine Ave, BROOKVALE	276877	Premise Match	20m	East
2	LOCAL BODIES	Warringah Shire Council, 734 Pittwater Rd., Brookvale	332140	Premise Match	29m	South
3	PAINTERS, PAPERHANGERS/DECORATORS	Fitzsimons, A. L., 724 Pittwater Rd., Brookvale	356062	Premise Match	31m	South
	PAINTERS, PAPERHANGERS/DECORATORS	Fitzsimonsal 724 Pittwater Rd., Brookvale	356064	Premise Match	31m	South
4	REAL ESTATE AGENTS/VALUERS	Meredith, L. A. B., 529 Pittwater Rd. BROOKVALE	365146	Premise Match	32m	South East
5	TYRE RETREAD./VULCANIZERS	Warringah Tyre Service Pty. Ltd., 714 Pittwater Rd., Brkvla	260127	Premise Match	33m	South West
	TYRE/TUBE DEALERS	Warringah Tyre Service Pty. Ltd., 714-716 Pittwater Rd., Brookvale	260344	Premise Match	33m	South West
	BATTERY DISTRIBUTORS	Warringah Tyre Service, 714-716 Pittwater Rd., Brookvale	271915	Premise Match	33m	South West
6	ARMATURE WINDERS	McCahill, J. F. Electric Co., 710 Pittwater Rd., Brookvale	268669	Premise Match	42m	South West
	ELECTRIC MOTOR WINDING/REWINDING SPECIALISTS	McCahill, J. F. Electric Co., 710 Pittwater Rd., Brookvale	300979	Premise Match	42m	South West
	LAWN MOWER REPAIRERS/SHARPENERS	McCahill, J. F. Electric Co., 710 Pittwater Rd., Brookvale	330802	Premise Match	42m	South West
	LAWN MOWER SALES/SERVICE	McCahill, J. F. Electric Co., 710 Pittwater Rd., Brookvale	330848	Premise Match	42m	South West
7	AWNINGS-DISTRIBUTORS	“Controlite” Blind & Awning Centre Factory & Showroom., 706-708 Pittwater Rd., Brookvale	270300	Premise Match	46m	South West
	BLIND MFRS. &/OR SPECIALISTS	Controlite Blind & Awning Centre, 706-708 Pittwater Rd., Brookvale	273272	Premise Match	46m	South West
	BLIND MFRS.-HOLLAND	Controlite Blind & Awning Centre, 706-708 Pittwater Rd., Brookvale	273391	Premise Match	46m	South West
	BLIND MFRS.-VENETIAN	Controllte Blind & Awning Centre, 706-708 Pittwater Rd., Brookvale	273433	Premise Match	46m	South West
	LAWN MOWER SALES/SERVICE	Rogan, Mick, 708 Pittwater Rd., Brookvale	330866	Premise Match	46m	South West
	SHIP CHANDLERS	Rogan, Mick, 708 Pittwater Rd., Brookvale	249588	Premise Match	46m	South West
	CHEMICAL CLOSET MFRS.	Sanitation Services of Australia Pty. Ltd., 708 Pittwater Rd., Brookvale	286399	Premise Match	46m	South West
	LAWN MOWER SALES/SERVICE	Victa & Sports Centre, 708 Pittwater Rd., Brookvale	330880	Premise Match	46m	South West
	SHIP CHANDLERS	Victa & Sports Centre, 708 Pittwater Rd., Brookvale	249595	Premise Match	46m	South West
	CYCLE DEALERS & ACCESSORIES	Victa & Sports Centre., 708 Pittwater Rd., Brookvale	294294	Premise Match	46m	South West
8	CARAVAN HIRERS	Brookvale Caravans, 531 Pittwater Rd., Brookvale	283864	Premise Match	50m	South East

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
8	CARAVAN DEALERS	Brookvale Caravans, 531, Pittwater Rd., Brookvale	283794	Premise Match	50m	South East
9	MOTOR PANEL BEATERS	Nuco Spraying Co 76 Winbourne Rd., Brookvale	349819	Premise Match	62m	South
	MOTOR PANEL BEATERS	Nuco Spraying Co., 76 Winbourne Rd., Brookvale	349820	Premise Match	62m	South
	MOTOR TRIMMERS	Nuco Spraying Co., 76 Winbourne Rd., Brookvale	352325	Premise Match	62m	South
10	CARRIERS & CARTAGE CONTRACTORS	Riddle, G. J., 70 Winbourne Rd., Brookvale	285250	Premise Match	64m	South
11	PRODUCE MERCHANTS-GRAIN & SEED-RETAIL	Brookvale Produce Store, 66 Winbourne Rd., Brookvale	362696	Premise Match	68m	South
	MOTOR GARAGES & ENGINEERS	Harvey, G. & J., 66 Winbourne Rd. BROOKVALE	347339	Premise Match	68m	South
	FRUITERERS/GREENGROCERS	Potatoes Incorporated Pty. Ltd., 66 Winbourne Rd., Brkvle	316011	Premise Match	68m	South
	FRUIT, VEGETABLE, POTATO & PRODUCE AGENTS &/OR W'SALERS	Potatoes Incorporated Pty. Ltd., 66 Winbourne Rd., Brookvale	314813	Premise Match	68m	South
	PRODUCE MERCH.-W'SALE	Potatoes Incorporated Pty. Ltd., 66 Winbourne Rd., Brookvale	362957	Premise Match	68m	South
	PRODUCE MERCHANTS-GRAIN & SEED-RETAIL	Potatoes Incorporated Pty. Ltd., 66 Winbourne Rd., Brookvale	362824	Premise Match	68m	South
	SEED MERCHANTS	Potatoes Incorporated Pty. Ltd., 66 Winbourne Rd., Brookvale	248939	Premise Match	68m	South
	WIRE PRODUCTS MFRS.	Rienits, B. G., 66 Winbourne Rd., Brookvale	263354	Premise Match	68m	South
	WIREWORKERS-GENERAL	Rienits, B. G., 66 Winbourne Rd., Brookvale	263465	Premise Match	68m	South
	MOTOR PANEL BEATERS	West N 66 Winbourne Rd., Brookvale	350065	Premise Match	68m	South
	MOTOR PAINTERS	West, N., 66 Winbourne Rd., Brookvale	349269	Premise Match	68m	South
	MOTOR PANEL BEATERS	West, N., 66 Winbourne Rd., Brookvale	350067	Premise Match	68m	South
12	CLOTHING MFRS. &/OR W'SALERS-BABY &/OR CHILDREN'S WEAR	Edwards, D., 12 Gulliver Rd., Brookvale	289027	Premise Match	75m	West
	CLOTHING MFRS. &/OR W'SALERS-LADIES' DRESSES & GOWNS	Edwards, D., 12 Gulliver Rd., Brookvale	290082	Premise Match	75m	West
	CLOTHING MFRS. &/OR W'SALERS-SPORTSWEAR	Edwards, D., 12 Gulliver Rd., Brookvale	290910	Premise Match	75m	West
13	PLUMBERS' SUPPLIES	Craig's Building Supplies, Cnr. Pittwater & Winbourne Rds., Brookvale	360958	Road Intersection	78m	South West
	TOOL DEALERS-RETAIL	Craigs Building Supplies, Cnr. Pittwater & Winbourne Rds., Brookvale	257992	Road Intersection	78m	South West
	HARDWARE DEALERS/IRONMONGERS	Craig's Building Supplies., Cnr. Pittwater & Winbourne Rds., BROOKVALE	323124	Road Intersection	78m	South West
14	GROCERS-RETAIL	Boland's Self-Service, 698 Pittwater Rd., Brookvale	320153	Premise Match	87m	South West
15	FROCK & COAT SALONS	"Anita," 694b Pittwater Rd., Brookvale	313906	Premise Match	93m	South West
	OUTFITTERS—LADIES' & CHILDREN'S	"Anlta," 694b Pittwater Rd., Brookvale	355198	Premise Match	93m	South West
	BEAUTY SALONS & LADIES' HAIRDRESSERS	"Evening Star" Salon, 694 Pittwater Rd., Brookvale	272153	Premise Match	93m	South West
	SURVEYORS-LAND	Alexander K W The Arcade, 694 Pittwater Rd., Brookvale	254596	Premise Match	93m	South West
	SURVEYORS-LAND	Alexander, K. W., 694 Pittwater Rd., Brookvale	254597	Premise Match	93m	South West

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
15	CHEMISTS-PHARMACEUTICAL	Brookvale Pharmacy, 694 Pittwater Rd., Brookvale	287378	Premise Match	93m	South West
	DISPLAY FITTINGS-MFRS. &/OR SUPPLIES	Eagle Studios, 696 Pittwater Rd., Brookvale	297175	Premise Match	93m	South West
	UMBRELLA MANUFACTURERS &/OR WHOLESALERS	Freeman, Dudley Pty. Ltd., 694 Pittwater Rd., Brookvale	260379	Premise Match	93m	South West
	UMBRELLA MANUFACTURERS &/OR WHOLESALERS-BEACH	Freeman, Dudley Pty. Ltd., 694 Pittwater Rd., Brookvale	260395	Premise Match	93m	South West
	WALKING STICK IMPORTERS &/OR DISTRIBUTORS	Freeman, Dudley Pty. Ltd., 694 Pittwater Rd., Brookvale	261166	Premise Match	93m	South West
	REAL ESTATE AGENTS/VALUERS	Goodland Real Estate Co. Pty. Ltd., 694 Pittwater Rd. BROOKVALE	365144	Premise Match	93m	South West
	AUCTIONEERS-REAL ESTATE	Goodland Real Estate Co. Pty. Ltd., 694 Pittwater Rd., Brookvale	270143	Premise Match	93m	South West
	DENTISTS	Hagen, Noel M., 694 Pittwater Rd., Brookvale	295986	Premise Match	93m	South West
	STATIONERS-RETAIL	Matthews, C. L., 694 Pittwater Rd., Brookvale	253031	Premise Match	93m	South West
	TOY DEALERS-RETAIL	Matthews, C. L., 694 Pittwater Rd., Brookvale	258564	Premise Match	93m	South West
	RADIO &/OR TELEVISION SALES & SERVICEMEN	McEwan, Ian, 694b Pittwater Rd. BROOKVALE	363977	Premise Match	93m	South West
	CLOTHING MFRS. &/OR WHOLESALERS-SPORTSWEAR	Shannon Productions Pty. Ltd., 694 Pittwater Rd., Brookvale	291206	Premise Match	93m	South West
	HAIRDRESSERS (GENT.'S) /TOBACCONISTS	Springer, J., 694 Pittwater Rd., Brookvale	322522	Premise Match	93m	South West
	MUSIC—SHEET, GRAMOPHONE RECORDS—DEALERS	van Cllburn Records, 694a Pittwater Rd., Brookvale	352921	Premise Match	93m	South West
	PHOTOGRAPHERS—PORTRAIT	Weiner, John, 694 Pittwater Rd., Brookvale	357814	Premise Match	93m	South West
16	JOINERY MERCHANTS	Van-Laar, H., 748 Pittwater Rd., Brookvale	330155	Premise Match	99m	South East
17	TELEVISION ANTENNAE MFRS./INSTALLERS	Channel Master Pty. Ltd., 752 Pittwater Rd., Brookvale	255883	Premise Match	110m	South East
	RADIO &/OR TELEVISION SALES & SERVICEMEN	Ferris Bros. Pty. Ltd., 752 Pittwater Rd. BROOKVALE	363975	Premise Match	110m	South East
	MOTOR CAR RADIO AERIAL MANUFACTURERS	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	344724	Premise Match	110m	South East
	MOTOR CAR RADIO SPECS.	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	344762	Premise Match	110m	South East
	TELEVISION ANTENNAE MFRS./INSTALLERS	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	255887	Premise Match	110m	South East
	TELEVISION EQUIPMENT IMPORTS., MFRS. &/OR DISTS.	Ferris Bros. Pty. Ltd., 752 Pittwater Rd., Brookvale	255935	Premise Match	110m	South East
	STEREO CUTTERS-RUBBER-SPECIALISTS	Tucker Ross 750 Pittwater Rd., Brookvale	253940	Premise Match	110m	South East
	STEREOTYPERS-METAL, PLASTIC, RUBBER	Tucker, A. R., 750 Pittwater Rd., Brookvale	253967	Premise Match	110m	South East
18	HEALTH CENTRES & CLINICS	Brookvale Baby Health Centre, 519 Pittwater Rd., Brookvale	323946	Premise Match	111m	South West
19	ADDING & CALCULATING MACHINES-DEALERS &/OR IMPS	Barker, P. E., 690 Pittwater Rd., Brookvale	266091	Premise Match	112m	South West

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
19	MERCERS—MEN'S & BOYS' OUTFITTERS	Blanshard, E. & D., 692 Pittwater Rd., Brookvale	336795	Premise Match	112m	South West
	DRAPERS-RETAIL	Blanshard, E. D., 692 Pittwater Rd., Brookvale	297766	Premise Match	112m	South West
	HABERDASHERY-RETAIL	Blanshard, E. D., 692 Pittwater Rd., Brookvale	321610	Premise Match	112m	South West
	DRESS FABRIC RETAILERS	Blanshard, E. D., 692 Pittwater Rd., Brookvale.	298385	Premise Match	112m	South West
	FURNISHINGS-SOFT-RETAIL	Blanshard, E. D., 692 Pittwater Rd., Brookvale.	316813	Premise Match	112m	South West
	BUILDING SOCIETIES & COMPANIES	Brookvale Co-op. Building Socy. Ltd., 690-692 Pittwater Rd., Brookvale	278578	Premise Match	112m	South West
	REAL ESTATE AGENTS/VALUERS	Grace, A., 690-692 Pittwater Rd. BROOKVALE	365145	Premise Match	112m	South West
	BUSINESS AGENTS &/OR BROKERS	Grace, A., 690-692 Pittwater Rd., Brookvale	279531	Premise Match	112m	South West
	RADIO &/OR TELEVISION SALES & SERVICEMEN	Jack, R. W., 690 Pittwater Rd. BROOKVALE	363976	Premise Match	112m	South West
	ELECTRICAL SUPPLIES/APPLIANCES RETAILERS	Jack, R. W., 690 Pittwater Rd., Brookvale	303220	Premise Match	112m	South West
	DUPLICATING/TYPING SPECS.	Warringah Business Services, 690-692 Pittwater Rd., Brookvale	299553	Premise Match	112m	South West
20	RADIO &/OR TELEVISION SALES & SERVICEMEN	Universal Electronics, 3 Mitchell Rd. BROOKVALE	363978	Premise Match	115m	South East
	ELECTRIC SWITCH & CONTROL GEAR MFRS. &/OR DISTS.	Universal Electronics, 3 Mitchell Rd., Brookvale	301386	Premise Match	115m	South East
	ELECTRONIC EQUIPMENT MFRS. &/OR DISTRIBUTORS	Universal Electronics, 3 Mitchell Rd., Brookvale	303771	Premise Match	115m	South East
	ELECTRONICS-INDUSTRIAL CONTROL EQUIPMENT MFRS.	Universal Electronics, 3 Mitchell Rd., Brookvale	303801	Premise Match	115m	South East
	TELEVISION SET MANUFACTURERS/DISTRIBUTORS	Universal Electronics, 3 Mitchell Rd., Brookvale	256026	Premise Match	115m	South East
21	ENGINEERS-FABRICATING	Winbourne Engineering Co Pty Ltd 79 Winbourne Rd., Brookvale	305929	Premise Match	134m	South
	WELDERS-ELECTRIC &/OR OXY	Winbourne Engineering Co Pty Ltd 79 Winbourne Rd., Brookvale	262587	Premise Match	134m	South
	ENGINEERS-FABRICATING	Winbourne Engineering Co. Pty. Ltd., 79 Winbourne Rd., Brookvale	305930	Premise Match	134m	South
	ENGINEERS-STRUCTURAL	Winbourne Engineering Co. Pty. Ltd., 79 Winbourne Rd., Brookvale	308724	Premise Match	134m	South
	WELDERS-ELECTRIC &/OR OXY	Winbourne Engineering Co. Pty. Ltd., 79 Winbourne Rd., Brookvale	262578	Premise Match	134m	South
22	ROAD TRANSPORT SERVICES-N.S.W.	McFarlane, S., 64 Alfred St., Brookvale	246420	Premise Match	135m	North
23	CAFES, TEA ROOMS, COFFEE LOUNGES, Etc.	Brookvale Tea & Coffee Shop, 686 Pittwater Rd., Brookvale	282038	Premise Match	136m	South West
24	ORNAMENTAL METAL WORKERS	Colmer & Jackson Pty. Ltd., 77 Winbourne Rd., Brookvale	355107	Premise Match	138m	South
	WROUGHT IRON WORKERS	Colmer & Jackson Pty. Ltd., 77 Winbourne Rd., Brookvale	264250	Premise Match	138m	South
25	FLUORESCENT LIGHTING EQUIPMENT MANUFACTURERS	Brookvale Metal Products Pty. Ltd., 75 Winbourne Rd., Brkvle	312189	Premise Match	139m	South
	SHEET METAL WORKERS	Brookvale Metal Products Pty. Ltd., 75 Winbourne Rd., Brookvale	249207	Premise Match	139m	South
	ALUMINIUM PRODUCTS MFRS.	Dream Products Pty. Ltd., 75 Winbourne Rd., Brookvale	267649	Premise Match	139m	South
	AWNINGS-ALUMINIUM-MFRS.	Dream Products Pty. Ltd., 75 Winbourne Rd., Brookvale	270276	Premise Match	139m	South

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
25	DOOR MANUFACTURERS	Dream Products Pty. Ltd., 75 Winbourne Rd., Brookvale	297520	Premise Match	139m	South
	TOOL MAKERS	Fatches, L. F., 75 Winbourne Rd., Brookvale	258140	Premise Match	139m	South
	MOTOR GARAGES & ENGINEERS	Kennedy, N. K., 75 Winbourne Rd. BROOKVALE	347493	Premise Match	139m	South
	EARTH MOVING EQUIPMENT-MAINTENANCE & REPAIRERS	Kennedy, N. K., 75 Winbourne Rd., Brookvale	299688	Premise Match	139m	South
	TRACTOR REPAIR SPECIALISTS	Kennedy, N. K., 75 Winbourne Rd., Brookvale	258907	Premise Match	139m	South
26	CAKE SHOPS & PASTRYCOOKS	Brookvale Home Made Pastries, 684 Pittwater Rd. Brookvale	282859	Premise Match	142m	South West
27	BUTCHERS-RETAIL	Drake, L. W. B., 680 Pittwater Rd., Brookvale	280198	Premise Match	148m	South West
	HARDWARE DEALERS/IRONMONGERS	Punch's Brookvale Hardware Store., 682 Pittwater Rd., BROOKVALE	323127	Premise Match	148m	South West

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1961 Business Directory Records Road or Area Matches

Records from the 1961 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
28	MOTOR CAR/TRUCK DEALERS—NEW/USED	Avondale Motors Pty. Ltd., 567-780 Pittwater Rd., Brookvale	344854	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Bombardier Motor Sales Pty. Ltd., 305 Pittwater Rd. BROOKVALE	346681	Road Match	0m
	BUILDING SOCIETIES & COMPANIES	Brookvale C.B.S. No. 1, 329-331 Pittwater Rd., Brookvale	278577	Road Match	0m
	MOTOR CAR/TRUCK DEALERS—NEW/USED	Browns Auto Sales, Pittwater Rd., Brookvale	344909	Road Match	0m
	PLUMBERS, GASFITTERS/DRAINLAYERS	Buckland, R. J., 218 Pittwater Rd. Brookvale	360295	Road Match	0m
	HARDWARE DEALERS/IRONMONGERS	Craig's Building Supplies., Pittwater Rd., BROOKVALE	323125	Road Match	0m
	PAINT, VARNISH, OILS/COLOUR MERCHANTS	Craigs, Pittwater Rd., Brookvale	355624	Road Match	0m
	ENGINEERS-CINEMATOGRAPH	Distinctive Products Pty. Ltd., 463 Pittwater Rd., Brookvale	304804	Road Match	0m
	TRANSFORMER MFRS.	Foster, A. H., 409 Pittwater Rd., Brookvale	259246	Road Match	0m
	MOTOR CAR/TRUCK DEALERS—NEW/USED	Mackelland Motors, Pittwater Rd., Brookvale	345183	Road Match	0m
	BUILDERS & CONTRACTORS-(M.M.B.A.)	Seller Bros. Pty. Ltd., 463 Pittwater Rd., BROOKVALE	277604	Road Match	0m
	STATIONERS-COMMERCIAL	Vaughan Bros., 455 Pittwater Rd., Brookvale	252850	Road Match	0m
	PRINTERS-LETTERPRESS	Vaughan, D. Pty. Ltd., 455 Pittwater Rd., Brookvale	362495	Road Match	0m
	PRINTERS-LITHOGRAPHIC	Vaughan, D. Pty. Ltd., 455 Pittwater Rd., Brookvale	362612	Road Match	0m
29	ENGINEERS-ELECTRICAL	Alder, H. P. & Sons, Gulliver Rd., Brookvale	305357	Road Match	24m

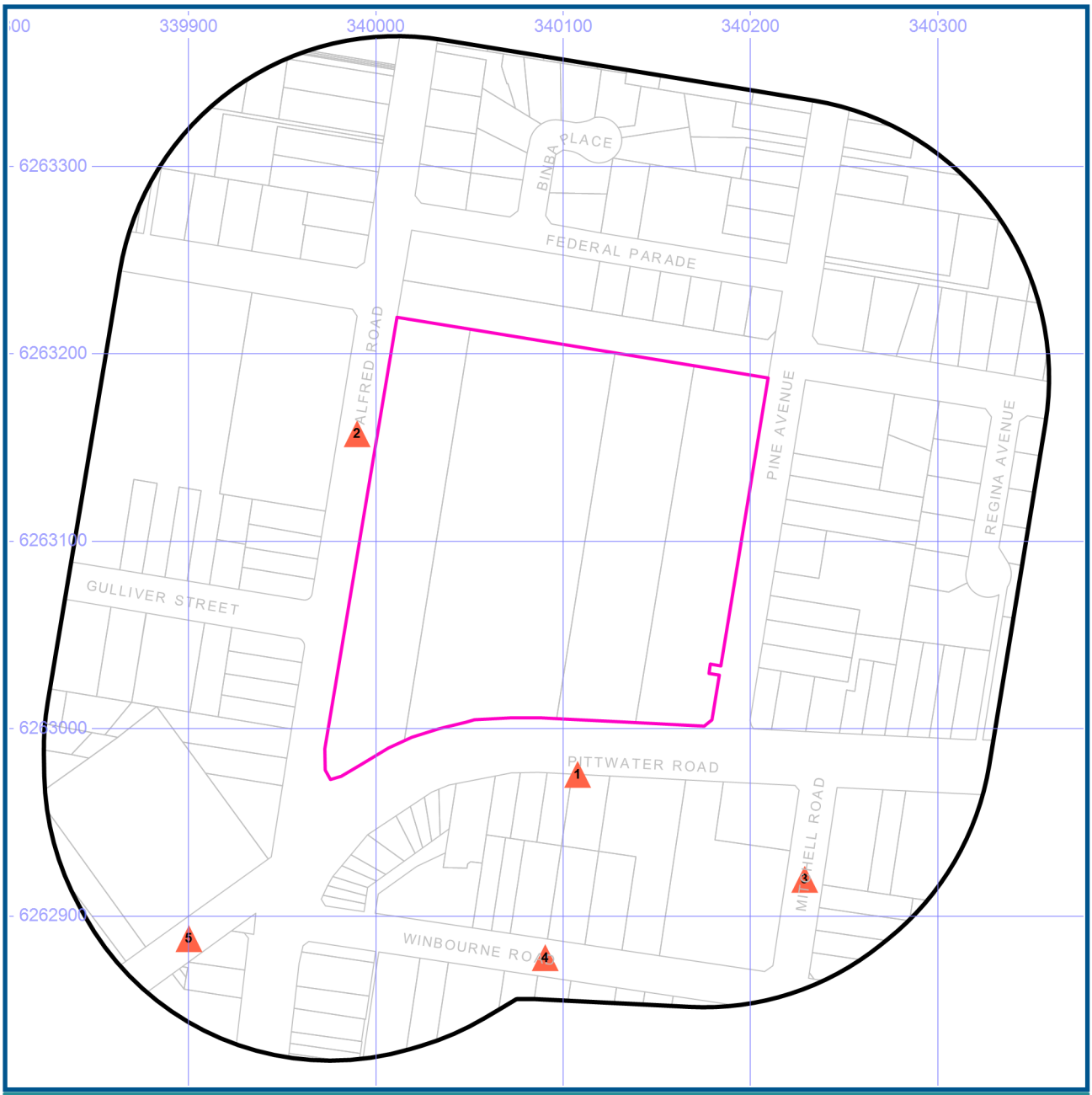
Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
29	ENGINEERS-REFRIGERATION	Alder, H. P. & Sons, Gulliver Rd., Brookvale	308016	Road Match	24m
	REFRIGERATOR DEALERS &/OR SERVICEMEN	Alder, H. P. & Sons, Gulliver Rd., Brookvale	245450	Road Match	24m
	CLOTHING MFRS. &/OR W'SALERS-GENERAL	Edward, D., Gulliver Rd., Brookvale	289418	Road Match	24m
	CLOTHING MFRS. &/OR W'SALERS-LADIES' MANTLES	Edward, D., Gulliver Rd., Brookvale	290360	Road Match	24m
30	FOUNDERS-FERROUS	Brookvale Foundry, Mitchell Rd., Brookvale	313500	Road Match	60m
	RADIO &/OR TELEVISION COMPONENT PARTS MFRS	Telecomponents Pty. Ltd., Mitchell Rd., Brookvale	363867	Road Match	60m
	TELEPHONE SUPPLIES	Telecomponents Pty. Ltd., Mitchell Rd., Brookvale	255860	Road Match	60m
	TELEVISION EQUIPMENT IMPORTS., MFRS. &/OR DISTS.	Telecomponents Pty. Ltd., Mitchell Rd., Brookvale	255962	Road Match	60m
	FRUIT, VEGETABLE, POTATO & PRODUCE AGENTS &/OR W'SALERS	Warringah Market Pty. Ltd., Mitchell Rd., Brookvale	314870	Road Match	60m
31	ORNAMENTAL METAL WORKERS	Mercalyne Products, 175 Winbourne Rd., Brookvale	355133	Road Match	64m
32	ROOFING-BITUMINOUS & DAMPCOURSE	Beely T.S., Old Pittwater Rd., Brookvale	246727	Road Match	75m
	PHOTOGRAPHIC EQUIPMENT MFRS. &/OR DISTS.	Fotek Corporation Pty. Ltd., Old Pittwater Rd., Brookvale	357925	Road Match	75m
	PHOTOGRAPHIC EQUIPMENT DEALERS &/OR IMPORTERS	Hanimax Pty. Ltd., Old Pittwater Rd., Brookvale	357885	Road Match	75m
	IMPORTERS	Hanimex Pty. Ltd., Old Pittwater Rd., Brookvale	326380	Road Match	75m
	BUILDERS & CONTRACTORS-(M.M.B.A.)	Miles, R. C "Gumbooya," Old Pittwater Rd BROOKVALE	277421	Road Match	75m
	BITUMEN & BITUMINOUS PRODUCTS	Reely, T. S., Old Pittwater Rd., Brookvale	273156	Road Match	75m
	ROOFING MATERIAL MFRS. &/OR DISTRIBUTORS	Reely, T. S., Old Pittwater Rd., Brookvale	246708	Road Match	75m

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1950 Business Directory Records



Site Boundary

Buffer 150m

Property Boundaries

Business directory records mapped to a specific premise

Business directory records mapped to a road intersection

Business directory records mapped to a road corridor

Business directory records mapped to a general area

N

Projected Coordinate System:
GDA94 MGA Zone 56

Data Sources: Universal Business Directories (UBD), derived data, licensed from Hardie Grant.
Property Boundaries © NSW Department Finance, Services & Innovation 2019

Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

1950 Business Directory Records
Premise or Road Intersection Matches

Records from the 1950 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
	No records in buffer					

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1950 Business Directory Records
Road or Area Matches

Records from the 1950 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
1	CAKE SHOPS & PASTRYCOOKS	Alagich, S., 295 Pittwater Rd., Brookvale	16367	Road Match	0m
	FRUITERERS & GREENGROCERS	Alagich, S., 295 Pittwater Rd., Brookvale	49442	Road Match	0m
	DIE & PRESS TOOL MAKERS	Asset Engineering Co., 417 Pittwater Rd., Brookvale	32647	Road Match	0m
	ENGINEERS-PRECISION	Asset Engineering Co., 417 Pittwater Rd., Brookvale	41801	Road Match	0m
	METAL PRESSERS & STAMPERS	Asset Engineering Co., 417 Pittwater Rd., Brookvale	75918	Road Match	0m
	TOOL MAKERS	Asset Engineering Co., 417 Pittwater Rd., Brookvale	109056	Road Match	0m
	ENGINEERS-GENERAL &/OR MANUFACTURING &/OR MECHANICAL	Assett Engineering Co., 417 Pittwater Rd., Brookvale	40419	Road Match	0m
	ADVERTISING AGENTS-OUTDOOR	B.K.S. Display Services, 271 Pittwater Rd., Brookvale	1089	Road Match	0m
	DISPLAY FITTINGS MFRS. &/OR SUPPLIERS	B.K.S. Display Services, 271 Pittwater Rd., Brookvale	33000	Road Match	0m
	WINDOW DRESSERS	B.K.S. Display Services, 271 Pittwater Rd., Brookvale	113381	Road Match	0m
	BUTCHERS-RETAIL	Barden, Mr., Pittwater Rd., Brookvale	13107	Road Match	0m
	DRAPERS-RETAIL	Blanshard, E. and D., 331 Pittwater Rd., Brookvale	33520	Road Match	0m
	MERCERS & GENT'S OUTFITTERS	Blanshard, E. and D., 331 Pittwater Rd., Brookvale	74260	Road Match	0m
	PICTURE THEATRES-SUBURBAN	Brookvale Cinema, Pittwater Rd., Brookvale	92758	Road Match	0m
	FISH MERCHANTS-RETAIL	Brookvale Fish Supply, 341 Pittwater Rd., Brookvale	44257	Road Match	0m
	QUARRY PROPRIETORS	Brookvale Sandstone Quarrying Co., Pittwater Rd., Brookvale	96472	Road Match	0m

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
1	LEATHER GOODS MFRS. &/OR WHOLESALERS	Bryant, W, J., 230 Pittwater Rd., Brookvale	68072	Road Match	0m
	DRESSMAKERS & COSTUMIERS	Clare, Violet, 256a Pittwater Rd., Brookvale	34406	Road Match	0m
	PLASTER MANUFACTURERS	Crossland Plaster Works, Pittwater Rd., Brookvale	93193	Road Match	0m
	BUTCHERS-RETAIL	Drake, L, W. B., Pittwater Rd., Brookvale	13395	Road Match	0m
	ELECTRICAL ENGINEERS	Foster, A. H., 409 Pittwater Rd., Brookvale	38098	Road Match	0m
	ELECTRICAL SUPPLIES & APPLIANCES RETAILERS	Foster, A. H., 409 Pittwater Rd., Brookvale	38530	Road Match	0m
	RADIO SALES &/OR SERVICEMEN	Foster, A. H., 409 Pittwater Rd., Brookvale	97209	Road Match	0m
	TOY DEALERS-RETAIL	Foster, A. H., 409 Pittwater Rd., Brookvale	109421	Road Match	0m
	TRANSFORMER MANUFACTURERS	Foster, A. H., 409 Pittwater Rd., Brookvale	110170	Road Match	0m
	INSTRUMENTS-SCIENTIFIC-MFRS.	Franklin, A L., 380-382 Pittwater Rd., Brookvale	64452	Road Match	0m
	INSTRUMENTS-SCIENTIFIC-MFRS.	Franklin, A. L., 380 Pittwater Rd., Brookvale	64453	Road Match	0m
	SCIENTIFIC APPARATUS MANUFACTURERS	Franklin, A. L., 380-382 Pittwater Rd., Brookvale	100975	Road Match	0m
	ELECTRIC CLOCK MANUFACTURERS	Franklin, A. L., Pittwater Rd., Brookvale	36364	Road Match	0m
	SCALE & WEIGHING MACHINE MFRS. &/OR DISTRIBUTORS &/OR IMPORTERS	Franklin, A. L., Pittwater Rd., Brookvale	100759	Road Match	0m
	DENTAL SUPPLIES & EQUIPMENT	General Wax Refineries, 415 Pittwater Rd., Brookvale	31609	Road Match	0m
	DELICATESSENS & SMALLGOODS DEALERS	Gorman, A. and C., 411 Pittwater Rd., Brookvale	30537	Road Match	0m
	FRUITERERS & GREENGROCERS	Gorman, A. and C., 411 Pittwater Rd., Brookvale	50200	Road Match	0m
	GROCERS-RETAIL	Gorman, A. and C., 411 Pittwater Rd., Brookvale	57577	Road Match	0m
	MILK BARS & CONFECTIONERS	Gum Leaf (The), 323 Pittwater Rd., Brookvale	76745	Road Match	0m
	BOAT, LAUNCH & YACHT BUILDERS & REPAIRERS	Hammond, H., 242 Pittwater Rd., Brookvale	8773	Road Match	0m
	RADIO SALES &/OR SERVICEMEN	Jack, R. W., 329 Pittwater Rd., Brookvale	97320	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS	James, C., Pittwater Rd., Brookvale	83920	Road Match	0m
	BOOT & SHOE REPAIRERS	Kattie, Steve, 415 Pittwater Rd., Brookvale	10327	Road Match	0m
	CHEMISTS-PHARMACEUTICAL	Kelly, P., 297 Pittwater Rd., Brookvale	21703	Road Match	0m
	CHEMISTS-PHARMACEUTICAL	Kelly, Paul, 297 Pittwater Rd., Brookvale	21705	Road Match	0m
	DRY CLEANERS, PRESSERS & DYERS	Littles Dry Cleaner, 489 Pittwater Rd., Dee Why	35424	Road Match	0m
	NEWSAGENTS	McCarthy, F., Pittwater Rd., Brookvale	88174	Road Match	0m
	DRY CLEANERS, PRESSERS & DYERS	Mercury Dry Cleaners, 343 Pittwater Rd., Brookvale	35525	Road Match	0m
	GROCERS-RETAIL	Miles, M. W., 266 Pittwater Rd., Brookvale	58391	Road Match	0m
	NEWSAGENTS	Miles, M. W., 266 Pittwater Rd., Brookvale	88203	Road Match	0m
	CARRIERS & CARTAGE CONTRACTORS	Mills, L. Pty. Ltd., Pittwater Rd., Brookvale	19404	Road Match	0m
	GROCERS-RETAIL	O'Gorman, A., Pittwater Rd., Brookvale	58591	Road Match	0m
	PULLEY MANUFACTURERS	Pimblett, L. G., 417 Pittwater Rd., Brookvale	96381	Road Match	0m

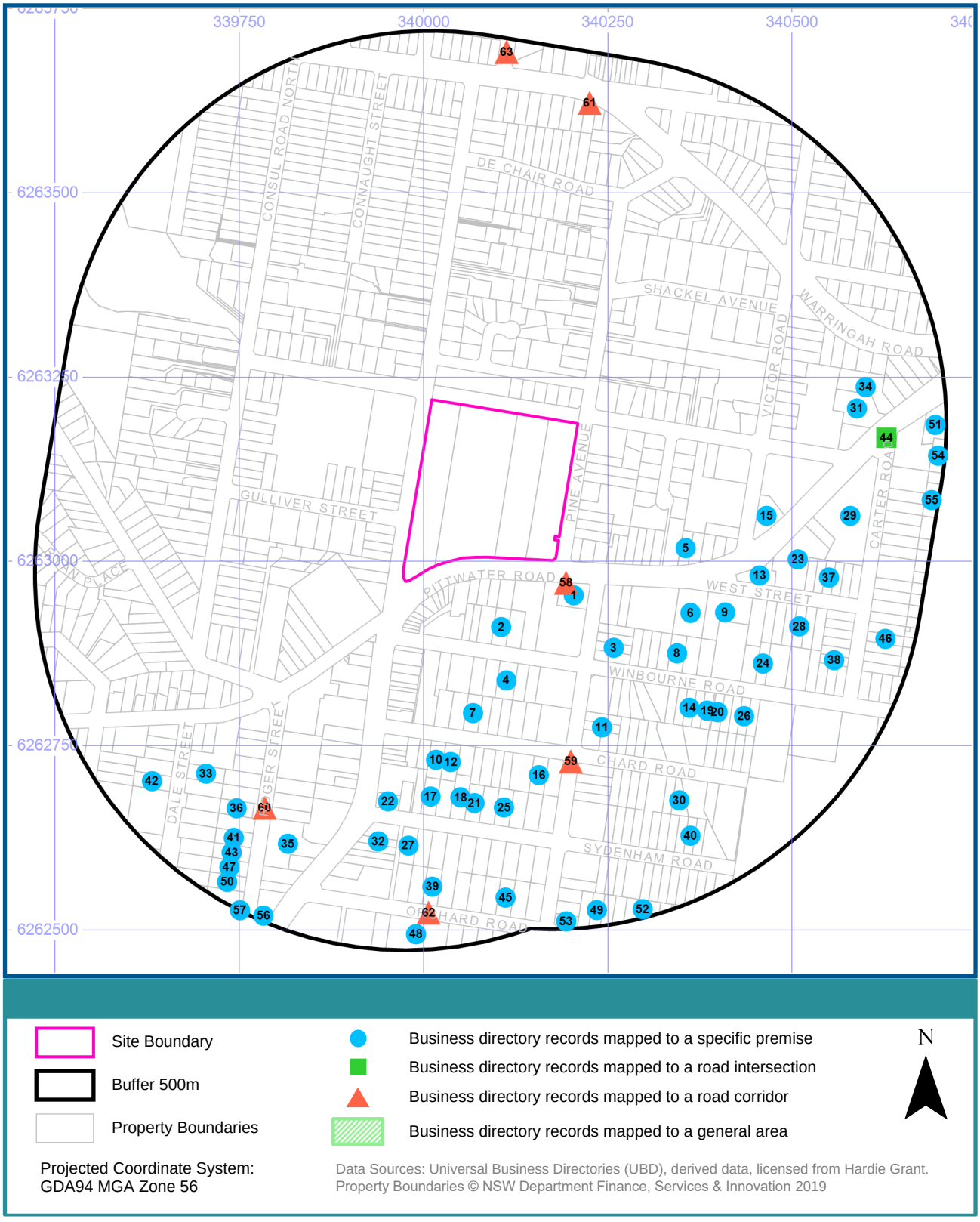
Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
1	WINDOW DISPLAY FITTINGS MFRS. &/OR SUPPLIERS	Pimblett, L. G., 417 Pittwater Rd., Brookvale	113378	Road Match	0m
	POULTRY FARMERS	Reynolds, C. and Stilwell, L. W., Pittwater Rd., Brookvale	94244	Road Match	0m
	INSURANCE AGENTS	Roberts, F. (Murphy, W. and E.), 548 Pittwater Rd., Narrabeen Terminus	64976	Road Match	0m
	BEAUTY SALONS &/OR LADIES' HAIRDRESSERS	Ruths Salon, 256 Pittwater Rd., Brookvale	7762	Road Match	0m
	CAFES, TEA ROOMS, COFFEE LOUNGES, Etc.	Ryan, E. J., 323 Pittwater Rd., Brookvale	15978	Road Match	0m
	FRUITERERS & GREENGROCERS	Ryan, E. J., 323 Pittwater Rd., Brookvale	51117	Road Match	0m
	INSURANCE AGENTS	Shield, L. W., 407 Pittwater Rd., Brookvale	64998	Road Match	0m
	REAL ESTATE AGENTS	Shield, L. W., 407 Pittwater Rd., Brookvale	98803	Road Match	0m
	TYRE VULCANIZING EQUIPMENT MFRS.	Stenor Industries Pty. Ltd., 417 Pittwater Rd., Brookvale	111065	Road Match	0m
	VULCANISING EQUIPMENT-MANUFACTURERS	Stenor Industries Pty. Ltd., Pittwater Rd., Brookvale	112032	Road Match	0m
	MEDALS & MEDALLIONS MANUFACTURERS	Super Mounts, 417 Pittwater Rd., Brookvale	72275	Road Match	0m
	DRAPERS-RETAIL	Tesch, L. F., 273 Pittwater Rd., Brookvale	34020	Road Match	0m
	MERCERS & GENT'S OUTFITTERS	Tesch, L. F., 273 Pittwater Rd., Brookvale	74654	Road Match	0m
	CORDIAL MANUFACTURERS	Thomas, H. and L., 370 Pittwater Rd., Brookvale	29029	Road Match	0m
	TOBACCONISTS-RETAIL	Thomson, A. D., 272 Pittwater Rd., Brookvale	108872	Road Match	0m
	WINE SALOONS	Thomson, A. D., 272 Pittwater Rd., Brookvale	113834	Road Match	0m
	WINE SALOONS	Thomson, E., Pittwater Rd., Brookvale	113835	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS	Try, Lance, 220 Pittwater Rd., Brookvale	84483	Road Match	0m
	DRAPERS-RETAIL	Vernons, 303 Pittwater Rd., Brookvale	34037	Road Match	0m
	HAIRDRESSERS (GENT.'S) &/OR TOBACCONISTS	Vincent, J. L., 271 Pittwater Rd., Brookvale	60117	Road Match	0m
	BRICK, PIPE & TILE MANUFACTURERS	Warringah Brick and Pipe Works Pty. Ltd., Pittwater Rd., Brookvale	11316	Road Match	0m
	GROCERS-RETAIL	Warringah Stores, 321 Pittwater Rd., Brookvale	56094	Road Match	0m
	NEWSAGENTS	Wells, W., 337 Pittwater Rd., Brookvale	88423	Road Match	0m
	MILK BARS & CONFECTIONERS	White, F., 339 Pittwater Rd., Brookvale	77540	Road Match	0m
	MIXED BUSINESSES & GENERAL STORES	White, F., 339 Pittwater Rd., Brookvale	81251	Road Match	0m
2	CARRIERS & CARTAGE CONTRACTORS	R. and M. Haulage Contractors, Alfred Rd., Brookvale	19626	Road Match	0m
3	FOUNDERS-FERROUS	Brookvale Foundry, Mitchell Rd., Brookvale	47639	Road Match	60m
	FOUNDERS-NON-FERROUS	Brookvale Foundry, Mitchell Rd., Brookvale	47793	Road Match	60m
4	ICE MANUFACTURERS & VENDORS	Warringah Ice Co. Pty. Ltd., Winbourne Rd., Brookvale	63954	Road Match	64m
5	ELECTRICAL CONTRACTORS &/OR ELECTRICIANS	Stacey, K., Old Pittwater Rd., Brookvale	37889	Road Match	75m
	POULTRY FARMERS	Stevens, A. E., Old Pittwater Rd., Brookvale	94295	Road Match	75m

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Dry Cleaners, Motor Garages & Service Stations (1948-1993)



Historical Business Directories

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Dry Cleaners, Motor Garages & Service Stations Premise or Road Intersection Matches (1948-1993)

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a premise or road intersection, within the dataset buffer.

Note: The Universal Business Directories were published between 1948 and 1993. Dry Cleaners, Motor Garages & Service Stations have been extracted from all of these directories except the following years 1951, 1955, 1957, 1960, 1963, 1973, 1974, 1977, 1987.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	Motor Garages & Service Stations	Solo Oil Aust. Pty Ltd, 738 Pittwater Rd., Brookvale 2100	53901	1991	Premise Match	31m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Solo Oil Aust Pty. Ltd., 738 Pittwater Rd., Brookvale. 2100	12158	1990	Premise Match	31m	South East
	MOTOR GARAGE & SERVICE STATIONS.	Solo Oil Aust. Pty. Ltd., 738 Pittwater Rd., Brookvale. 2100	5577	1989	Premise Match	31m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Solo Oil Aust. Pty. Ltd., 738 Pittwater Rd., Brookvale. 2100	59969	1988	Premise Match	31m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Solo Oil Aust. Pty. Ltd., 738 Pittwater Rd., Brookvale. 2100	65469	1986	Premise Match	31m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Solo Oil Aust. Pty. Ltd., 738 Pittwater Rd., Brookvale. 2100	45579	1985	Premise Match	31m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Solo., 738 Pittwater Rd., Brookvale. 2100	34141	1984	Premise Match	31m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Solo., 738 Pittwater Rd, Brookvale 2100	21593	1983	Premise Match	31m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Solo, 738 Pittwater Rd., Brookvale. 2100.	57584	1982	Premise Match	31m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Solo., 738 Pittwater Rd., Brookvale 2100	8177	1981	Premise Match	31m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Solo., 738 Pittwater Rd., Brookvale. 2100	58856	1980	Premise Match	31m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Solo., 738 Pittwater Rd., Brookvale. 2100.	46359	1979	Premise Match	31m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Total Service Station, 738 Pittwater Rd., Brookvale. 2100	51010	1978	Premise Match	31m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Total Service Station., 738 Pittwater Rd., Brookvale 2100	35099	1976	Premise Match	31m	South East
	MOTOR GARAGES &/OR ENGINEERS.	Total Service Station., 738 Pittwater Rd., Brookvale.2100	59689	1975	Premise Match	31m	South East
	MOTOR GARAGES &/OR ENGINEERS.	Total Service Station., 738 Pittwater Rd Brookvale	7684	1972	Premise Match	31m	South East
	MOTOR GARAGES &/OR ENGINEERS.	Total Service Station., 738 Pittwater Rd Brookvale	56437	1971	Premise Match	31m	South East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	MOTOR GARAGES & ENGINEERS(M6S6)	Total Service Station., 738 Pittwater Rd., BROOKVALE	338603	1970	Premise Match	31m	South East
	MOTOR GARAGES & ENGINEERS.	Total Service Station., 738 Pittwater Rd Brookvale	37700	1969	Premise Match	31m	South East
	MOTOR GARAGES & ENGINEERS	Total Service Station., 738 Pittwater Rd Brookvale	21132	1968	Premise Match	31m	South East
	MOTOR GARAGES & ENGINEERS.	Total Service Station., 738 Pittwater Rd Brookvale	6702	1967	Premise Match	31m	South East
	MOTOR GARAGES & ENGINEERS.	Total Service Station., 738 Pittwater Rd Brookvale	6784	1967	Premise Match	31m	South East
	MOTOR GARAGES & ENGINEERS.	Total Service Station., 738 Pittwater Rd., Brookvale	55744	1966	Premise Match	31m	South East
	Motor Garages & Engineers	Total Service Station, 738 Pittwater Rd. Brookvale	122318	1965	Premise Match	31m	South East
2	MOTOR GARAGES & ENGINEERS(M6S6)	Harvey, G. & J., 66 Winbourne Rd., BROOKVALE	337993	1970	Premise Match	68m	South
	MOTOR GARAGES & ENGINEERS.	Harvey G & J., 66 Winbourne Rd Brookvale	37697	1969	Premise Match	68m	South
	MOTOR GARAGES & ENGINEERS	Harvey G & J., 66 Winbourne Rd Brookvale	21129	1968	Premise Match	68m	South
	MOTOR GARAGES & ENGINEERS.	Harvey G & J., 66 Winbourne Rd Brookvale	6781	1967	Premise Match	68m	South
	MOTOR GARAGES & ENGINEERS.	Harvey G & J., 66 Winbourne Rd Brookvale	6699	1967	Premise Match	68m	South
	MOTOR GARAGES & ENGINEERS.	Harvey G. & J., 66 Winbourne Rd Brookvale	55740	1966	Premise Match	68m	South
	Motor Garages & Engineers	Harvey, G. & J., 66 Winbourne Rd. Brookvale	122314	1965	Premise Match	68m	South
	MOTOR GARAGES & ENGINEERS	Harvey G. & J., 66 Winbourne Rd Brookvale	43511	1964	Premise Match	68m	South
	MOTOR GARAGES & ENGINEERS.	Harvey G. & J., 66 Winbourne Rd Brookvale	29006	1962	Premise Match	68m	South
	MOTOR GARAGES & ENGINEERS	Harvey, G. & J., 66 Winbourne Rd. BROOKVALE	347339	1961	Premise Match	68m	South
	MOTOR GARAGES & ENGINEERS	Harvey G. & J., 66 Winbourne Rd Brookvale	13721	1959	Premise Match	68m	South
	MOTOR GARAGES & ENGINEERS	Harvey G. & J., Rear, 66 Winbourne Rd Brookvale	13714	1959	Premise Match	68m	South
	MOTOR GARAGE/ENGINEERS.	Harvey, G. & J., 66 Winbourne Rd., Brookvale	4251	1958	Premise Match	68m	South
3	Motor Garages & Service Stations	Maunder & Saville Mechanical Repairs Pty. Ltd., 5 Mitchell Rd., Brookvale 2100	96185	1991	Premise Match	124m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Maunder & Saville Mechanical Repairs Pty. Ltd., 5 Mitchell Rd., Brookvale. 2100	11823	1990	Premise Match	124m	South East
	MOTOR GARAGE & SERVICE STATIONS.	Maunder & Saville Mechanical Repairs Pty. Ltd., 5 Mitchell Rd., Brookvale. 2100	5233	1989	Premise Match	124m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Maunder & Saville Mechanical Repairs Pty. Ltd., 5 Mitchell Rd., Brookvale. 2100	59595	1988	Premise Match	124m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Maunder & Saville Mechanical Repairs Pty. Ltd., 5 Mitchell Rd., Brookvale. 2100	65060	1986	Premise Match	124m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Maunder & Saville Mechanical Repairs Pty. Ltd., 5 Mitchell Rd., Brookvale. 2100	45163	1985	Premise Match	124m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Warringah Clutch Service, 5 Mitchell Rd., Brookvale. 2100	45807	1985	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Maunder & Save Mechanical Repairs Pty Ltd., 5 Mitchell Rd., Brookvale. 2100	33740	1984	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Warringah Clutch Service, 5 Mitchell Rd., Brookvale. 2100	34366	1984	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Cush R. Mechanical Repairs Pty. Ltd., 5 Mitchell Rd., Brookvale. 2100	14539	1983	Premise Match	124m	South East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
3	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Warringah Clutch Service., 5 Mitchell Rd., Brookvale 2100	21812	1983	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Cush, R. Mechanical Repairs Pty. Ltd, 5 Mitchell Rd., Brookvale. 2100.	56601	1982	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Warringah Clutch Service, 5 Mitchell Rd., Brookvale. 2100.	57815	1982	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Cush, R. Mechanical Repairs Pty. Ltd., 5 Mitchell Rd., Brookvale. 2100.	3155	1981	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Warringah Clutch Service., 5 Mitchell Rd., Brookvale 2100	8388	1981	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Cush, R. Mechanical Repairs Pty Ltd., 5 Mitchell Rd., Brookvale. 2100	52798	1980	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Warringah Clutch Service., 5 Mitchell Rd., Brookvale. 2100	59074	1980	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Cush R. Mechanical Repairs Pty. Ltd., 5 Mitchell Rd., Brookvale. 2100.	41346	1979	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Warringah Clutch Service., 5 Mitchell Rd., Brookvale. 2100.	46572	1979	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Cush, R. Mechanical Repairs Pty. Ltd., 5 Mitchell Rd., Brookvale. 2100	49875	1978	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Warringah Clutch Service, 5 Mitchell Rd., Brookvale. 2100	51056	1978	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS.	Murphy T., 5 Mitchell Rd Brookvale	7674	1972	Premise Match	124m	South East
	MOTOR GARAGES &/OR ENGINEERS.	Murphy T., 5 Mitchell Rd Brookvale	56427	1971	Premise Match	124m	South East
4	MOTOR GARAGES & ENGINEERS.	Kennedy N. K., 75 Winbourne Rd Brookvale	29007	1962	Premise Match	139m	South
	MOTOR GARAGES & ENGINEERS	Kennedy, N. K., 75 Winbourne Rd. BROOKVALE	347493	1961	Premise Match	139m	South
	MOTOR GARAGES & ENGINEERS	Kennedy N K., 75 Winbourne Rd Brookvale	13715	1959	Premise Match	139m	South
	MOTOR GARAGES & ENGINEERS	Kennedy N. K., 75 Winbourne Rd., Brookvale	13722	1959	Premise Match	139m	South
	MOTOR GARAGE/ENGINEERS.	Kennedy N K., 75 Winbourne Rd., Brookvale	459	1958	Premise Match	139m	South
	MOTOR GARAGE/ENGINEERS.	Kennedy N. K., 75 Winbourne Rd Brookvale	4387	1958	Premise Match	139m	South
5	DRY CLEANERS, PRESSERS & DYERS	Alpine Dry Cleaners, 549 Pittwater Rd., Dee Why	35062	1950	Premise Match	165m	East
	DRY CLEANERS, PRESSERS & DYERS.	Alpine Dry Cleaners., 549 Pittwater Rd Dee Why	17049	1948-49	Premise Match	165m	East
6	Motor Garages & Service Stations	D & D Trading Service Station (Ampol), 754 Pittwater Rd, Brookvale 2100	53675	1991	Premise Match	172m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Ampol Brookvale Service Station, 754 Pittwater Rd., Brookvale. 2100	5814	1990	Premise Match	172m	South East
	MOTOR GARAGES & SERVICE STATIONS.	D. & D. Trading Service Station (Ampol), 754 Pittwater Rd., Brookvale. 2100	11480	1990	Premise Match	172m	South East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
6	MOTOR GARAGE & SERVICE STATIONS.	Ampol Boronia Park Service Station, 754 Pittwater Rd., Brookvale. 2100	64301	1989	Premise Match	172m	South East
	MOTOR GARAGE & SERVICE STATIONS.	Ampol Brookvale Service Station, 754 Pittwater Rd., Brookvale. 2100	64302	1989	Premise Match	172m	South East
	MOTOR GARAGE & SERVICE STATIONS.	D. & D. Trading Service Station (Ampol)., 754 Pittwater Rd., Brookvale. 2100	64931	1989	Premise Match	172m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Ampol Brookvale Service Station, 754 Pittwater Rd., Brookvale. 2100	53409	1988	Premise Match	172m	South East
	MOTOR GARAGES & SERVICE STATIONS.	D. & D. Trading Service Station (Ampol)., 754 Pittwater Rd., Brookvale. 2100	59138	1988	Premise Match	172m	South East
	MOTOR GARAGES & SERVICE STATIONS.	D. & D. Trading Service Station (Ampol), 754 Pittwater Rd. Brookvale. 2100	64532	1986	Premise Match	172m	South East
	MOTOR GARAGES & SERVICE STATIONS.	D. & D. Trading Service Station (Ampol)., 754 Pittwater Rd., Brookvale. 2100	39534	1985	Premise Match	172m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Ensign Service Station, 756 Pittwater Rd., Brookvale. 2100	49948	1978	Premise Match	172m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Ensign Service Station., 756 Pittwater Rd., Brookvale 2100	29892	1976	Premise Match	172m	South East
	MOTOR SERVICE STATIONS - PETROL, OIL	Ensign Service Station., 756 Pittwater Rd., Brookvale.2100	61685	1975	Premise Match	172m	South East
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Ensign Service Station., 756 Pittwater Rd Brookvale	16492	1972	Premise Match	172m	South East
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Ensign Service Station., 756 Pittwater Rd Brookvale	63077	1971	Premise Match	172m	South East
7	MOTOR GARAGE & SERVICE STATIONS.	Warringah Mechanical Services, 12 Chard Rd., Brookvale. 2100	5711	1989	Premise Match	173m	South
	MOTOR GARAGES & SERVICE STATIONS.	Warringah Mechanical Services, 12 Chard Rd., Brookvale. 2100	64188	1988	Premise Match	173m	South
	MOTOR GARAGES & SERVICE STATIONS.	Warringah Mechanical Services, 12 Chard Rd., Brookvale. 2100	65683	1986	Premise Match	173m	South
8	MOTOR GARAGES & ENGINEERS	Genner, R., 44 Winbourne Rd., Brookvale	65446	1964	Premise Match	189m	South East
	MOTOR GARAGES & ENGINEERS.	Genner R., 44 Winbourne Rd Brookvale	29003	1962	Premise Match	189m	South East
	MOTOR GARAGES & ENGINEERS	Genner, R., 44 Winbourne Rd. BROOKVALE	347212	1961	Premise Match	189m	South East
9	MOTOR GARAGES &/OR ENGINEERS.	Buckle B. Auto Conversions Pty. Ltd., 3 West St., Brookvale 2100	7662	1972	Premise Match	212m	South East
	MOTOR GARAGES & ENGINEERS.	Try L., 1 West St Brookvale	29010	1962	Premise Match	212m	South East
	MOTOR GARAGES & ENGINEERS	Try, L., 1 West St. Brookvale	348324	1961	Premise Match	212m	South East
10	DRY CLEANERS & PRESSERS.	Murphys Dry Cleaners, 5 Chard Rd., Brookvale. 2100	53222	1988	Premise Match	218m	South
	DRY CLEANERS & PRESSERS.	Murphys Dry Cleaners, 5 Chard Rd., Brookvale. 2100	25450	1986	Premise Match	218m	South
	DRY CLEANERS & PRESSERS.	Murphys Dry Cleaners, 5 Chard Rd., Brookvale. 2100	34668	1985	Premise Match	218m	South
	DRY CLEANERS & PRESSERS.	Murphys Dry Cleaners, 5 Chard Rd., Brookvale. 2100	22119	1984	Premise Match	218m	South
	DRY CLEANERS & PRESSERS.	Murphys Dry Cleaners., 5 Chard Rd., Brookvale 2100	8714	1983	Premise Match	218m	South
	DRY CLEANERS & PRESSERS.(D8500)	Murphys Dry Cleaners, 5 Chard Rd., Brookvale. 2100.	23984	1982	Premise Match	218m	South
	DRY CLEANERS & PRESSERS.	Murphys Dry Cleaners., 5 Chard Rd., Brookvale. 2100	63470	1981	Premise Match	218m	South
	DRY CLEANERS, PRESSERS &/OR DYERS.	Murphys Dry Cleaners., 5 Chard Rd., Brookvale. 2100	49948	1980	Premise Match	218m	South

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
10	DRY CLEANERS, PRESSERS &/OR DYERS.	Murphys Dry Cleaners., 5 Chard Rd., Brookvale. 2100	35481	1979	Premise Match	218m	South
	DRY CLEANERS, PRESSERS &/OR DYERS	Murphys Dry Cleaners. 5 Chard Rd., Brookvale. 2100	20885	1978	Premise Match	218m	South
	DRY CLEANERS, PRESSERS &/OR DYERS.	Murphys Dry Cleaners., 5 Chard Rd., Brookvale 2100	23708	1976	Premise Match	218m	South
	DRY CLEANERS, PRESSERS &/OR DYERS.	Murphy's Pty. Ltd., 5 Chard Rd., Brookvale. 2100	24232	1975	Premise Match	218m	South
	DRY CLEANERS, PRESSERS &/OR DYERS.	Murphys Dry Cleaners Pty. Ltd., 5 Chard Rd Brookvale	7142	1972	Premise Match	218m	South
	DRY CLEANERS, PRESSERS &/OR DYERS	Murphys Dry Cleaners Pty. Ltd., 5 Chard Rd Brookvale	51206	1971	Premise Match	218m	South
	DRY CLEANERS,PRESSERS /DYERS (D710)	Murphys Dry Cleaners Pty. Ltd., 5 Chard Rd., Brookvale	292409	1970	Premise Match	218m	South
	DRY CLEANERS, PRESSERS/ DYERS	Murphys Dry Cleaners Pty. Ltd., 5 Chard Rd Brookvale	37218	1969	Premise Match	218m	South
	DRY CLEANERS, PRESSERS/DYERS	Murphys Dry Cleaners Pty. Ltd., 5 Chard Rd Brookvale	20678	1968	Premise Match	218m	South
	DRY CLEANERS, PRESSERS/ DYERS	Mosman Murphys Dry Cleaners Pty. Ltd., 5 Chard Rd Brookvale	6234	1967	Premise Match	218m	South
11	Motor Garages & Service Stations	Mitchell Bros., 11 Mitchell Rd., Brookvale 2100	96165	1991	Premise Match	221m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Mitchell Bros, 11 Mitchell Rd., Brookvale. 2100	11840	1990	Premise Match	221m	South East
	MOTOR GARAGE & SERVICE STATIONS.	Mitchell Bros, 11 Mitchell Rd., Brookvale. 2100	5254	1989	Premise Match	221m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Mitchell Bros., 11 Mitchell Rd., Brookvale. 2100	59618	1988	Premise Match	221m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Mitchell Bros., 11 Mitchell Rd., Brookvale. 2100	65087	1986	Premise Match	221m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Mitchell Bros., 11 Mitchell Rd., Brookvale. 2100	45193	1985	Premise Match	221m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Mitchell Bros., 11 Mitchell Rd., Brookvale. 2100	33772	1984	Premise Match	221m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Mitchell Bros., 11 Mitchell Rd., Brookvale 2100	15121	1983	Premise Match	221m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Mitchell Bros., 11 Mitchell Rd., Brookvale. 2100.	57196	1982	Premise Match	221m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Mitchell Bros., 11 Mitchell Rd., Brookvale 2100	3762	1981	Premise Match	221m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Mitchell Bros., 11 Mitchell Rd., Brookvale. 2100	58493	1980	Premise Match	221m	South East
	MOTOR GARAGES &/OR ENGINEERS.	Mitchell Bros., 11 Mitchell Rd Brookvale	56425	1971	Premise Match	221m	South East
12	DRY CLEANERS, PRESSERS/ DYERS	Murphys Dry Cleaners., 7 Chard Rd Brookvale	55286	1966	Premise Match	225m	South
	Dry Cleaners, Pressers/Dyers	Murphys Dry Cleaners, 7 Chard Rd., Brookvale	76252	1965	Premise Match	225m	South
13	MOTOR GARAGES &/OR ENGINEERS.	Buckle B. Auto Conversions Pty. Ltd., 764 Pittwater Rd Brookvale	56415	1971	Premise Match	245m	East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
14	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Webster, B., 45 Winbourne Rd., Brookvale. 2100	51071	1978	Premise Match	252m	South East
15	MOTOR GARAGES & SERVICE STATIONS.	BP Brookvale Service Station, 559 Pittwater Rd., Brookvale. 2100	18616	1993	Premise Match	260m	East
	Motor Garages & Service Stations	BP Brookvale Service Station, 559 Pittwater Rd., Brookvale 2100	53570	1991	Premise Match	260m	East
	MOTOR GARAGES & SERVICE STATIONS.	BP Brookvale Service Station, 559 Pittwater Rd., Brookvale. 2100	6031	1990	Premise Match	260m	East
	MOTOR GARAGE & SERVICE STATIONS.	BP Brookvale Service Station, 559 Pittwater Rd., Brookvale. 2100	64539	1989	Premise Match	260m	East
	MOTOR GARAGES & SERVICE STATIONS.	BP Brookvale Service Station, 559 Pittwater Rd., Brookvale. 2100	53649	1988	Premise Match	260m	East
	MOTOR GARAGES & SERVICE STATIONS.	BP Brookvale Service Station, 559 Pittwater Rd., Brookvale. 2100	64109	1986	Premise Match	260m	East
	MOTOR GARAGES & SERVICE STATIONS.	BP Brookvale Service Station, 559 Pittwater Rd., Brookvale. 2100	39118	1985	Premise Match	260m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	BP Corvette Service Station, 559 Pittwater Rd., Brookvale. 2100	27743	1984	Premise Match	260m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	BP Corvette Service Station, 559 Pittwater Rd., Brookvale 2100	9102	1983	Premise Match	260m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	BP Corvette Service Station, 559 Pittwater Rd., Brookvale. 2100.	56201	1982	Premise Match	260m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	BP Corvette Service Station., 559 Pittwater Rd., Brookvale. 2100	63880	1981	Premise Match	260m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	BP Corvette Service Station., 559 Pittwater Rd., Brookvale. 2100	51377	1980	Premise Match	260m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	BP Corvette Service Station., 559 Pittwater Rd., Brookvale. 2100.	40992	1979	Premise Match	260m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	BP Corvette Service Station, 559 Pittwater Rd., Brookvale. 2100	49535	1978	Premise Match	260m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	BP Corvette Service Station., 559 Pittwater Rd., Brookvale 2100	25249	1976	Premise Match	260m	East
	MOTOR SERVICE STATIONS - PETROL, OIL	BP Corvette Service Station., 559 Pittwater Rd., Brookvale.2100	61493	1975	Premise Match	260m	East
	MOTOR GARAGES &/OR ENGINEERS.	B. P. Corvette Service Station., 559 Pittwater Rd Brookvale	7656	1972	Premise Match	260m	East
	MOTOR GARAGES &/OR ENGINEERS.	B.P. Corvette Service Station., 559 Pittwater Rd Brookvale	56410	1971	Premise Match	260m	East
	MOTOR GARAGES & ENGINEERS(M6S6)	B. P. Corvette Service Station., 559 Pittwater Rd., BROOKVALE	337231	1970	Premise Match	260m	East
	MOTOR GARAGES & ENGINEERS.	Bill Buckle Autos Toyota Service., 559 Pittwater Rd Brookvale	6767	1967	Premise Match	260m	East
	MOTOR GARAGES & ENGINEERS.	Bill Buckle Autos Toyota Service., 559 Pittwater Rd Brookvale	6685	1967	Premise Match	260m	East
	Motor Garages & Engineers	B.P. Corvette Service Station, 559 Pittwater Rd. Brookvale	122305	1965	Premise Match	260m	East
	MOTOR GARAGES & ENGINEERS	B P Corvette Service Station., 559 Pittwater Rd Brookvale	43503	1964	Premise Match	260m	East
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	B.P. Corvette Service Station., 559 Pittwater Rd Brookvale	37951	1962	Premise Match	260m	East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
15	MOTOR GARAGES & ENGINEERS.	Corvette Service Station., Pittwater & Victor Rds Brookvale	29002	1962	Premise Match	260m	East
	MOTOR SERVICE STATIONS—PETROL, OIL, Etc.	B.P. Corvette Service Station, 559 Pittwater Rd. BROOKVALE	350336	1961	Premise Match	260m	East
	MOTOR SERVICE STATIONS—PETROL, OIL, Etc.	Bp Corvette Service Station 559 Pittwater Rd. BROOKVALE	350394	1961	Premise Match	260m	East
	MOTOR GARAGES & ENGINEERS	Corvette Service Station, Pittwater & Victor Rds., Brookvale	346961	1961	Premise Match	260m	East
	MOTOR GARAGES & ENGINEERS	Corvette Service Station., Pittwater & Victor Rds Brookvale	13719	1959	Premise Match	260m	East
	MOTOR GARAGE/ENGINEERS.	Corvette Service Station., Pittwater & Victor Rds Brkvle	893	1958	Premise Match	260m	East
16	MOTOR GARAGES & SERVICE STATIONS.	Northside Hi-Performance Centre, 23 Chard Rd., Brookvale. 2100	19198	1993	Premise Match	266m	South
	MOTOR GARAGES & SERVICE STATIONS.	Wardsport, 23 Chard Rd., Brookvale. 2100	25526	1993	Premise Match	266m	South
	Motor Garages & Service Stations	Northside Hi-Performance Centre, 23 Chard Rd., Brookvale 2100	97817	1991	Premise Match	266m	South
	MOTOR GARAGES & SERVICE STATIONS.	Northside Hi-Performance Centre, 23 Chard Rd., Brookvale. 2100	11939	1990	Premise Match	266m	South
	MOTOR GARAGE & SERVICE STATIONS.	Northside Hi-Performance Centre, 23 Chard Rd., Brookvale. 2100	5348	1989	Premise Match	266m	South
	MOTOR GARAGES & SERVICE STATIONS.	Northside Hi-Performance Centre, 23 Chard Rd., Brookvale. 2100	59720	1988	Premise Match	266m	South
	MOTOR GARAGES & SERVICE STATIONS.	Northside Hi-Performance Centre, 23 Chard Rd., Brookvale. 2100	65198	1986	Premise Match	266m	South
	MOTOR GARAGES & SERVICE STATIONS.	Northside Hi-Performance Centre, 23 Chard Rd., Brookvale. 2100	45301	1985	Premise Match	266m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Northside Hi-Performance Centre, 23 Chard Rd., Brookvale. 2100	33878	1984	Premise Match	266m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Northside Hi Performance Centre., 23 Chard Rd., Brookvale 2100	15230	1983	Premise Match	266m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Northside Hi-Performance Centre, 23 Chard Rd., Brookvale. 2100.	57310	1982	Premise Match	266m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Porter Automotive Services., 23 Chard Rd., Brookvale 2100	3937	1981	Premise Match	266m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Porter Automotive Services., 23 Chard Rd., Brookvale. 2100	58678	1980	Premise Match	266m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Porter Automative Services., 23 Chard Rd., Brookvale. 2100.	46174	1979	Premise Match	266m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Porter Automative Services, 23 Chard Rd., Brookvale. 2100	50677	1978	Premise Match	266m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Porter Automative Services., 23 Chard Rd., Brookvale 2100	34744	1976	Premise Match	266m	South
	MOTOR GARAGES & ENGINEERS(M6S6)	Booney, S. & N., 23 Chard Rd., Brookvale	337338	1970	Premise Match	266m	South
17	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Eastern Automotives., 5 Sydenham Rd., Brookvale 2100	29875	1976	Premise Match	267m	South
	MOTOR GARAGES &/OR ENGINEERS.	Eastern Automotives., 5 Sydenham Rd., Brookvale.2100	58789	1975	Premise Match	267m	South

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17	MOTOR GARAGES &/OR ENGINEERS.	C. & P. Motors., 5 Sydenham Rd., Brookvale	7663	1972	Premise Match	267m	South
	MOTOR GARAGES &/OR ENGINEERS.	C. & P. Motors., 5 Sydenham Rd Brookvale	56416	1971	Premise Match	267m	South
	MOTOR GARAGES & ENGINEERS(M6S6)	C. & P. Motors., 5 Sydenham Rd., BROOKVALE	337479	1970	Premise Match	267m	South
	MOTOR GARAGES & ENGINEERS.	C. & P. Motors., 5 Sydenham Rd Brookvale	37689	1969	Premise Match	267m	South
	MOTOR GARAGES & ENGINEERS	C. & P. Motors., 5 Sydenham Rd Brookvale	21119	1968	Premise Match	267m	South
18	MOTOR GARAGES & ENGINEERS.	Drinkwater Automotive Engineering., 9 Sydenham Rd Brookvale	37690	1969	Premise Match	270m	South
	MOTOR GARAGES & ENGINEERS	Drinkwater Automotive Engineering., 9 Sydenham Rd Brookvale	21121	1968	Premise Match	270m	South
	MOTOR GARAGES & ENGINEERS.	Drinkwater Automotive Engineering., 9 Sydenham Rd Brookvale	6773	1967	Premise Match	270m	South
	MOTOR GARAGES & ENGINEERS.	Drinkwater Automotive Engineering., 9 Sydenham Rd Brookvale	6691	1967	Premise Match	270m	South
19	MOTOR GARAGES &/OR ENGINEERS.	Robinson-Howells., 41 Winbourne Rd Brookvale	56432	1971	Premise Match	272m	South East
20	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Discount Brake Service, 39 Winbourne Rd., Brookvale. 2100	49902	1978	Premise Match	284m	South East
21	MOTOR GARAGES & SERVICE STATIONS.	J.E. Automotive Repairs, 11 Sydenham Rd., Brookvale. 2100	45003	1985	Premise Match	288m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	J.E. Automotive Repairs, 11 Sydenham Rd., Brookvale. 2100	28503	1984	Premise Match	288m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	J.E. Automotive Repairs., 11 Sydenham Rd., Brookvale 2100	14931	1983	Premise Match	288m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	J.E. Automotive Repairs, 11 Sydenham Rd., Brookvale. 2100.	56997	1982	Premise Match	288m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	J E Automotive Repairs., 11 Sydenham Rd., Brookville 2100	3551	1981	Premise Match	288m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	J.E. Automotive Repairs., 11 Sydenham Rd., Brookvale. 2100	58286	1980	Premise Match	288m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	J.E. Automotive Repairs., 11 Sydenham Rd., Brookvale. 2100.	41752	1979	Premise Match	288m	South
22	MOTOR GARAGES &/OR ENGINEERS.	Brookvale Motors., 658 Pittwater Rd Brookvale	7660	1972	Premise Match	288m	South
	MOTOR GARAGES &/OR ENGINEERS.	Brookvale Motors., 658 Pittwater Rd Brookvale	56413	1971	Premise Match	288m	South
	MOTOR GARAGES & ENGINEERS(M6S6)	Brookvale Motors., 658 Pittwater Rd., BROOKVALE	337446	1970	Premise Match	288m	South
	MOTOR GARAGES & ENGINEERS.	Brookvale Motors., 658 Pittwater Rd Brookvale	37687	1969	Premise Match	288m	South
	MOTOR GARAGES & ENGINEERS	Brookvale Motors., 658 Pittwater Rd Brookvale	21117	1968	Premise Match	288m	South
	MOTOR GARAGES & ENGINEERS.	Brookvale Motors., 658 Pittwater Rd Brookvale	6688	1967	Premise Match	288m	South
	MOTOR GARAGES & ENGINEERS.	Brookvale Motors., 658 Pittwater Rd Brookvale	6770	1967	Premise Match	288m	South
	MOTOR GARAGES & ENGINEERS.	Brookvale Motors., 658 Pittwater Rd Brookvale	55732	1966	Premise Match	288m	South
	Motor Garages & Engineers	Brookvale Motors, 658 Pittwater Rd. Brookvale	122307	1965	Premise Match	288m	South

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22	MOTOR GARAGES & ENGINEERS	Brookvale Motors., 658 Pittwater Rd Brookvale	43505	1964	Premise Match	288m	South
	MOTOR GARAGES & ENGINEERS.	Brookvale Motors., 658 Pittwater Rd Brookvale	29001	1962	Premise Match	288m	South
	MOTOR GARAGES & ENGINEERS	Brookvale Motors, 658 Pittwater Rd. BROOKVALE	346746	1961	Premise Match	288m	South
	MOTOR GARAGES & ENGINEERS	Brookvale Motors., 658 Pittwater Rd Brookvale	13718	1959	Premise Match	288m	South
23	MOTOR GARAGES & ENGINEERS	Peninsular Motors Co., 6 West St Brookvale	13725	1959	Premise Match	291m	East
	MOTOR GARAGES & ENGINEERS	Skerman H. S., 4 West St Brookvale	13726	1959	Premise Match	291m	East
	MOTOR GARAGE/ENGINEERS.	Peninsular Motors Co., 6 West St Brookvale	4740	1958	Premise Match	291m	East
	MOTOR GARAGES &/OR ENGINEERS.	Peninsular Engineering Co., 6 West St Brookvale	61276	1956	Premise Match	291m	East
	MOTOR GARAGES &/OR ENGINEERS.	Peninsular Engineering Co., 6 West St Brookvale	57096	1956	Premise Match	291m	East
24	MOTOR GARAGES &/OR ENGINEERS.	Peninsula Motors., 32 Winbourne Rd Brookvale	7676	1972	Premise Match	301m	South East
	MOTOR GARAGES &/OR ENGINEERS.	Peninsula Motors., 32 Winbourne Rd Brookvale	56430	1971	Premise Match	301m	South East
	MOTOR GARAGES & ENGINEERS.	Armstrong & Baker Pty. Ltd., 32 Winbourne Rd Brookvale	28999	1962	Premise Match	301m	South East
	MOTOR GARAGES & ENGINEERS.	Armstrong-Baker Pty Ltd., 32 Winbourne Rd Brookvale	28997	1962	Premise Match	301m	South East
	MOTOR GARAGES & ENGINEERS	Armstrong-Baker Pty Ltd 32 Winbourne Rd., BROOKVALE	346518	1961	Premise Match	301m	South East
	MOTOR GARAGES & ENGINEERS	Armstrong-Baker Pty. Ltd., 32 Winbourne Rd. BROOKVALE	346519	1961	Premise Match	301m	South East
	MOTOR GARAGES & ENGINEERS	Tom's Workshop., 32 Winbourne Rd Brookvale	13728	1959	Premise Match	301m	South East
	MOTOR GARAGES & ENGINEERS	Tom's Workshop., 32 Winbourne Rd Brookvale	13716	1959	Premise Match	301m	South East
	MOTOR GARAGE/ENGINEERS.	Toms Workshop., 32 Winbourne Rd Brookvale	9163	1958	Premise Match	301m	South East
25	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Conwell Automotive., 15 Sydenham Rd., Brookvale. 2100.	3113	1981	Premise Match	307m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Conwell Automotive., 15 Sydenham Rd., Brookvale. 2100	52755	1980	Premise Match	307m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Conwell Automotive., 15 Sydenham Rd., Brookvale. 2100.	41305	1979	Premise Match	307m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	J.E.Automotive Repairs, 15 Sydenham Rd., Brookvale. 2100	50286	1978	Premise Match	307m	South
26	Motor Garages & Service Stations	Cowden Automotive, 3/33 Winbourne Rd, Brookvale 2100	53668	1991	Premise Match	316m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Cowden Automotive, 3/33 Winbourne Rd., Brookvale. 2100	11469	1990	Premise Match	316m	South East
	MOTOR GARAGE & SERVICE STATIONS.	Cowden Automotive, 3/33 Winbourne Rd., Brookvale. 2100	64914	1989	Premise Match	316m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Cowden Automotive, 3/33 Winbourne Rd., Brookvale. 2100	59118	1988	Premise Match	316m	South East
27	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Bradley & Chapman., 2 Sydenham Rd., Brookvale 2100	25165	1976	Premise Match	332m	South
	MOTOR GARAGES &/OR ENGINEERS.	Bradley & Chapman., 2 Sydenham Rd., Brookvale.2100	58473	1975	Premise Match	332m	South
	MOTOR GARAGES &/OR ENGINEERS.	Bradley & Chapman., 2 Sydenham Rd Brookvale	7658	1972	Premise Match	332m	South

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27	MOTOR GARAGES &/OR ENGINEERS.	Bradley & Chapman., 2 Sydenham Rd Brookvale	56411	1971	Premise Match	332m	South
	MOTOR GARAGES &/OR ENGINEERS.	Pankhurst & Tait., 2 Sydenham Rd., Brookvale	61242	1956	Premise Match	332m	South
	MOTOR GARAGES &/OR ENGINEERS.	Panhurst & Tait., 2 Sydenham Rd., Brookvale	44651	1954	Premise Match	332m	South
	MOTOR GARAGES &/OR ENGINEERS.	Pankhurst & Tait., 2 Sydenham Rd Brookvale	49804	1954	Premise Match	332m	South
	MOTOR GARAGES &/OR ENGINEERS.	Pankhurst & Tait., 2 Sydenham Rd., Brookvale	40468	1953	Premise Match	332m	South
28	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Try Lance., 15 West St., Brookvale. 2100	34332	1984	Premise Match	334m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Try Lance., 15 West St., Brookvale 2100	21774	1983	Premise Match	334m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Try, Lance, 15 West St., Brookvale. 2100.	57774	1982	Premise Match	334m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Try Lance., 15 West St., Brookvale 2100	8353	1981	Premise Match	334m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Try Lance., 15 West St., Brookvale. 2100	59040	1980	Premise Match	334m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Lance Try., 15 West St., Brookvale. 2100.	65647	1979	Premise Match	334m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Flew, K. A., 15 West St., Brookvale. 2100	50063	1978	Premise Match	334m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Lance Try, 15 West St., Brookvale. 2100	50361	1978	Premise Match	334m	South East
	MOTOR GARAGES &/OR ENGINEERS.	Flew K. A., 15-17 West St Brookvale	7669	1972	Premise Match	334m	South East
	MOTOR GARAGES &/OR ENGINEERS.	Try L., 15 West St Brookvale	7685	1972	Premise Match	334m	South East
	MOTOR GARAGES &/OR ENGINEERS.	Flew K. A., 15-17 West St Brookvale	56421	1971	Premise Match	334m	South East
	MOTOR GARAGES &/OR ENGINEERS.	Try L., 15 West St Brookvale	56438	1971	Premise Match	334m	South East
	MOTOR GARAGES & ENGINEERS(M6S6)	Flew, K. A., 15-17 West St., BROOKVALE	337813	1970	Premise Match	334m	South East
	MOTOR GARAGES & ENGINEERS(M6S6)	Try, L., 15 West St., BROOKVALE	338792	1970	Premise Match	334m	South East
	MOTOR GARAGES & ENGINEERS.	Flew K. A., 15-17 West St Brookvale	37694	1969	Premise Match	334m	South East
	MOTOR GARAGES & ENGINEERS.	Try L., 15 West St Brookvale	37701	1969	Premise Match	334m	South East
	MOTOR GARAGES & ENGINEERS	Flew K. A., 15-17 West St Brookvale	21125	1968	Premise Match	334m	South East
	MOTOR GARAGES & ENGINEERS	Try L., 15 West St Brookvale	21133	1968	Premise Match	334m	South East
	MOTOR GARAGES & ENGINEERS.	Flew K A 15-17 West St Brookvale	6777	1967	Premise Match	334m	South East
	MOTOR GARAGES & ENGINEERS.	Flew K. A., 15-17 West St Brookvale	6695	1967	Premise Match	334m	South East
	MOTOR GARAGES & ENGINEERS.	Flew K. A., 15-17 West St Brookvale	55737	1966	Premise Match	334m	South East

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28	Motor Garages & Engineers	Flew, K, A., 15-17 West St. Brookvale	122311	1965	Premise Match	334m	South East
	MOTOR GARAGES & ENGINEERS	Flew K. A., 15-17 West St Brookvale	43508	1964	Premise Match	334m	South East
	MOTOR GARAGES & ENGINEERS	Try Lance., 15 West St Brookvale	43517	1964	Premise Match	334m	South East
29	MOTOR GARAGES & SERVICE STATIONS.	Pacific Ford Pty. Ltd., 780 Pittwater Rd., Brookvale. 2100	45333	1985	Premise Match	335m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Pacific.Ford Pty. Ltd., 780 Pittwater Rd., Brookvale. 2100	33907	1984	Premise Match	335m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Pacific Ford Pty. Ltd., 780 Pittwater Rd., Brookvale 2100	21355	1983	Premise Match	335m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Pacific Ford Pty. Ltd., 780 Pittwater Rd., Brookvale. 2100.	57341	1982	Premise Match	335m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Pacific Ford Pty. Ltd., 780 Pittwater Rd., Brookvale 2100	3891	1981	Premise Match	335m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Pacific Ford Pty Ltd., 780 Pittwater Rd., Brookvale. 2100	58633	1980	Premise Match	335m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Pacific Ford Pty. Ltd., 780 Pittwater Rd., Brookvale. 2100.	46128	1979	Premise Match	335m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Pacific Ford Pty. Ltd., 780 Pittwater Rd., Brookvale. 2100	50632	1978	Premise Match	335m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Pacific Ford Pty. Ltd., 780 Pittwater Rd., Brookvale 2100	30626	1976	Premise Match	335m	East
	MOTOR GARAGES &/OR ENGINEERS.	Baldwin Ford Pty. Ltd., 780 Pittwater Rd., Brookvale.2100	58403	1975	Premise Match	335m	East
	MOTOR GARAGES &/OR ENGINEERS.	Baldwin Ford Pty. Ltd., 780 Pittwater Rd., Brookvale 2100	7657	1972	Premise Match	335m	East
	MOTOR GARAGES &/OR ENGINEERS.	Murray Ford Pty. Ltd., 780 Pittwater Rd Brookvale	56428	1971	Premise Match	335m	East
	MOTOR GARAGES & ENGINEERS(M6S6)	Murray Ford Pty. Ltd., 780 Pittwater Rd., BROOKVALE	338308	1970	Premise Match	335m	East
	MOTOR GARAGES & ENGINEERS	Delandro F (Brookvale) Pty. Ltd., 780 Pittwater Rd Brookvale	21120	1968	Premise Match	335m	East
	MOTOR GARAGES & ENGINEERS.	Delandro F (Brookvale) Pty. Ltd., 780 Pittwater Rd Brookvale	6772	1967	Premise Match	335m	East
	MOTOR GARAGES & ENGINEERS.	Delandro F (Brookvale) Pty. Ltd., 780 Pittwater Rd Brookvale	6690	1967	Premise Match	335m	East
	MOTOR GARAGES & ENGINEERS.	Delandro F. (Brookvale) Pty. Ltd., 780 Pittwater Rd, Brookvale	55733	1966	Premise Match	335m	East
	Motor Garages & Engineers	Delandro, F. (Brookvale) Pty. Ltd., 780 Pittwater Rd. Brookvale	122308	1965	Premise Match	335m	East
30	MOTOR GARAGES & SERVICE STATIONS.	T K Motors, 43 Chard Rd., Brookvale. 2100	25489	1993	Premise Match	339m	South East
	Motor Garages & Service Stations	T. K. Motors, 43 Chard Rd., Brookvale 2100	53947	1991	Premise Match	339m	South East
	MOTOR GARAGE & SERVICE STATIONS.	C.M.H. Automotive Repairs Pty. Ltd., 43 Chard Rd., Brookvale. 2100	64698	1989	Premise Match	339m	South East
	MOTOR GARAGES & SERVICE STATIONS.	C.M H. Automotive Repairs Pty. Ltd., 43 Chard Rd., Brookvale. 2100	53823	1988	Premise Match	339m	South East
	MOTOR GARAGES & SERVICE STATIONS.	C.M.H Automotive Repairs Pty. Ltd., 43 Chard Rd., Brookvale. 2100	64295	1986	Premise Match	339m	South East

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31	MOTOR GARAGES &/OR ENGINEERS.	Simonetta Motors Pty. Ltd., 571 Pittwater Rd, Brookvale.2100	59535	1975	Premise Match	346m	East
	MOTOR GARAGES &/OR ENGINEERS.	Simonetta Motors Pty. Ltd., 571 Pittwater Rd Brookvale	7680	1972	Premise Match	346m	East
	MOTOR GARAGES &/OR ENGINEERS.	Simonetta Motors Pty. Ltd., 571 Pittwater Rd Brookvale	56434	1971	Premise Match	346m	East
32	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Brookvale Motor Emporium Pty. Ltd., 648 Pittwater Rd., Brookvale 2100	25182	1976	Premise Match	349m	South
	MOTOR GARAGES &/OR ENGINEERS.	Brookvale Motor Emporium Pty. Ltd., 648 Pittwater Rd., Brookvale.2100	58487	1975	Premise Match	349m	South
	MOTOR GARAGES & ENGINEERS.	Erichsen Motors Pty. Ltd., 646-648 Pittwater Rd Brookvale	37691	1969	Premise Match	349m	South
	MOTOR GARAGES & ENGINEERS	Erichsen Motors Pty. Ltd., 646-648 Pittwater Rd Brookvale	21122	1968	Premise Match	349m	South
	MOTOR GARAGES & ENGINEERS.	Erichsen Motors Pty. Ltd., 646-648 Pittwater Rd Brookvale	6692	1967	Premise Match	349m	South
	MOTOR GARAGES & ENGINEERS.	Erichsen Motors Pty. Ltd., 646-648 Pittwater Rd Brookvale	6774	1967	Premise Match	349m	South
	MOTOR GARAGES & ENGINEERS.	Erichsen Motors Pty Ltd., 646-648 Pittwater Rd., Brookvale	55735	1966	Premise Match	349m	South
	Motor Garages & Engineers	Erichsen Motors Pty. Ltd., 646-648 Pittwater Rd. Brookvale	122309	1965	Premise Match	349m	South
	MOTOR GARAGES & ENGINEERS	Erichsen Motors Pty. Ltd., 646-648 Pittwater Rd Brookvale	43506	1964	Premise Match	349m	South
33	MOTOR GARAGE & SERVICE STATIONS.	Kramer Peter Automotive, 25 Dale St., Brookvale. 2100	5158	1989	Premise Match	353m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Kramer Peter Automotive, 25 Dale St., Brookvale. 2100	59507	1988	Premise Match	353m	South West
34	DRY CLEANERS, PRESSERS &/OR DYERS.	Mackellar Dri-Cleaners., 573B Pittwater Rd., Brookvale 2100	3039	1972	Premise Match	354m	East
	DRY CLEANERS, PRESSERS &/OR DYERS	Mackellar Dri-Cleaners., 573B Pittwater Rd Brookvale	51177	1971	Premise Match	354m	East
	DRY CLEANERS,PRESSERS /DYERS (D710)	Mackellar Dri-Cleaners., 573b Pittwater Rd., Brookvale., 2100	292385	1970	Premise Match	354m	East
	DRY CLEANERS, PRESSERS/ DYERS	Mackellar Dry Cleaners., 573B Pittwater Rd Brookvale	37194	1969	Premise Match	354m	East
	DRY CLEANERS, PRESSERS/DYERS	Mackellar Dry Cleaners., 573B Pittwater Rd Brookvale	20653	1968	Premise Match	354m	East
	DRY CLEANERS, PRESSERS/ DYERS	Mackellar Dry Cleaners., 573B Pittwater Rd Brookvale	6211	1967	Premise Match	354m	East
	DRY CLEANERS, PRESSERS/ DYERS	Mackellar Dry Cleaners., 573B Pittwater Rd Brookvale	55262	1966	Premise Match	354m	East
	Dry Cleaners, Pressers/Dyers	Mackellar Dry Cleaners, 573b Pittwater Rd., Brookvale	76234	1965	Premise Match	354m	East
	DRY CLEANERS, PRESSERS/ DYERS.	Mackellar Dry Cleaners., 573B Pittwater Rd Brookvale	43076	1964	Premise Match	354m	East
	DRY CLEANERS, PRESSERS/DYERS.	Mackellar Dry Cleaners., 573B Pittwater Rd Brookvale	24825	1962	Premise Match	354m	East
	DRY CLEANERS, PRESSERS / DYERS	Mackellar Dry Cleaners 573b Pittwater Rd., Brookvale	299172	1961	Premise Match	354m	East
	DRY CLEANERS, PRESSERS / DYERS	Mackellar Dry Cleaners, 573b Pittwater Rd., Brookvale	299173	1961	Premise Match	354m	East
	DRY CLEANERS, PRESSERS/DYERS	Mackellar Dry Cleaners., 573 Pittwater Rd Brookvale	10121	1959	Premise Match	354m	East
	DRY CLEANERS, PRESSERS & DYERS	Mackellar Dry Cleaners., 573 Pittwater Rd Brookvale	307	1958	Premise Match	354m	East
	DRY CLEANERS, PRESSERS & DYERS.	Mac Kellar Dry Cleaners., 573 Pittwater Rd Brookvale	54897	1956	Premise Match	354m	East
35	MOTOR GARAGE & SERVICE STATIONS.	Brookvale Auto Service, 7 Roger St., Brookvale. 2100	64673	1989	Premise Match	355m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Brookvale Auto Service, 7 Roger St., Brookvale. 2100	53798	1988	Premise Match	355m	South West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
36	MOTOR GARAGES & SERVICE STATIONS.	Simonetta Motors Pty Ltd., 24 Roger St., Brookvale. 2100	25447	1993	Premise Match	364m	South West
	Motor Garages & Service Stations	Simonetta Motors Pty. Ltd., 24 Roger St., Brookvale 2100	53891	1991	Premise Match	364m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Simonetta Motors Pty. Ltd., 24 Roger St., Brookvale. 2100	12144	1990	Premise Match	364m	South West
	MOTOR GARAGE & SERVICE STATIONS.	Simonetta Motors Pty.Ltd., 24 Roger St., Brookvale. 2100	5564	1989	Premise Match	364m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Simonetta Motors Pty.ltd., 24 Roger St., Brookvale. 2100	59954	1988	Premise Match	364m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Simonetta Motors Pty.Ltd., 24 Roger St., Brookvale. 2100	65454	1986	Premise Match	364m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Simonetta Motors Pty.Ltd., 24 Roger St., Brookvale. 2100	45565	1985	Premise Match	364m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Simonetta Motors Pty. Ltd., 24 Roger St., Brookvale. 2100	34130	1984	Premise Match	364m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Simonetta Motors Pty Ltd., 24 Roger St., Brookvale 2100	21583	1983	Premise Match	364m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Simonetta Motors Pty. Ltd., 24 Roger St., Brookvale. 2100.	57572	1982	Premise Match	364m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Simonetta Motors Pty.Ltd., 24 Roger St., Brookvale 2100	8163	1981	Premise Match	364m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Simonetta Motors Pty.Ltd., 24 Roger St., Brookvale. 2100	58841	1980	Premise Match	364m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Simonetta Motors Pty.Ltd., Rear 24., Roger St., Brookvale. 2100.	46337	1979	Premise Match	364m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Simonetta Motors Pty. Ltd., Rear 24 Roger St., Brookvale. 2100	50833	1978	Premise Match	364m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Ormsby F., 24 Roger St., Brookvale 2100	30615	1976	Premise Match	364m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Ormsby, F., 24 Roger St., Brookvale.2100	59349	1975	Premise Match	364m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Ormsby F., 24 Roger St Brookvale	7675	1972	Premise Match	364m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Ormsby F., 24 Roger St Brookvale	56429	1971	Premise Match	364m	South West
	MOTOR GARAGES & ENGINEERS(M6S6)	Ormsby, F., 24 Roger St., BROOKVALE	338360	1970	Premise Match	364m	South West
	MOTOR GARAGES & ENGINEERS.	Simonetta D., 24 Roger St Brookvale	37699	1969	Premise Match	364m	South West
	MOTOR GARAGES & ENGINEERS	Simonetta D., 24 Roger St Brookvale	21131	1968	Premise Match	364m	South West
	MOTOR GARAGES & ENGINEERS.	Simonetta D., 24 Roger St Brookvale	6783	1967	Premise Match	364m	South West
	MOTOR GARAGES & ENGINEERS.	Simonetta D., 24 Roger St Brookvale	6701	1967	Premise Match	364m	South West
	MOTOR GARAGES & ENGINEERS.	Simonetta D., 24 Roger St Brookvale	55743	1966	Premise Match	364m	South West
37	MOTOR GARAGES &/OR ENGINEERS.	Figgis Motors Pty. Ltd., 14 West St., Brookvale.2100	58871	1975	Premise Match	364m	East
	MOTOR GARAGES &/OR ENGINEERS.	Figgis Motors Pty. Ltd., 14 West St Brookvale	7667	1972	Premise Match	364m	East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
37	MOTOR GARAGES &/OR ENGINEERS.	Figgis Motors Pty. Ltd., 14 West St Brookvale	56419	1971	Premise Match	364m	East
	MOTOR GARAGES & ENGINEERS(M6S6)	Figgis Motors Pty. Ltd., 14 West St., BROOKVALE	337803	1970	Premise Match	364m	East
	MOTOR GARAGES & ENGINEERS.	Figgis Motors., 14 West St Brookvale	37693	1969	Premise Match	364m	East
	MOTOR GARAGES & ENGINEERS	Figgis Motors., 14 West St Brookvale	21124	1968	Premise Match	364m	East
	MOTOR GARAGES & ENGINEERS.	Figgis Motors., 14 West St Brookvale	6694	1967	Premise Match	364m	East
	MOTOR GARAGES & ENGINEERS.	Figgis Motors., 14 West St Brookvale	6776	1967	Premise Match	364m	East
	MOTOR GARAGES & ENGINEERS.	Figgis Motors., 14 West St Brookvale	55736	1966	Premise Match	364m	East
	Motor Garages & Engineers	Figgis Motors, 14 West St. Brookvale	122310	1965	Premise Match	364m	East
	MOTOR GARAGES & ENGINEERS	Figgis Motors., 14 West St Brookvale	43507	1964	Premise Match	364m	East
38	MOTOR GARAGES &/OR ENGINEERS.	Vale Auto Service., 24 Carter St Brookvale	43862	1953	Premise Match	382m	South East
39	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Hans Noelle Motors., 11 Orchard Rd., Brookvale 2100	30225	1976	Premise Match	388m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Three-Four-O., 11 Orchard Rd., Brookvale 2100	35022	1976	Premise Match	388m	South
	MOTOR GARAGES &/OR ENGINEERS.	Three-Four-O, 11 Orchard Rd., Brookvale.2100	59637	1975	Premise Match	388m	South
	MOTOR GARAGES &/OR ENGINEERS.	Pycke M., 11 Orchard Rd Brookvale	7678	1972	Premise Match	388m	South
	MOTOR GARAGES &/OR ENGINEERS.	Three-Four-O., 11 Orchard Rd Brookvale	7683	1972	Premise Match	388m	South
	MOTOR GARAGES &/OR ENGINEERS.	Pycke M., 11 Orchard Rd Brookvale	56433	1971	Premise Match	388m	South
	MOTOR GARAGES &/OR ENGINEERS.	Three-Four-O., 11 Orchard Rd., Brookvale	56436	1971	Premise Match	388m	South
	MOTOR GARAGES & ENGINEERS.	Bombardier Motors., 11 Orchard Rd Brookvale	37686	1969	Premise Match	388m	South
	MOTOR GARAGES & ENGINEERS	Bombardier Motors., 11 Orchard Rd Brookvale	21116	1968	Premise Match	388m	South
	MOTOR GARAGES & ENGINEERS.	Bombardier Motors., 11 Orchard Rd Brookvale	6769	1967	Premise Match	388m	South
	MOTOR GARAGES & ENGINEERS.	Bombardier Motors., 11 Orchard Rd Brookvale	6687	1967	Premise Match	388m	South
	MOTOR GARAGES & ENGINEERS.	Bombardier Motors., 11 Orchard Rd Brookvale	55731	1966	Premise Match	388m	South
	Motor Garages & Engineers	Bombardier Motors, 11 Orchard Rd. Brookvale	122306	1965	Premise Match	388m	South
40	MOTOR GARAGES & ENGINEERS(M6S6)	H. & D. Speed Equipment., 43 Sydenham Rd., BROOKVALE	337964	1970	Premise Match	393m	South East
	MOTOR GARAGES & ENGINEERS.	H. & D. Speed Equipment., 43 Sydenham Rd Brookvale	37696	1969	Premise Match	393m	South East
	MOTOR GARAGES & ENGINEERS	H. & D. Speed Equipment., 43 Sydenham Rd Brookvale	21128	1968	Premise Match	393m	South East
	MOTOR GARAGES & ENGINEERS.	H. & D. Speed Equipment., 43 Sydenham Rd Brookvale	6780	1967	Premise Match	393m	South East
	MOTOR GARAGES & ENGINEERS.	H. & D. Speed Equipment., 43 Sydenham Rd Brookvale	6698	1967	Premise Match	393m	South East
	MOTOR GARAGES & ENGINEERS.	Hunter & Delbridge., 43 Sydenham Rd Brookvale	55741	1966	Premise Match	393m	South East
	Motor Garages & Engineers	Hunter & Delbridge, 43 Sydenham Rd. Brookvale	122315	1965	Premise Match	393m	South East
	Motor Garages & Engineers	Scientific Gas Flow Co., 43 Sydenham Rd. Brookvale	122317	1965	Premise Match	393m	South East

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40	MOTOR GARAGES & ENGINEERS	Hunter & Delbridge., 43 Sydenham Rd Brookvale	43512	1964	Premise Match	393m	South East
	MOTOR GARAGES & ENGINEERS	Scientific Gas Flow Co., 43 Sydenham Rd Brookvale	43515	1964	Premise Match	393m	South East
41	MOTOR GARAGE & SERVICE STATIONS.	Crawford, Col., 20 Roger St., Brookvale. 2100	64916	1989	Premise Match	399m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Crawford Col., 20 Roger St., Brookvale. 2100	59121	1988	Premise Match	399m	South West
42	MOTOR GARAGES & SERVICE STATIONS.	Kramer, Peter Automotive, 24 Dale St., Brookvale. 2100	64964	1986	Premise Match	414m	South West
43	MOTOR GARAGE/ENGINEERS.	Steward Repair Service., 18 Roger St Brookvale	5024	1958	Premise Match	418m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Mackellar Motor Repairs., 18 Roger St Brookvale	58015	1956	Premise Match	418m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Mackellar Motor Repairs., 18 Roger St Brookvale	57086	1956	Premise Match	418m	South West
44	MOTOR GARAGES & ENGINEERS	Goddard B. D. Pty. Ltd., 786 Pittwater Rd Brookvale	21126	1968	Road Intersection	419m	East
	MOTOR GARAGES & ENGINEERS.	Goddard B. D. Pty. Ltd., 786 Pittwater Rd Brookvale	6696	1967	Road Intersection	419m	East
	MOTOR GARAGES & ENGINEERS.	Goddard B. D. Pty. Ltd., 786 Pittwater Rd Brookvale	6778	1967	Road Intersection	419m	East
	MOTOR GARAGES & ENGINEERS.	Goddard B. D. Pty. Ltd., 786 Pittwater Rd., Brookvale	55738	1966	Road Intersection	419m	East
	Motor Garages & Engineers	Goddard, B. D. Pty. Ltd., 786 Pittwater Rd. Brookvale	122312	1965	Road Intersection	419m	East
	MOTOR GARAGES & ENGINEERS	Goddard, B.D. Pty. Ltd., 786 Pittwater Rd., Brookvale	65447	1964	Road Intersection	419m	East
	MOTOR GARAGES & ENGINEERS.	Goddard B D Pty Ltd., Cnr Pittwater & Carter Rds., Brookvale	28998	1962	Road Intersection	419m	East
	MOTOR GARAGES & ENGINEERS.	Goddard B. D. Pty. Ltd., 786 Pittwater Rd Brookvale	29004	1962	Road Intersection	419m	East
	MOTOR GARAGES & ENGINEERS	Goddard B D Pty Ltd Cnr. Pittwater & Carter Rds., BROOKVALE	347238	1961	Road Intersection	419m	East
	MOTOR GARAGES & ENGINEERS	Goddard, B. D. Pty. Ltd., 786 Pittwater Rd. BROOKVALE	347239	1961	Road Intersection	419m	East
	MOTOR GARAGES & ENGINEERS	Goddard B. D., 786 Pittwater Rd Brookvale	13720	1959	Road Intersection	419m	East
	MOTOR GARAGE/ENGINEERS.	Goddard B. D., 786 Pittwater Rd Brookvale	4175	1958	Road Intersection	419m	East
	MOTOR GARAGES &/OR ENGINEERS.	Mills Garage & Service Station (B.D. Goddard, Propr.) Cnr Pittwater & Carter Rds., Brookvale	40375	1953	Road Intersection	419m	East
	MOTOR GARAGES &/OR ENGINEERS.	Mills Garage & Service Station (B. D. Goddard Propr.)., Cnr Pittwater & Carter Rds., Brookvale	31963	1952	Road Intersection	419m	East
	MOTOR SERVICE STATIONS-PETROL, Etc.	Mills Garage and Service Station (B. D. Goddard, Propr.), Cnr. Pittwater and Carter Rds., Brookvale	86213	1950	Road Intersection	419m	East
	MOTOR GARAGES &/OR ENGINEERS	Mills Garage and Service Station (B. D. Goddard, Propr.)., Cnr. Pittwater. and Carter Rds., Brookvale	84093	1950	Road Intersection	419m	East
	MOTOR GARAGES &/OR ENGINEERS.	Mills Garage and Service Station (B. D. Goddard, Propr.)., Cnr. Pittwater And Carter Rds., Brookvale	22634	1948-49	Road Intersection	419m	East
	MOTOR SERVICE STATIONS-PETROL, ETC.	Mills Garage Service Station (B.D. Goddard, Propr)., Cnr. Pittwater and Carter Rd., Brookvale	26644	1948-49	Road Intersection	419m	East
45	MOTOR GARAGES & SERVICE STATIONS.	Heinzei, M. & J. & Son, Unit 2/21 Orchard Rd., Brookvale. 2100	11693	1990	Premise Match	422m	South
	MOTOR GARAGES & ENGINEERS	Kellendonk W. F. Pty. Ltd., 21 Orchard Rd Brookvale	43513	1964	Premise Match	422m	South
46	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	J.R.C. Engineering., 37 Carter Rd., Brookvale. 2100.	41754	1979	Premise Match	435m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	J.R.C. Engineering., 37 Carter Rd, Brookvale. 2100	50287	1978	Premise Match	435m	East

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47	MOTOR GARAGE & SERVICE STATIONS.	Crawford, Col Pty. Ltd., 16 Roger St., Brookvale. 2100	64917	1989	Premise Match	437m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Crawford Col Pty. Ltd., 16 Roger St., Brookvale. 2100	59122	1988	Premise Match	437m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Crawford, Col. Pty. Ltd., 16 Roger St., Brookvale. 2100	64517	1986	Premise Match	437m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Crawford Col. Pty. Ltd., 16 Roger St., Brookvale. 2100	39517	1985	Premise Match	437m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Crawford Col. Pty. Ltd., 16 Roger St., Brookvale. 2100	28100	1984	Premise Match	437m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Crawford Col (Retail) Pty. Ltd., 16 Roger St., Brookvale. 2100	14523	1983	Premise Match	437m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Crawford, Col (Retail) Pty. Ltd, 16 Roger St., Brookvale. 2100.	56584	1982	Premise Match	437m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Crawford, Col (Retail) Pty. Ltd., 16 Roger St., Brookvale. 2100.	3136	1981	Premise Match	437m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Crawford Col (Retail) Pty. Ltd., 16 Roger St., Brookvale. 2100	52778	1980	Premise Match	437m	South West
48	MOTOR GARAGES & ENGINEERS(M6S6)	Erskine & Prothero., 14 Orchard Rd., BROOKVALE	337738	1970	Premise Match	452m	South
	MOTOR GARAGES & ENGINEERS.	Erskine & Prothero., 14 Orchard Rd Brookvale	37692	1969	Premise Match	452m	South
	MOTOR GARAGES & ENGINEERS	Erskine & Prothero., 14 Orchard Rd Brookvale	21123	1968	Premise Match	452m	South
	MOTOR GARAGES & ENGINEERS.	Erskine & Prothero., 14 Orchard Rd Brookvale	6775	1967	Premise Match	452m	South
	MOTOR GARAGES & ENGINEERS.	Erskine & Prothero., 14 Orchard Rd Brookvale	6693	1967	Premise Match	452m	South
49	MOTOR GARAGES & SERVICE STATIONS.	Kostas Dimas Automotives, 29 Orchard Rd., Brookvale. 2100	19058	1993	Premise Match	454m	South
	Motor Garages & Service Stations	Kostas Dimas Automotives, 29 Orchard Rd., Brookvale 2100	53767	1991	Premise Match	454m	South
	MOTOR GARAGES & SERVICE STATIONS.	Kostas Dimas Automotives, 29 Orchard Rd., Brookvale. 2100	11759	1990	Premise Match	454m	South
	MOTOR GARAGE & SERVICE STATIONS.	Kostas Dimas Automotives, 29 Orchard Rd., Brookvale. 2100	5157	1989	Premise Match	454m	South
50	MOTOR GARAGE & SERVICE STATIONS.	Giles Muffler Service Pty. Ltd., 14 Roger St., Brookvale. 2100	65101	1989	Premise Match	455m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Giles Muffler Service Pty. Ltd., 14 Roger St., Brookvale. 2100	59329	1988	Premise Match	455m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Giles Muffler Service Pty. Ltd., 14 Roger St., Brookvale. 2100	64742	1986	Premise Match	455m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Giles Muffler Service Pty. Ltd., 14 Roger St., Brookvale. 2100	39745	1985	Premise Match	455m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Giles Muffler Service Pty Ltd., 14 Roger St., Brookvale. 2100	28321	1984	Premise Match	455m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Leonards Muffler Service Co., 14 Roger St., Brookvale 2100	15014	1983	Premise Match	455m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Leonards Muffler Service Co., 14 Roger St., Brookvale. 2100.	57087	1982	Premise Match	455m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Leonards Muffler Service Co., 14 Roger St., Brookvale 2100	3644	1981	Premise Match	455m	South West

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50	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Leonards Muffler Service Co., 14 Roger St., Brookvale. 2100	58379	1980	Premise Match	455m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Leonards Muffler Service Co., 14 Roger St., Brookvale. 2100.	65657	1979	Premise Match	455m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Leonards Muffler Service Co., 14 Roger St., Brookvale. 2100	50374	1978	Premise Match	455m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Leonards Muffler Service Co., 14 Roger St., Brookvale 2100	30372	1976	Premise Match	455m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Leonards Muffler Service Co., 14 Roger St., Brookvale.2100	59150	1975	Premise Match	455m	South West
	MOTOR GARAGES & ENGINEERS(M6S6)	Simonetta, D., 14 Roger St., BROOKVALE	338602	1970	Premise Match	455m	South West
51	MOTOR GARAGES & SERVICE STATIONS.	W.R. & J. Albrecht Engineering Pty. Ltd., 244 Harbord Rd., Brookvale. 2100	45800	1985	Premise Match	467m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Supreme Service Station, 794 Pittwater Rd., Brookvale. 2100	34211	1984	Premise Match	467m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	W R & J Albrecht Engineering Pty. Ltd., 244 Harbord Rd., Brookvale. 2100	34361	1984	Premise Match	467m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Supreme Service Station., 794 Pittwater Rd., Brookvale 2100	21661	1983	Premise Match	467m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	W.R. & J. Albrecht Engineering Pty. Ltd., 244 Harbord Rd., Brookvale 2100	21804	1983	Premise Match	467m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Supreme Service Station, 794 Pittwater Rd., Brookvale. 2100.	57652	1982	Premise Match	467m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	W.R. & J. Albrecht Engineering Pty. Ltd., 244 Harbord Rd., Brookvale. 2100.	57804	1982	Premise Match	467m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Supreme Service Station., 794 Pittwater Rd., Brookvale 2100	8239	1981	Premise Match	467m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	W. R. & J. Albrecht Engineering Pty Ltd., 244 Harbord Rd., Brookvale 2100	8374	1981	Premise Match	467m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	W.R. & J. Albrecht Engineering Pty. Ltd., 244 Harbord Rd., Brookvale. 2100	59063	1980	Premise Match	467m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Supreme Service Station., 794 Pittwater Rd., Brookvale. 2100.	46421	1979	Premise Match	467m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	W.R. & J. Albrecht Engineering Pty. Ltd., 244 Harbord Rd., Brookvale. 2100.	46560	1979	Premise Match	467m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Supreme Service Station, 794 Pittwater Rd., Brookvale. 2100	50901	1978	Premise Match	467m	East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
51	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	W.R. & J. Albrecht Engineering Pty. Ltd., 244 Harbord Rd., Brookvale. 2100	51046	1978	Premise Match	467m	East
	MOTOR GARAGES &/OR ENGINEERS.	Car Sales Pty. Ltd., 790 Pittwater Rd Brookvale	7664	1972	Premise Match	467m	East
	MOTOR GARAGES &/OR ENGINEERS.	Car Sales Pty. Ltd., 790 Pittwater Rd Brookvale	56417	1971	Premise Match	467m	East
	MOTOR GARAGES & ENGINEERS	Supreme Service Station., 246 Harbord Rd Brookvale	43516	1964	Premise Match	467m	East
	MOTOR GARAGES & ENGINEERS.	Supreme Service Station., 246 Harbord Rd Brookvale	29009	1962	Premise Match	467m	East
52	MOTOR GARAGES & SERVICE STATIONS.	Brookvale Mechanical & LP Gas, 37 Orchard Rd., Brookvale. 2100	39266	1985	Premise Match	474m	South
53	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Alder Performance Engineering., 39 Mitchell Rd., Brookvale 2100	23921	1976	Premise Match	478m	South
	MOTOR GARAGES &/OR ENGINEERS.	Alder Performance Engineering., 39 Mitchell Rd., Brookvale.2100	58312	1975	Premise Match	478m	South
54	MOTOR GARAGES & SERVICE STATIONS.	Harder. Max Motors, 240 Harbord Rd., Brookvale. 2100	19010	1993	Premise Match	481m	East
	Motor Garages & Service Stations	Harder, Max Motors, 240 Harbord Rd., Brookvale 2100	97193	1991	Premise Match	481m	East
	MOTOR GARAGES & SERVICE STATIONS.	Harder Max Motors, 240 Harbord Rd., Brookvale. 2100	11685	1990	Premise Match	481m	East
	MOTOR GARAGE & SERVICE STATIONS.	Harder Max Motors, 240 Harbord Rd., Brookvale. 2100	65170	1989	Premise Match	481m	East
	MOTOR GARAGES & SERVICE STATIONS.	Harder, Max Motors, 240 Harbord Rd., Brookvale. 2100	59411	1988	Premise Match	481m	East
	MOTOR GARAGES & SERVICE STATIONS.	Harder, Max Motors, 240 Harbord Rd., Brookvale. 2100	64847	1986	Premise Match	481m	East
	MOTOR GARAGES & SERVICE STATIONS.	Harder Max Motors, 240 Harbord Rd., Brookvale. 2100	44949	1985	Premise Match	481m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Harder Max Motors, 240 Harbord Rd., Brookvale. 2100	28448	1984	Premise Match	481m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Harder Max Motors., 240 Harbord Rd., Brookvale. 2100	14876	1983	Premise Match	481m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Harder, Max Motors, 240 Harbord Rd., Brookvale. 2100.	56941	1982	Premise Match	481m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Harder Max Motors., 240 Harbord Rd., Brookvale 2100	3495	1981	Premise Match	481m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Harder, Max Motors., 240 Harbord Rd., Brookvale. 2100	58228	1980	Premise Match	481m	East
55	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Clement Motors, 232 Harbord Rd., Brookvale. 2100	49816	1978	Premise Match	481m	East
56	MOTOR GARAGES &/OR ENGINEERS.	Erichsen Motors Pty. Ltd., 475 Pittwater Rd Brookvale	7666	1972	Premise Match	483m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Erichsen Motors Pty. Ltd., 475 Pittwater Rd Brookvale	56418	1971	Premise Match	483m	South West
	MOTOR GARAGES & ENGINEERS(M6S6)	Erichsen Motors Pty. Ltd., 475 Pittwater Rd., BROOKVALE	337734	1970	Premise Match	483m	South West
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Borzi V. & D., 475 Pittwater Rd Brookvale	37952	1962	Premise Match	483m	South West
	MOTOR SERVICE STATIONS—PETROL, OIL, Etc.	Borzi, V. & D., 475 Pittwater Rd. BROOKVALE	350386	1961	Premise Match	483m	South West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
56	MOTOR GARAGES & ENGINEERS	Bombardier Motors Sales Pty. Ltd., 475 Pittwater Rd Brookvale	13717	1959	Premise Match	483m	South West
	MOTOR SERVICE STATIONS-PETROL,. OIL, ETC.	Borzi V. & D., 475 Pittwater Rd Brookvale	24022	1959	Premise Match	483m	South West
	MOTOR GARAGE/ENGINEERS.	Bombardier Motors Sales Pty. Ltd., 475 Pittwater Rd Brookvale	672	1958	Premise Match	483m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Bombardier S., 475 Pittwater Rd Brookvale	57287	1956	Premise Match	483m	South West
57	MOTOR GARAGES & SERVICE STATIONS.	Dunbar W E Smash Repairs Pty Ltd., 8 Roger St., Brookvale. 2100	18903	1993	Premise Match	498m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Dunbar W. E. Smash Repairs Pty. Ltd, 8 Roger St., Brookvale. 2100	11505	1990	Premise Match	498m	South West
	MOTOR GARAGE & SERVICE STATIONS.	Dunbar, W. E. Pty. Ltd., 8 Roger St., Brookvale. 2100	64959	1989	Premise Match	498m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Dunbar W. E. Pty. Ltd, 8 Roger St Brookvale. 2100	59173	1988	Premise Match	498m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Dunbar, W. E. Pty. Ltd., 8 Roger St., Brookvale. 2100	64565	1986	Premise Match	498m	South West
	MOTOR GARAGES & SERVICE STATIONS.	Dunbar W. E Pty. Ltd., 8 Roger St., Brookvale. 2100	39572	1985	Premise Match	498m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Dunbar. W. E. Pty. Ltd., 8 Roger St., Brookvale. 2100	28154	1984	Premise Match	498m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Dunbar W. E. Pty. Ltd., 8 Roger St., Brookvale. 2100	14578	1983	Premise Match	498m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Dunbar, W. E. Pty. Ltd., 8 Roger St., Brookvale. 2100.	56640	1982	Premise Match	498m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Dunbar, W. E. Pty. Ltd., 8 Roger St., Brookvale. 2100.	3195	1981	Premise Match	498m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Dunbar, W. E. Pty. Ltd., 8 Roger St., Brookvale. 2100	52836	1980	Premise Match	498m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Dunbar W E. Pty. Ltd., 8 Roger St., Brookvale. 2100.	41382	1979	Premise Match	498m	South West

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Dry Cleaners, Motor Garages & Service Stations Road or Area Matches (1948-1993)

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Note: The Universal Business Directories were published between 1948 and 1993. Dry Cleaners, Motor Garages & Service Stations have been extracted from all of these directories except the following years 1951, 1955, 1957, 1960, 1963, 1973, 1974, 1977, 1987.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
58	MOTOR GARAGE & SERVICE STATIONS.	Caltex Service Station Brookvale, 46 Pittwater Rd., Brookvale. 2100	64814	1989	Road Match	0m
	MOTOR GARAGES & SERVICE STATIONS.	Ampol Boronia Park Sennce Station, 140 Pittwater Rd., Boronia Park. 2111	53408	1988	Road Match	0m
	MOTOR GARAGES & SERVICE STATIONS.	Caltex Service Station Brookvale, 46 Pittwater Rd., Brookvale. 2100	53930	1988	Road Match	0m
	MOTOR GARAGES & SERVICE STATIONS.	Caltex Service Station Brookvale, 46 Pittwater Rd., Brookvale. 2100	64393	1986	Road Match	0m
	MOTOR GARAGES & SERVICE STATIONS.	Fisher Motors Pty Ltd., 467 Pittwater Rd., Brookvale. 2100	39700	1985	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Fisher Motors Pty Ltd., 467 Pittwater Rd., Brookvale. 2100	28275	1984	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Fisher Motors Pty. Ltd., 467 Pittwater Rd., Brookvale 2100	14698	1983	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Fisher Motors Pty. Ltd., 467 Pittwater Rd., Brookvale. 2100	3309	1981	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Fisher Motors Pty Ltd., 467 Pittwater Rd., Brookvale. 2100	52965	1980	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Fisher Motors Pty. Ltd., 467 Pittwater Rd., Brookvale. 2100.	41513	1979	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Fisher Motors Pty. Ltd., 467 Pittwater Rd., Brookvale 2100	30018	1976	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Fisher Motors Pty. Ltd., 467 Pittwater Rd., Brookvale 2100	30019	1976	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Fisher Motors Pty. Ltd., 467 Pittwater Rd Brookvale	7668	1972	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Fisher Motors Pty. Ltd., 467 Pittwater Rd Brookvale	16494	1972	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Fisher Motors Pty. Ltd., 467 Pittwater Rd Brookvale	56420	1971	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Fisher Motors Pty. Ltd., 467 Pittwater Rd Brookvale	63079	1971	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL,OIL,Etc.	Ensign Service Station., Pittwater Rd., BROOKVALE	341031	1970	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL,OIL,Etc.	Fisher Motors Pty. Ltd., 467 Pittwater Rd., BROOKVALE	341117	1970	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Booney S. & N., Pittwater Rd Brookvale	47571	1969	Road Match	0m
	MOTOR GARAGES & ENGINEERS.	BP Corvette Service Station., Pittwater Rd Brookvale	37685	1969	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Ensign Service Station., Pittwater Rd Brookvale	47573	1969	Road Match	0m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
58	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Fisher Motors Pty. Ltd., 467 Pittwater Rd Brookvale	47575	1969	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Booney S. & N., Pittwater Rd Brookvale	30993	1968	Road Match	0m
	MOTOR GARAGES & ENGINEERS	BP Corvette Service Station., Pittwater Rd Brookvale	21115	1968	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Ensign Service Station., Pittwater Rd Brookvale	30995	1968	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Fisher Motors Pty. Ltd., 467 Pittwater Rd Brookvale	30996	1968	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Booney S. & N., Pittwater Rd Brookvale	15474	1967	Road Match	0m
	MOTOR GARAGES & ENGINEERS.	BP Corvette Service Station., Pittwater Rd Brookvale	6768	1967	Road Match	0m
	MOTOR GARAGES & ENGINEERS.	BP Corvette Service Station., Pittwater Rd Brookvale	6686	1967	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Ensign Service Station., Pittwater Rd Brookvale	15476	1967	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Fisher Motors Pty. Ltd., 467 Pittwater Rd Brookvale	15477	1967	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Booney S. & N., Pittwater Rd Brookvale	1051	1966	Road Match	0m
	MOTOR GARAGES & ENGINEERS.	BP Corvette Service Station., Pittwater Rd Brookvale	55730	1966	Road Match	0m
	MOTOR GARAGES & ENGINEERS.	Drinkwater Automotive Engineering., 457 Pittwater Rd Brookvale	55734	1966	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Ensign Service Station., Pittwater Rd Brookvale	1053	1966	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Bombardier Motor Sales Pty. Ltd., 305 Pittwater Rd Brookvale	43504	1964	Road Match	0m
	MOTOR GARAGES & ENGINEERS.	Bombardier Motor Sales Pty. Ltd., 305 Pittwater Rd Brookvale	29000	1962	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Bombardier Motor Sales Pty. Ltd., 305 Pittwater Rd. BROOKVALE	346681	1961	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Try Lance., 220 Pittwater Rd Brookvale	13729	1959	Road Match	0m
	MOTOR GARAGE/ENGINEERS.	Brookvale Motors., Pittwater Rd Brookvale	717	1958	Road Match	0m
	DRY CLEANERS, PRESSERS & DYERS	Mercury Dry Cleaners., Pittwater Rd Brookvale	317	1958	Road Match	0m
	MOTOR GARAGE/ENGINEERS.	Try Lance., 220 Pittwater Rd Brookvale	9179	1958	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Brookvale Motors., Pittwater Rd Brookvale	57329	1956	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Brookvale Motors., Pittwater Rd., Brookvale	57060	1956	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Goddard B. D., Pittwater Rd Brookvale	57714	1956	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Try Lance., 220 Pittwater Rd Brookvale	61595	1956	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Bombardier S., 240 Pittwater Rd Brookvale	48919	1954	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Brookvale House Car Repairs., 220 Pittwater Rd Brookvale	48962	1954	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Brookvale Motors., Pittwater Rd Brookvale	48963	1954	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Brookvale Motors., Pittwater Rd Brookvale	44596	1954	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Goddard B D., Pittwater Rd Brookvale	44622	1954	Road Match	0m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
58	MOTOR GARAGES &/OR ENGINEERS.	Goddard B. D., Pittwater Rd Brookvale	49326	1954	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Lance Try's Service Station., 220 Pittwater Rd Brookvale	49551	1954	Road Match	0m
	DRY CLEANERS, PRESSERS & DYERS.	Mercury Dry Cleaners., 343 Pittwater Rd Brookvale	44448	1954	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Try Lance., 220 Pittwater Rd., Brookvale	54227	1954	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Bombardier S., 240 Pittwater Rd Brookvale	36634	1953	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Brookvale House Car Repairs., 220 Pittwater Rd Brookvale	36675	1953	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Goddard B D., Pittwater Rd Brookvale	36448	1953	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Goddard B. D., Pittwater Rd Brookvale	40052	1953	Road Match	0m
	DRY CLEANERS, PRESSERS & DYERS.	Mercury Dry Cleaners., 343 Pittwater Rd Brookvale	36273	1953	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Try Lance., 220 Pittwater Rd., Brookvale	43846	1953	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	James C., Pitt Water Rd Brookvale	31798	1952	Road Match	0m
	DRY CLEANERS, PRESSERS & DYERS.	Mercury Dry Cleaners., 343 Pittwater Rd Brookvale	27184	1952	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Try Lance., 220 Pittwater Rd Brookvale	32349	1952	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS	James, C., Pittwater Rd., Brookvale	83920	1950	Road Match	0m
	DRY CLEANERS, PRESSERS & DYERS	Littles Dry Cleaner, 489 Pittwater Rd., Dee Why	35424	1950	Road Match	0m
	DRY CLEANERS, PRESSERS & DYERS	Mercury Dry Cleaners, 343 Pittwater Rd., Brookvale	35525	1950	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS	Try, Lance, 220 Pittwater Rd., Brookvale	84483	1950	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	James C., Pittwater Rd Brookvale	22498	1948-49	Road Match	0m
	DRY CLEANERS, PRESSERS & DYERS.	Littles Dry Cleaner., 489 Pittwater Rd Dee Why	17285	1948-49	Road Match	0m
	DRY CLEANERS, PRESSERS & DYERS.	Mercury Dry Cleaners., 343 Pittwater Rd Brookvale	17364	1948-49	Road Match	0m
	MOTOR GARAGES &/OR ENGINEERS.	Try Lance., 220 Pittwater Rd Brookvale	22959	1948-49	Road Match	0m
59	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	White Motors., Mitchell Rd., Brookvale 2100	35208	1976	Road Match	60m
	MOTOR GARAGES &/OR ENGINEERS.	White Motors, Mitchell Rd., Brookvale.2100	59776	1975	Road Match	60m
60	MOTOR GARAGES & ENGINEERS	Madden & Iverach., Roger St Brookvale	13723	1959	Road Match	220m
	MOTOR GARAGE/ENGINEERS.	Madden & Iverach., Roger St Brookvale	4532	1958	Road Match	220m
	MOTOR GARAGES &/OR ENGINEERS.	Madden & Iverach., Roger St Brookvale	58040	1956	Road Match	220m
	MOTOR GARAGES &/OR ENGINEERS.	Madden & Iverach., Roger St Brookvale	49649	1954	Road Match	220m
	MOTOR GARAGES &/OR ENGINEERS.	Madden & Iverach., Roger St Brookvale	40330	1953	Road Match	220m
	MOTOR GARAGES &/OR ENGINEERS.	Madden & Iverach., Roger St Brookvale	36457	1953	Road Match	220m
	MOTOR GARAGES &/OR ENGINEERS.	Coady And Noughton., Roger St., Brookvale	17907	1948-49	Road Match	220m
61	MOTOR SERVICE STATIONS-PETROL,OIL,Etc.	Hall, W., Warringah Rd., BROOKVALE	341192	1970	Road Match	340m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Hall W., Warringah Rd Brookvale	47576	1969	Road Match	340m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
61	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Hall W., Warringah Rd Brookvale	30997	1968	Road Match	340m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Hall W., Warringah Rd Brookvale	15478	1967	Road Match	340m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Hall W., Warringah Rd Brookvale	1055	1966	Road Match	340m
	Motor Service Stations - Petrol, Oil, Etc.	Hall, W., Warringah Rd. Brookvale	125508	1965	Road Match	340m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Hall W., Warringah Rd Brookvale	51797	1964	Road Match	340m
62	MOTOR GARAGES & ENGINEERS(M6S6)	Buckle, B. Auto Conversions., 559 Orchard Rd., BROOKVALE	337460	1970	Road Match	429m
	MOTOR GARAGES & ENGINEERS.	Buckle B. Auto Conversions., 559 Orchard Rd Brookvale	37688	1969	Road Match	429m
	MOTOR GARAGES & ENGINEERS	Buckle B. Auto Conversions., 559 Orchard Rd Brookvale	21118	1968	Road Match	429m
	MOTOR GARAGES & ENGINEERS.	Buckle B. Auto Conversions., 559 Orchard Rd Brookvale	6689	1967	Road Match	429m
	MOTOR GARAGES & ENGINEERS.	Buckle B. Auto Conversions., 559 Orchard Rd Brookvale	6771	1967	Road Match	429m
63	DRY CLEANERS & PRESSERS.	Senorita Narraweena Shopping Centre, Alfred St., Narraweena. 2099	38787	1985	Road Match	463m
	DRY CLEANERS & PRESSERS.	Senorita Narraweena Shopping Centre, Alfred St., Narraweera. 2099	22177	1984	Road Match	463m
	DRY CLEANERS & PRESSERS.	Senorita Narraweena Shopping Centre., Alfred St., Narraweena. 2099	8771	1983	Road Match	463m
	DRY CLEANERS & PRESSERS.	Senorita, Narraweena Shopping Centre., Alfred St., Narraweena. 2099	63530	1981	Road Match	463m
	DRY CLEANERS, PRESSERS &/OR DYERS.	Senorita, Narraweena Shopping Centre., Alfred St., Narraweena. 2099	50011	1980	Road Match	463m
	DRY CLEANERS, PRESSERS &/OR DYERS.	Senorita Narraweena Shopping Centre., Alfred St., Narraweena. 2099.	35550	1979	Road Match	463m
	DRY CLEANERS, PRESSERS &/OR DYERS.	Senorita Narraweena Shopping Centre., Alfred St., Narraweena 2099	23799	1976	Road Match	463m

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Aerial Imagery 2009

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Aerial Imagery 2005

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

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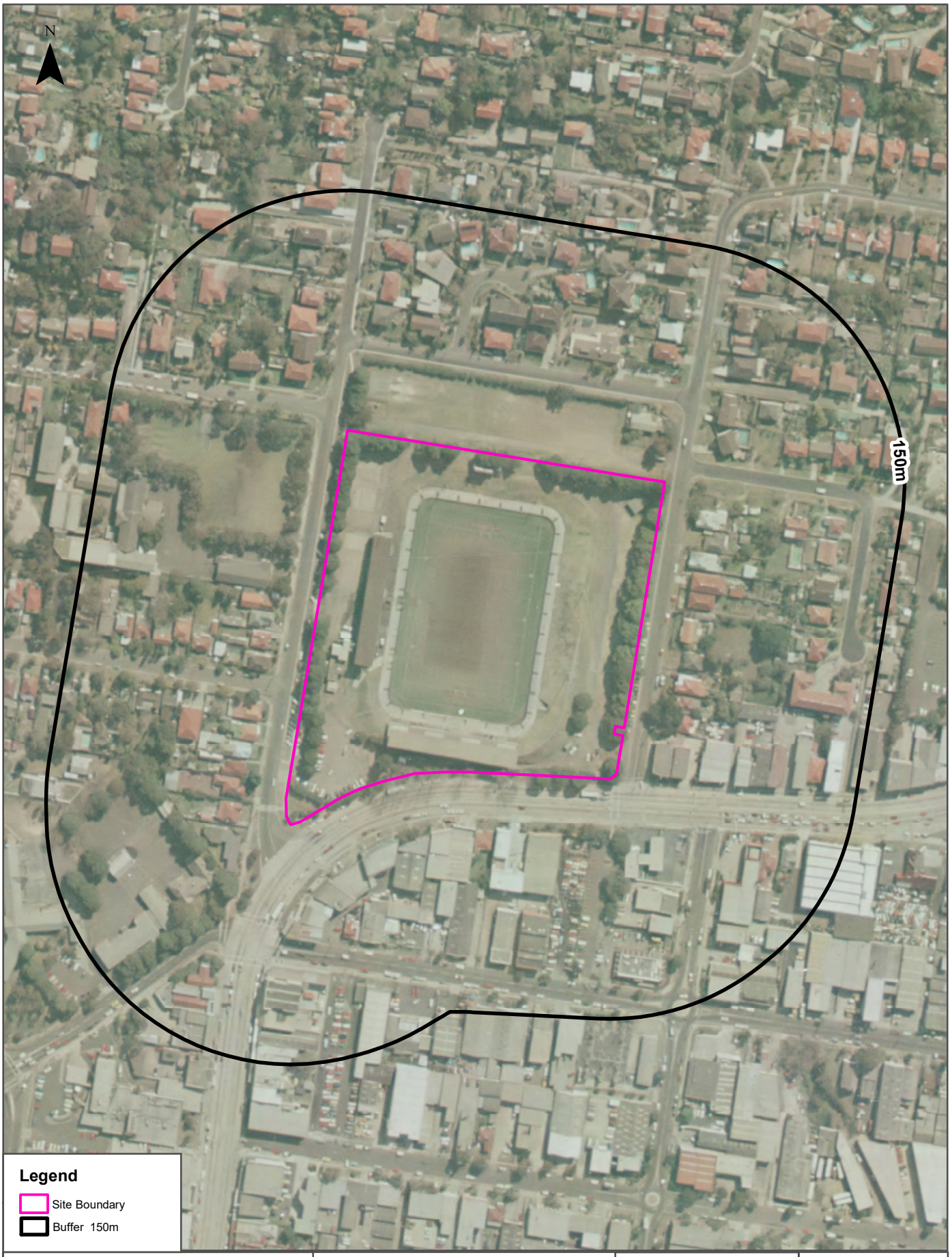
Coordinate System: GDA 1994 MGA Zone 56

Date: 21 August 2019

Aerial Imagery 1991

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Aerial Imagery 1982

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

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Date: 23 August 2019

Aerial Imagery 1970

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

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Aerial Imagery 1965

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

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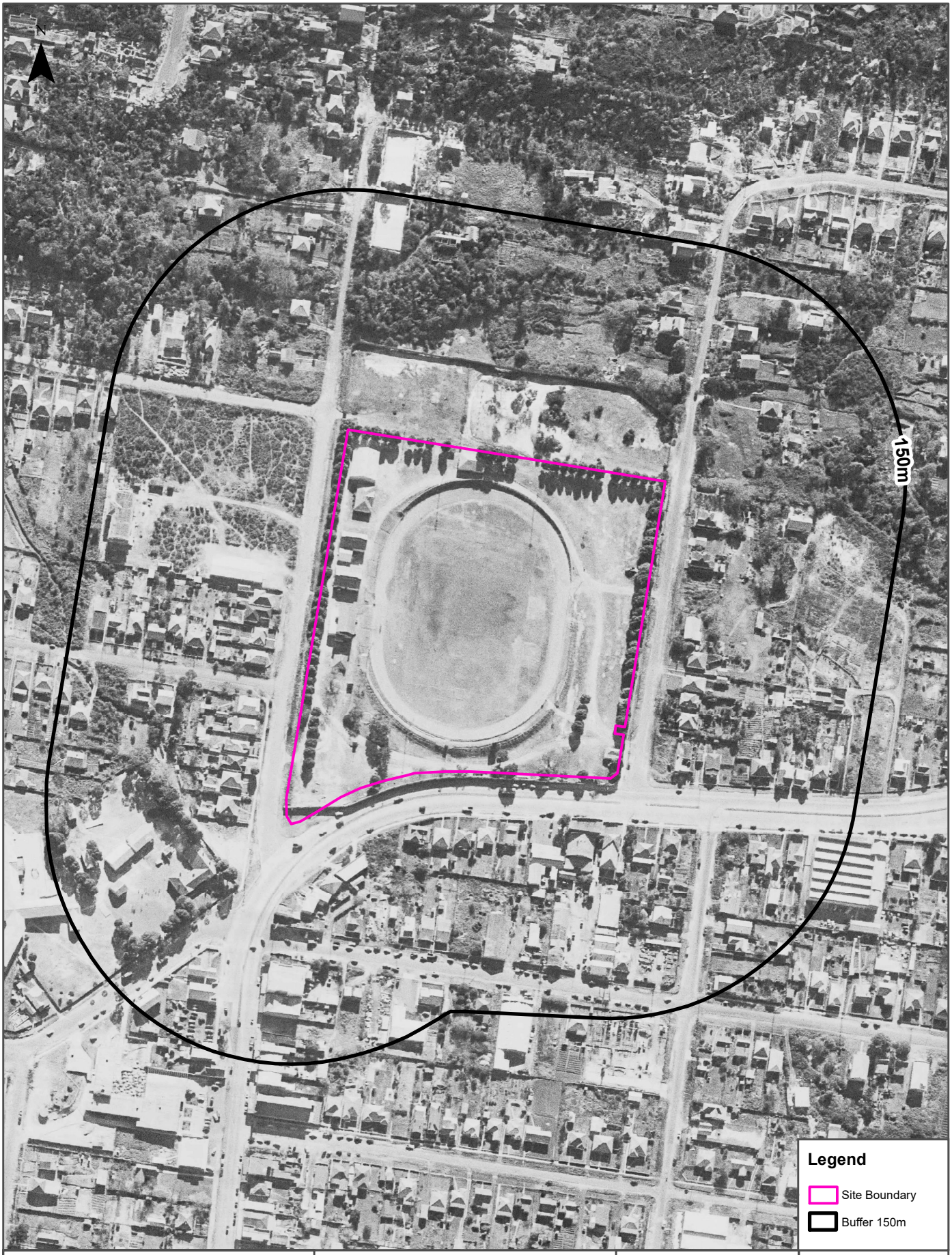
Date: 21 August 2019

Aerial Imagery 1961

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Aerial Imagery 1956

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Data Source Aerial Imagery:
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GDA 1994 MGA Zone 56

Date: 21 August 2019

Aerial Imagery 1951

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Data Source Aerial Imagery:
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Date: 21 August 2019

Aerial Imagery 1943

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Scale:	Data Sources: Aerial Imagery © Department of Finance, Services & Innovation	Coordinate System: GDA 1994 MGA Zone 56	Date: 23 August 2019

0 25 50 100 150
Metres

Historical Map 1975

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Scale: 0 125 250 500 750 1,000 1,250 Meters

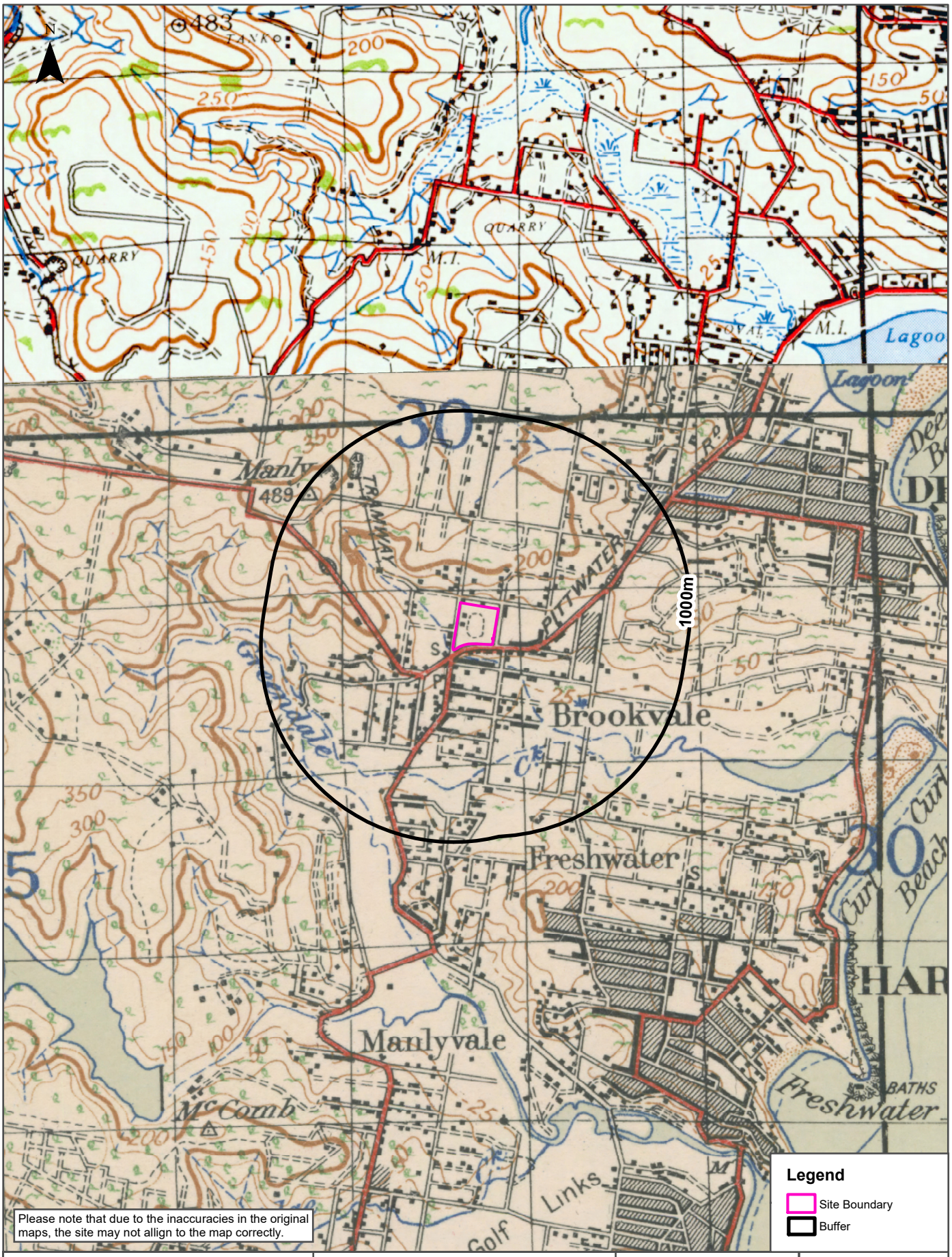
Data Sources: NATMAP 1:100,000 Topographic Maps Geoscience Australia

Coordinate System: GDA 1994 MGA Zone 56

Date: 23 August 2019

Historical Map c.1936 - 1942

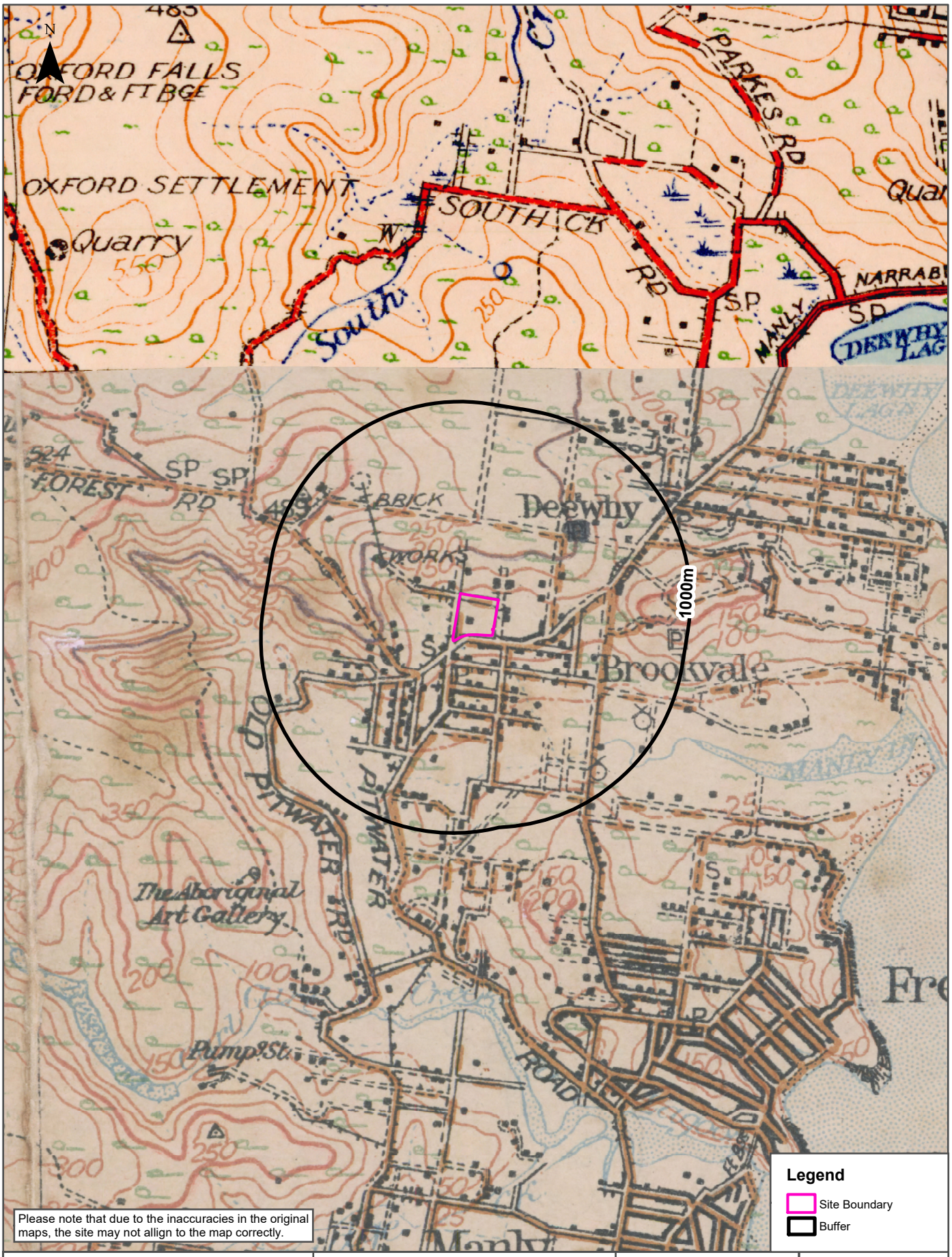
Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Scale: 0 125 250 500 750 1,000 1,250 Meters	Data Sources: Australia 1:63360, Produced by Australian Section Imperial General Staff	Coordinate System: GDA 1994 MGA Zone 56	Date: 23 August 2019

Historical Map c.1917 - 1920

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Scale:	Data Sources: Australia 1:63360, Produced by Australian Section Imperial General Staff	Coordinate System: GDA 1994 MGA Zone 56	Date: 23 August 2019

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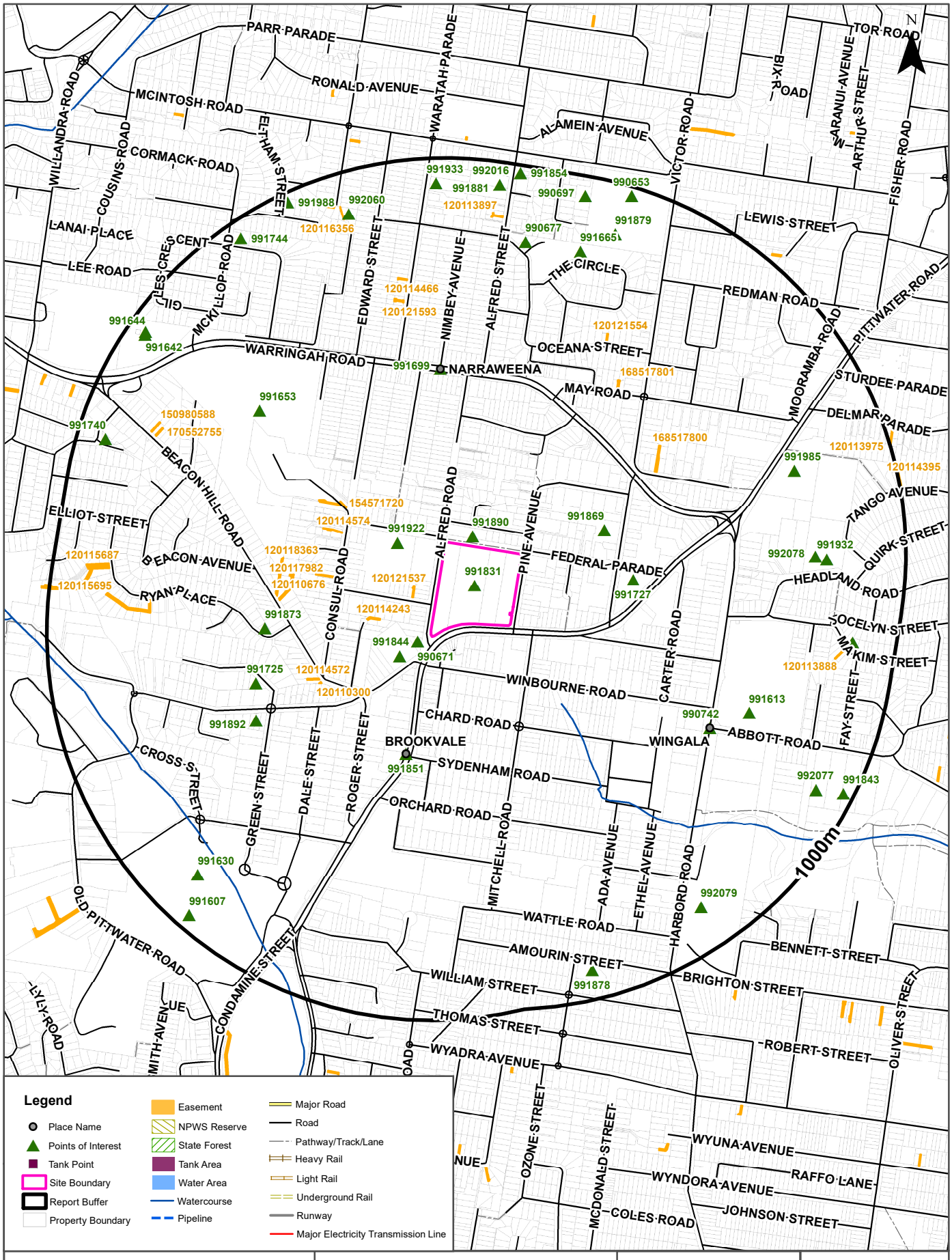
Topographic Features

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100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RONALD AVENUE
MCINTOSH ROAD
CORMACK ROAD
WILLANDRA ROAD
COUSINS ROAD
LANAI PLACE
LEE ROAD
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GILLOP ROAD
MCKILLOP ROAD
EDWARD STREET
ELTHAM STREET
WARATAH PARADE
NIMBEY AVENUE
ALFRED STREET
AL AMEIN AVENUE
VICTOR ROAD
BIX ROAD
ARANUI AVENUE
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TOR ROAD
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REDMAN ROAD
PITTWATER ROAD
MOORAMBA ROAD
STURDEE PARADE
DEL MAR PARADE
TANGO AVENUE
QUIRK STREET
HEADLAND ROAD
OCELYN STREET
MAKIM STREET
FAY STREET
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HARBORD ROAD
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ADA AVENUE
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WATTLE ROAD
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BRIGHTON STREET
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WYADRA AVENUE
THOMAS STREET
WILLIAM STREET
AMOURIN STREET
WYUNA AVENUE
RAFFO LANE
WYNDORA AVENUE
JOHNSON STREET
COLES ROAD
MCDONALD STREET
OZONE STREET
OCEANA STREET
MAY ROAD
NARRAWEENA
WARRINGAH ROAD
BEACON HILL ROAD
BEACON AVENUE
ELLIOT STREET
RYAN PLACE
CONSUL ROAD
ALFRED ROAD
PINE AVENUE
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Topographic Features

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
991831	Sports Field	BROOKVALE OVAL	0m	Onsite
991890	Park	BROOKVALE NORTHERN PARK	26m	North
990671	Community Facility	BROOKVALE COMMUNITY CENTRE	39m	South West
991844	Primary School	BROOKVALE PUBLIC SCHOOL	98m	South West
991922	Combined Primary-Secondary School	ST AUGUSTINE'S COLLEGE SYDNEY	123m	North West
991869	Community Home	ALEXANDER AGED CARE	224m	North East
991727	Club	MANLY WARRINGAH RUGBY LEAGUE CLUB	296m	East
991851	Suburb	BROOKVALE	312m	South West
991873	Park	RYAN RESERVE	432m	West
991699	Suburb	NARRAWEENA	451m	North
991725	Medical Centre	BROOKVALE COMMUNITY HEALTH CENTRE	472m	South West
991892	Park	GREEN STREET PARK	507m	South West
990742	Urban Place	WINGALA	585m	South East
991653	Park	Park	593m	North West
991613	High School	NORTHERN BEACHES SECONDARY COLLEGE MANLY CAMPUS	663m	South East
991985	Park	STONY RANGE BOTANIC GARDEN	741m	East
992078	Combined Primary-Secondary School	ST LUKE'S GRAMMAR SCHOOL	763m	East
991932	Place Of Worship	ANGLICAN CHURCH	793m	East
991665	Park	Park	803m	North
990677	Community Facility	NARRAWEENA COMMUNITY CENTRE	804m	North
991879	Sports Field	BEVERLEY JOB PARK	868m	North
991630	Post Office	WARRINGAH MALL POST OFFICE	870m	South West
991741	Park	MAKIM RESERVE	886m	East
992079	High School	NORTHERN BEACHES SECONDARY COLLEGE FRESHWATER SENI	888m	South East
992060	Park	WARRI RESERVE	891m	North
992077	Sports Field	DENZIL JOYCE OVAL	904m	South East
991878	Park	QUARRY RESERVE	922m	South
991740	Park	KALIANNA RESERVE	925m	West
991933	Place Of Worship	CATHOLIC CHURCH	935m	North
991881	Special School	ST LUCY'S ST JOHN'S NARRAWEENA CAMPUS	941m	North

Map Id	Feature Type	Label	Distance	Direction
992016	Primary School	ST JOHN THE APOSTLE CATHOLIC PRIMARY SCHOOL	941m	North
990697	Nursing Home	OPAL PALM GROVE	949m	North
991644	Lookout	GOVERNOR PHILLIP LOOKOUT	950m	North West
991642	Mountain/Hill/Peak	BEACON HILL	953m	North West
991744	Park	PRINCESS MARY RESERVE	954m	North West
991607	Shopping Centre	WARRINGAH MALL	962m	South West
991843	Sports Field	RUEB HUDSON OVAL	972m	South East
991988	Park	Park	976m	North West
990653	Community Facility	NARRAWEENA TENNIS CLUB	976m	North
991854	Post Office	NARRAWEENA POST OFFICE	979m	North

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Topographic Features

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
	No records in buffer					

Tanks (Points)

What are the Tank Points located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
	No records in buffer					

Tanks Data Source: © Land and Property Information (2015)
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Major Easements

What Major Easements exist within the dataset buffer?
Note. Easements provided by LPI are not at the detail of local governments. They are limited to major easements such as Right of Carriageway, Electrical Lines (66kVa etc.), Easement to drain water & Significant subterranean pipelines (gas, water etc.).

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120121537	Primary	Undefined		59m	West
120114243	Primary	Undefined		135m	West
120110676	Primary	Undefined		269m	West
120114574	Primary	Undefined		269m	West
154571720	Primary	Right of way	1.7m and Var.	273m	North West
120110300	Primary	Undefined		311m	South West
120114572	Primary	Undefined		312m	South West
120117982	Primary	Undefined		376m	West
120110730	Primary	Undefined		376m	West
168517800	Primary	Right of way	variable	407m	North East
120118363	Primary	Undefined		409m	West
168517801	Primary	Right of way	4.5 & 6.2 & var	495m	North East
120121554	Primary	Undefined		592m	North East

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120121593	Primary	Undefined		632m	North
120114466	Primary	Undefined		689m	North
120115695	Primary	Undefined		731m	West
170552755	Primary	Right of way	3.5 wide	792m	North West
150980588	Primary	Right of way	3	804m	North West
120113888	Primary	Undefined		847m	East
120115687	Primary	Undefined		851m	West
120113897	Primary	Undefined		854m	North
120116356	Primary	Undefined		880m	North
120115547	Primary	Undefined		918m	North
120114395	Primary	Undefined		997m	East
120113975	Primary	Undefined		998m	East

Easements Data Source: © Land and Property Information (2015)
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Topographic Features

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

State Forest

What State Forest exist within the dataset buffer?

State Forest Number	State Forest Name	Distance	Direction
N/A	No records in buffer		

State Forest Data Source: © NSW Department of Finance, Services & Innovation (2018)
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National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N/A	No records in buffer				

NPWS Data Source: © NSW Department of Finance, Services & Innovation (2018)
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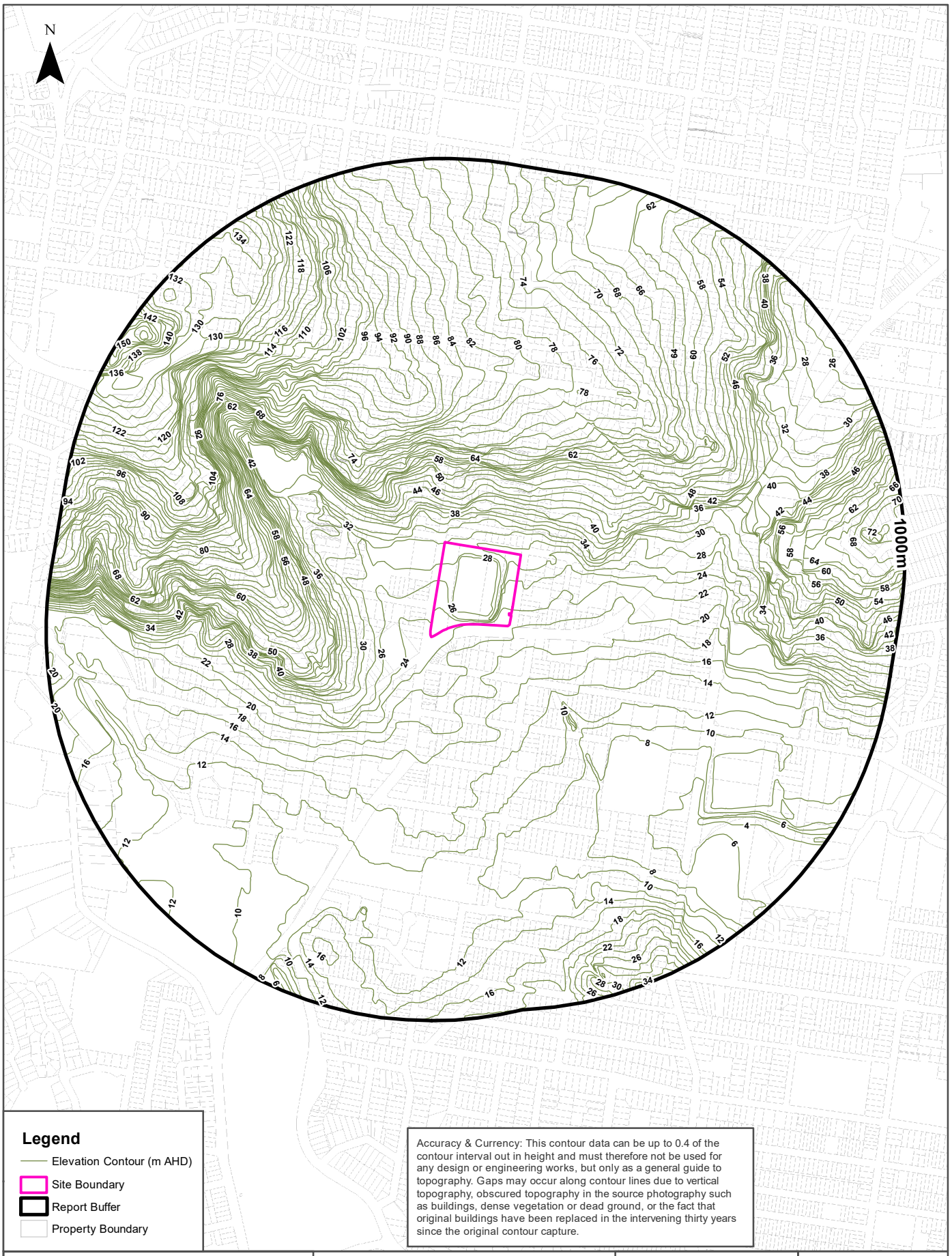
Elevation Contours (m AHD)

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Hydrogeology & Groundwater

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Hydrogeology

Description of aquifers on-site:

Description
Porous, extensive aquifers of low to moderate productivity

Description of aquifers within the dataset buffer:

Description
Porous, extensive aquifers of low to moderate productivity

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)
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Botany Groundwater Management Zones

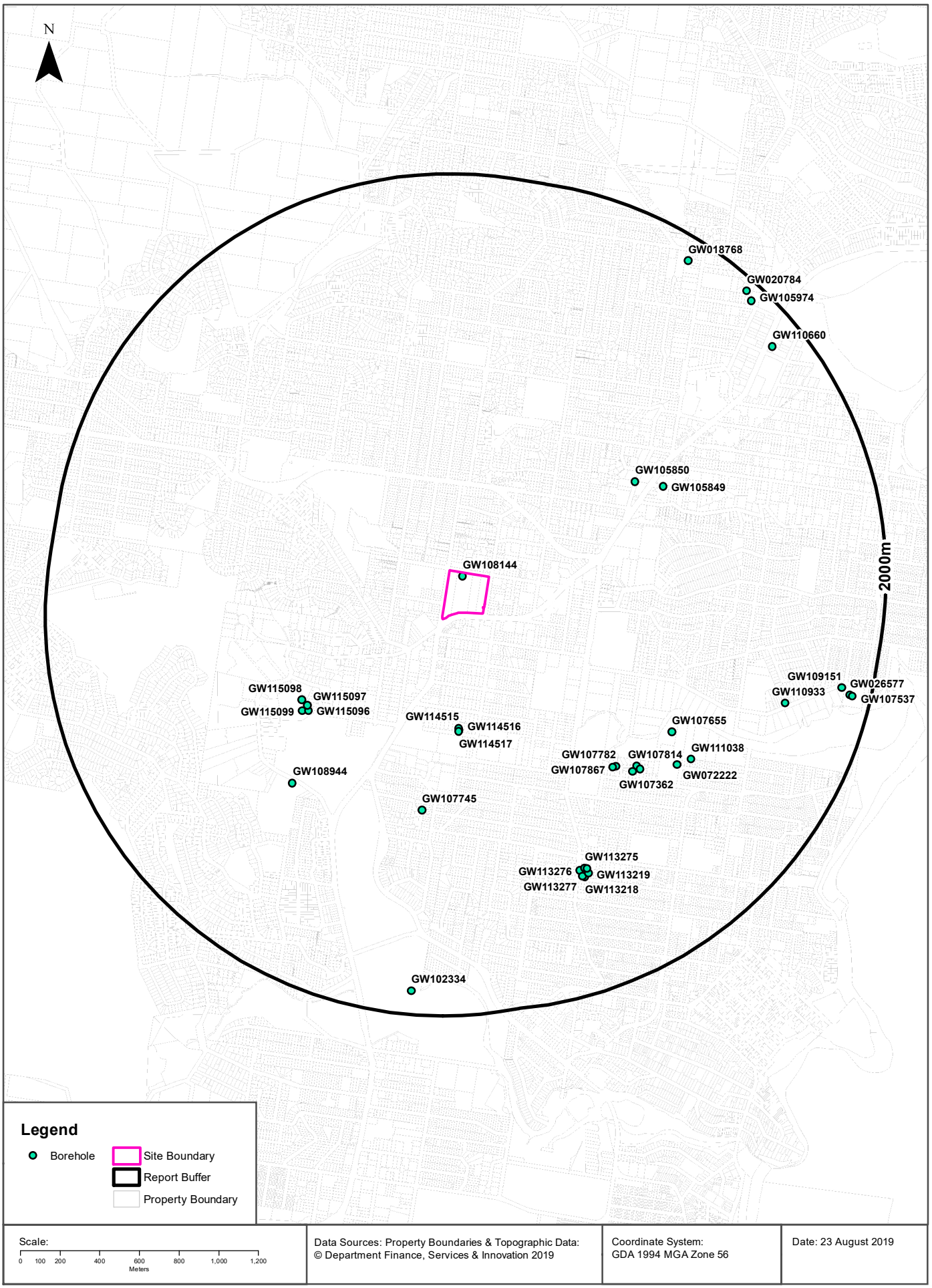
Groundwater management zones relating to the Botany Sand Beds aquifer within the dataset buffer:

Management Zone No.	Restriction	Distance	Direction
N/A	No records in buffer		

Botany Groundwater Management Zones Data Source : NSW Department of Primary Industries

Groundwater Boreholes

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Hydrogeology & Groundwater

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Groundwater Boreholes

Boreholes within the dataset buffer:

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW108144	10BL164675, 10BL601916, 10WA109503	Bore		Recreation (groundwater), Test Bore	Recreation (groundwater)		20/01/2005	150.00	150.00	200	15.00	1.000		0m	Onsite
GW114515	10BL605404	Bore	Private	Monitoring Bore	Monitoring Bore		17/04/2013	4.00	4.50					557m	South
GW114516	10BL605404	Bore	Private	Monitoring Bore	Monitoring Bore		17/04/2013	4.00	4.50					567m	South
GW114517	10BL605404	Bore	Private	Monitoring Bore	Monitoring Bore		17/04/2013	3.50	4.00					573m	South
GW115097	10BL605539			Monitoring Bore	Monitoring Bore		09/10/2015	8.50	8.50					809m	South West
GW115098	10BL605539			Monitoring Bore	Monitoring Bore		09/10/2015	10.00	10.00					818m	South West
GW115096	10BL605539			Monitoring Bore	Monitoring Bore		09/10/2015	8.50	8.50					819m	South West
GW115099	10BL605539			Monitoring Bore	Monitoring Bore		09/10/2015	10.00	10.00					846m	South West
GW105850	10BL160121	Bore		Monitoring Bore	Monitoring Bore		01/05/2001	15.00	15.00		1.47			879m	North East
GW107745	10BL165912, 10WA109034	Spear	Private	Domestic	Domestic		13/10/2005	15.00	15.00	270	9.00	0.800		969m	South
GW105849	10BL160121	Bore		Monitoring Bore	Monitoring Bore		01/01/2001	15.00	15.00		1.47			988m	North East
GW107867	10BL600108, 10WA109050	Spear	Private	Domestic	Domestic		06/03/2006	4.00	5.00		2.10	1.000		1019m	South East
GW107782	10BL165941, 10WA109036	Spear	Private	Domestic	Domestic		19/01/2006	3.00	4.00	509	1.20	0.500		1025m	South East
GW107814	10BL165812	Spear	Private	Domestic	Domestic		05/12/2005	4.00	4.00					1094m	South East
GW107362	10BL165162, 10WA108956	Spear	Private	Domestic	Domestic		10/08/2005	5.00	5.00	Good	3.00	0.500		1101m	South East
GW108029	10BL164674, 10WA108912	Spear	Private	Domestic	Domestic		19/04/2006	6.00	6.00		2.00	0.500		1118m	South East
GW108944	10BL601921, 10WA107657	Bore	Private	Domestic	Domestic		19/06/2008	120.00		352	13.00	0.500		1120m	South West
GW107655	10BL164287, 10BL165857, 10WA107749	Bore		Recreation (groundwater), Test Bore	Recreation (groundwater)		14/01/2005	78.00	78.00	220	3.00	3.000		1126m	South East

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW072222	10BL156434, 10BL165087, 10BL600068, 10WA117889	Bore	Private	Recreation (groundwater), Test Bore	Recreation (groundwater)		30/11/1994	10.00	12.00	7001-10000 ppm	1.00	1.000		1244m	South East
GW111038	10BL601567, 10BL604702, 10WA117323	Bore	Private	Recreation (groundwater), Test Bore	Recreation (groundwater)		11/08/2010	90.00	90.00	350	2.00	1.000		1283m	South East
GW113275	10BL161976	Bore	Private	Monitoring Bore	Monitoring Bore		01/04/2003	7.00	7.00					1385m	South East
GW113276	10BL161976	Bore	Private	Monitoring Bore	Monitoring Bore		01/04/2003	6.00	6.00					1386m	South
GW113220	10BL161977	Bore	Private	Monitoring Bore	Monitoring Bore	Mobil	13/11/2013	4.50	4.50					1392m	South East
GW113219	10BL161977	Bore	Private	Monitoring Bore	Monitoring Bore	Mobil	03/04/2003	3.00	3.00					1416m	South East
GW113277	10BL161976	Bore	Private	Monitoring Bore	Monitoring Bore		02/04/2013	6.00	6.00					1419m	South East
GW113218	10BL161977	Bore	Private	Monitoring Bore	Monitoring Bore	Mobil	13/11/2013	5.00	5.00					1426m	South East
GW110933	10BL603657, 10WA107701	Spear	Private	Domestic	Domestic		21/06/2010	4.00	4.00		1.90	0.900		1590m	East
GW110660	10BL603243	Well	Private	Monitoring Bore	Monitoring Bore		19/08/2009	7.50	7.50					1841m	North East
GW109151	10BL600432, 10BL602807, 10WA107779	Bore	Private	Recreation (groundwater), Test Bore	Recreation (groundwater)		05/08/2008	120.00	120.00	610	10.00	2.100		1847m	East
GW102334	10BL159038, 10WA107785	Bore	Private	Recreation (groundwater)	Recreation (groundwater)		01/10/1997	60.00	60.00	240	4.00	1.800		1882m	South
GW018768	10BL011404, 10WA107453	Bore open thru rock	Private	Waste Disposal	Waste Disposal		01/10/1960	77.70	77.70					1883m	North East
GW026577	10BL019626	Spear	Private	Recreation (groundwater)	Irrigation		01/12/1965	2.70						1896m	East
GW107537	10BL165295, 10BL165540, 10WA107755	Bore		Recreation (groundwater), Test Bore	Recreation (groundwater)		10/04/2005	4.34	4.34	550	1.10	1.470		1909m	East
GW105974	10BL162780, 10WA107511	Bore	Private	Domestic	Domestic		17/03/2004	3.00	3.00		1.70	0.200		1921m	North East
GW020784	10BL012069	Bore open thru rock	Private	Waste Disposal	Waste Disposal		01/11/1961	81.90	82.00	Good				1941m	North East

Borehole Data Source : NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corporation for all bores prefixed with GW. All other bores © Commonwealth of Australia (Bureau of Meteorology) 2015. Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Hydrogeology & Groundwater

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Driller's Logs

Drill log data relevant to the boreholes within the dataset buffer:

Groundwater No	Drillers Log	Distance	Direction
GW108144	0.00m-4.00m SAND 4.00m-15.00m RED CLAY BANDS 15.00m-21.00m SANDSTONE YELLOW 21.00m-25.00m SHALE 25.00m-68.00m SANDSTONE/SHALE 68.00m-75.00m SHALE 75.00m-86.00m SANDSTONE/SHALE 86.00m-91.00m SHALE 91.00m-131.00m SANDSTONE/SHALE 131.00m-143.00m SHALE 143.00m-146.00m SANDSTONE/SHALE 146.00m-150.00m SHALE	0m	Onsite
GW114515	0.00m-0.23m CONCRETE 0.23m-0.50m FILL.SILTY SAND,FINE TO MED.GRAINED 0.50m-1.50m SAND FINE TO MED.GRAINED,YELLOW BROWN AND GREY 1.50m-4.50m SAND FINE TO MED.GRAINED,LIGHT GREY,SILT	557m	South
GW114516	0.00m-0.21m CONCRETE 0.21m-0.70m FILL SILTY SAND FINE TO MED. GRAINED 0.70m-1.00m SILTY SAND ORANGE BROWN MOIST 1.00m-1.50m SAND.FINE TO MED.GRAINED,MOIST TO WET 1.50m-2.00m SILTY SAND FINE TO MED.GRAINED 2.00m-4.30m SAND LIGHT GREY MOIST TO WET 4.30m-4.50m SANDY CLAY MED.PLASTICITY,DARK GREY	567m	South
GW114517	0.00m-0.18m CONCRETE 0.18m-0.70m SILTY SAND,FINE TO MED.GRAINED,LIGHT BROWN 0.70m-1.00m SILTY SAND,ORANGE BROWN 1.00m-2.20m SILTY SAND LIGHT GREY,RED BROWN 2.20m-3.00m SANDY CLAY MED.PLASTICITY GREY MOT. 3.00m-4.00m SAND FINE TIO MED.GRAINED,LIGHT GREY	573m	South
GW115097	0.00m-0.20m CONCRETE 0.20m-0.80m CLAY FIRM,BROWN,MOTTLED RED AND BLACK 0.80m-1.40m CLAY GREY MOTTLED WITH ORANGE FRAG. 1.40m-2.00m SHALE RED WETHERED 2.00m-2.70m SHALE BROWN, HIGHLY FRACTURED 2.70m-3.10m CLAY STIFF, GREY MOTTLED WITH RED 3.10m-8.50m SHALE BROWN	809m	South West
GW115098	0.00m-0.20m CONCRETE 0.20m-0.30m CLAY SOFT DARK BROWN 0.30m-0.40m CONCRETE 0.40m-0.50m SANDY CLAY 0.50m-1.00m CLAY FIRM ,GREY AND BROWN 1.00m-1.50m CLAY ORANGE 1.50m-2.30m SHALE WEATHERED 2.30m-2.40m CLAY STIFF GREY 2.40m-3.30m SHALE RED AND GREY 3.30m-3.60m SHALE HIGHLY WEATERED 3.60m-3.80m SHALE FRACTURED BROWN 3.80m-10.00m SHALE BROWN	818m	South West
GW115096	0.00m-0.20m CONCRETE 0.20m-0.70m CLAY FIRM GREY BROWN,BRICK AND SHALE 0.70m-1.20m CLAY SOFT BROWN AND BLACK 1.20m-1.30m CLAY FIRM BROWN GREY ORANGE 1.30m-2.50m CLAY SOFT GREY,ORANGE MOTTLED 2.50m-2.60m SHALE FRACTURED WEATHERED 2.60m-2.80m CLAY FIRM GREY 2.80m-3.60m SHALE HIGHLY FRACTURED RED TO ORANGE 3.60m-3.80m SHALE FRACTURED BROWN 3.80m-8.50m SHALE BROWN	819m	South West

Groundwater No	Drillers Log	Distance	Direction
GW115099	0.00m-0.20m CONCRETE 0.20m-0.50m SAND 0.50m-0.60m CLAYEY SAND 0.60m-1.20m NO RECOVERY 1.20m-1.90m CLAYEY SAND COARSE 1.90m-2.60m CLAY FIRM , GREY 2.60m-3.00m SHALE RED, WEATHERED 3.00m-3.30m CLAY FIRM GREY 3.30m-3.80m SHALE WEATHERED GREY 3.80m-10.00m SHALE BROWN	846m	South West
GW107745	0.00m-15.00m sand	969m	South
GW107867	0.00m-4.00m sand 4.00m-5.00m clay	1019m	South East
GW107782	0.00m-3.00m sand 3.00m-4.00m clay	1025m	South East
GW107814	0.00m-0.50m topsoil 0.50m-2.00m sand, white 2.00m-3.50m sand, yellow silty 3.50m-4.00m clay, grey	1094m	South East
GW107362	0.00m-0.30m topsoil 0.30m-3.50m sand, white 3.50m-5.00m sand, yellow silty	1101m	South East
GW108029	0.00m-0.30m topsoil 0.30m-2.50m sand, grey 2.50m-4.20m sand, grey silty 4.20m-6.00m sand, grey	1118m	South East
GW107655	0.00m-26.00m SAND 26.00m-33.00m SAND/CLAY 33.00m-43.00m SAND/CLAY/QUARTZ 43.00m-71.00m SANDSTONE 71.00m-78.00m SHALE	1126m	South East
GW072222	0.00m-1.00m SAND 1.00m-19.00m SANDY CLAY 19.00m-27.50m SANDSTONE L/BROWN 27.50m-27.70m SANDSTONE SOFT 27.70m-46.50m SANDSTONE GREY 46.50m-48.00m SANDSTONE DARK GREY 48.00m-64.30m SANDSTONE GREY 64.30m-64.70m SANDSTONE FINE QUARTZ 64.70m-83.00m SANDSTONE GREY 83.00m-83.50m SANDSTONE FINE QUARTZ 83.50m-96.30m SANDSTONE GREY 96.30m-96.40m SANDSTONE FRACTURED 96.40m-120.00m SANDSTONE DARK GREY	1244m	South East
GW111038	0.00m-5.00m FIIL / RUBBISH 5.00m-30.00m SAND , GRAVEL 30.00m-80.00m SANDSTONE 80.00m-81.00m SHALE 81.00m-90.00m SANDSTONE	1283m	South East
GW110933	0.00m-0.20m TOSOIL 0.20m-0.50m SANDS MIXED 0.50m-1.40m SAND GREY AND CLAY 1.40m-1.90m SAND DARK WITH CLAY 1.90m-2.50m CLAY 2.50m-3.00m SAND AND CLAY 3.00m-4.00m SAND AND QUARTZ	1590m	East
GW110660	0.00m-0.15m CONCRETE 0.15m-0.90m CLAY YELLOW BLACK SANDY 0.90m-6.00m CLAY RED SANDY 6.00m-7.50m CLAY SANDY SATURATED RED	1841m	North East

Groundwater No	Drillers Log	Distance	Direction
GW109151	0.00m-2.50m SAND, YELLOW 2.50m-27.20m SAND/CLAY 27.20m-32.80m SANDSTONE WEATHERED 32.80m-34.90m SANDSTONE GREY 34.90m-35.50m CLAY 35.50m-44.70m SANDSTONE GREY 44.70m-44.90m SANDSTONE FRACTURED 44.90m-56.80m SANDSTONE GREY 56.80m-57.10m SANDSTONE FRACTURED 57.10m-58.90m SANDSTONE DARK GREY 58.90m-62.00m SANDSTONE GREY 62.00m-65.00m SILTSTONE GREY 65.00m-91.90m SANDSTONE GREY 91.90m-98.50m SILTSTONE GREY 98.50m-101.50m SILTSTONE RED 101.50m-115.00m SANDSTONE GREY 115.00m-120.00m SILTSTONE RED	1847m	East
GW102334	0.00m-0.50m Topsoil 0.50m-3.00m SAND YELLOW 3.00m-7.00m MARINE DARK GREY/CLAY-VERY GREASY 7.00m-11.00m MARINE WITH 15%SHELL FRAG.QUARTZ. 11.00m-17.00m MARINE NO QUARTZ 17.00m-23.00m MARINE/5%SHELL FRAGMENT 23.00m-26.00m MARINE/10%SHELL FRAGMENT 26.00m-28.00m MARINE/15%SHELL FRAGMENT 28.00m-30.00m SANDSTONE/BROWN/ GRAIN 30.00m-31.00m SANDSTONE/BROWN/R. QUARTZ 31.00m-35.00m SANDSTONE/GREY/F/G/BIT CLAY MATRIX 35.00m-40.00m CLAY STONE GREY 40.00m-60.00m SANDSTONE/WHITE BIT OF QUARTZ	1882m	South
GW018768	0.00m-1.52m Silt Black Sand Water Supply 1.52m-3.04m Sand Water Supply 3.04m-19.50m Sand 3.04m-19.50m Clay Some Water Supply 19.50m-23.16m Silt Black Water Supply 23.16m-29.26m Sand Clay Water Supply 29.26m-32.30m Clay Reddish Sandy Water Supply 32.30m-42.06m Clay Greyish Gravel 42.06m-73.76m Sandstone Cream Soft 42.06m-73.76m Clay 73.76m-75.59m Sandstone Gravel Coarse Water Supply 75.59m-77.72m Gravel Water Supply	1883m	North East
GW107537	0.00m-2.00m CLAY FILL 2.00m-4.34m SAND	1909m	East
GW105974	0.00m-1.00m sandy, land 1.00m-2.00m clay, sand 2.00m-2.50m sand 2.50m-3.00m clay, sand	1921m	North East
GW020784	0.00m-0.91m Topsoil Wet 0.91m-8.22m Clay Sandy 8.22m-15.24m Sand 15.24m-20.72m Clay Sandy 20.72m-25.60m Sand 25.60m-27.73m Clay Sandy 27.73m-32.00m Sandstone Soft 32.00m-44.80m Sandstone Water Supply 44.80m-60.04m Shale Grey Sandy 60.04m-60.96m Sandstone Hard 60.96m-76.20m Shale Grey Sandy 76.20m-79.24m Sandstone Pebbles/pebbly Water Supply 79.24m-81.99m Shale Grey Sandy	1941m	North East

Drill Log Data Source: NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corp
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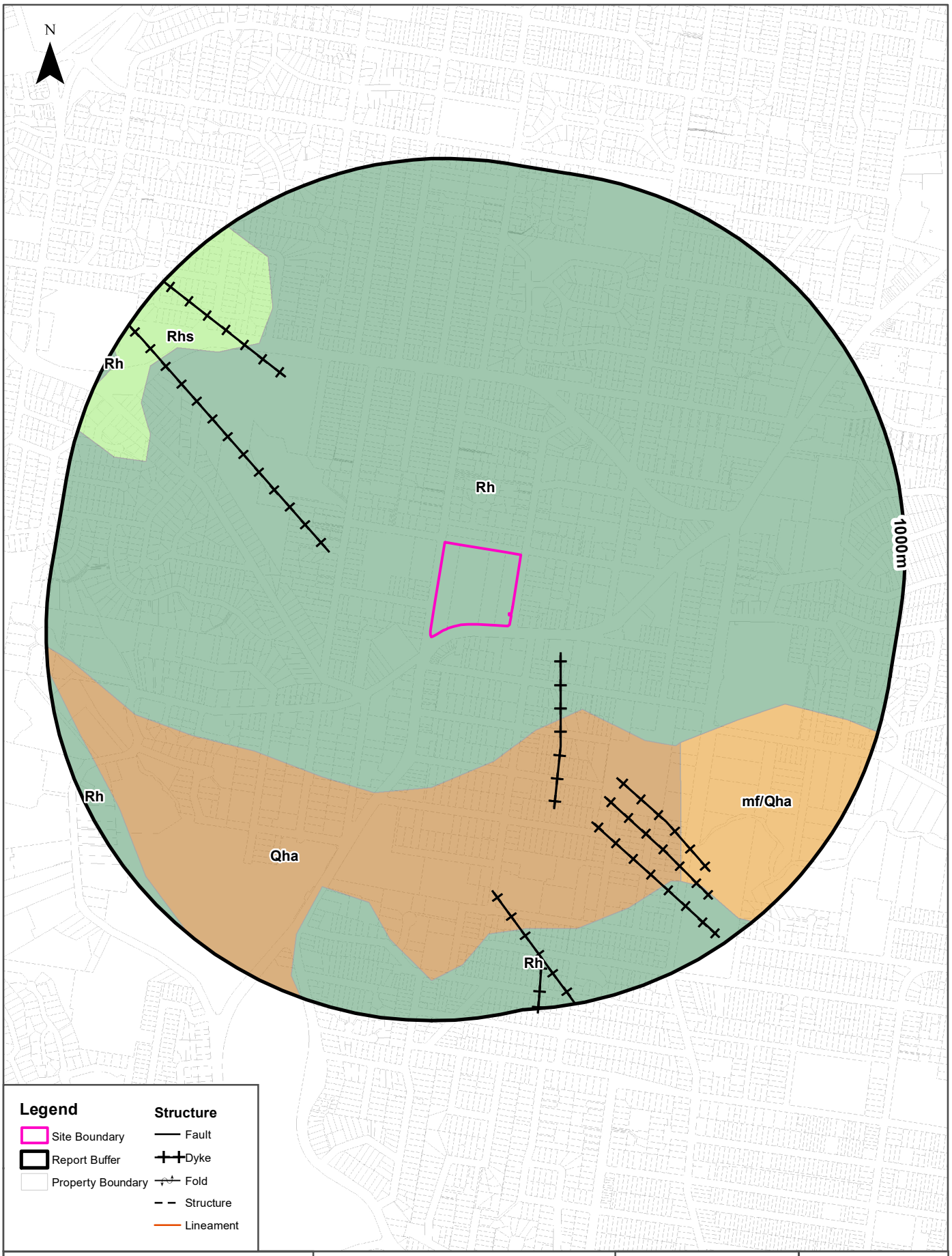
Geology 1:100,000

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Geology

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Geological Units

What are the Geological Units onsite?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Rh	Medium to coarse grained quartz sandstone, very minor shale and laminate lenses				Triassic		Sydney	1:100,000

What are the Geological Units within the dataset buffer?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
mf/Qha	Man-made fill (dredged estuarine sand and mud, demolition rubble, industrial and household waste) overlying silty to peaty quartz sand, silt and clay with ferruginous & humic cementation in places and common shell layers				Quaternary		Sydney	1:100,000
Qha	Silty to peaty quartz sand, silt, and clay. Ferruginous and humic cementation in places. Common shell layers				Quaternary		Sydney	1:100,000
Rh	Medium to coarse grained quartz sandstone, very minor shale and laminate lenses				Triassic		Sydney	1:100,000
Rhs	Shale. Laminate				Triassic		Sydney	1:100,000

Geological Structures

What are the Geological Structures onsite?

Feature	Name	Description	Map Sheet	Dataset
No features				1:100,000

What are the Geological Structures within the dataset buffer?

Feature	Name	Description	Map Sheet	Dataset
Dyke			Sydney	1:100,000
Dyke			Sydney	1:100,000
Dyke			Sydney	1:100,000
Dyke			Sydney	1:100,000
Dyke			Sydney	1:100,000
Dyke			Sydney	1:100,000
Dyke			Sydney	1:100,000
Dyke			Sydney	1:100,000

Geological Data Source : NSW Department of Industry, Resources & Energy
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Naturally Occurring Asbestos Potential

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Naturally Occurring Asbestos Potential

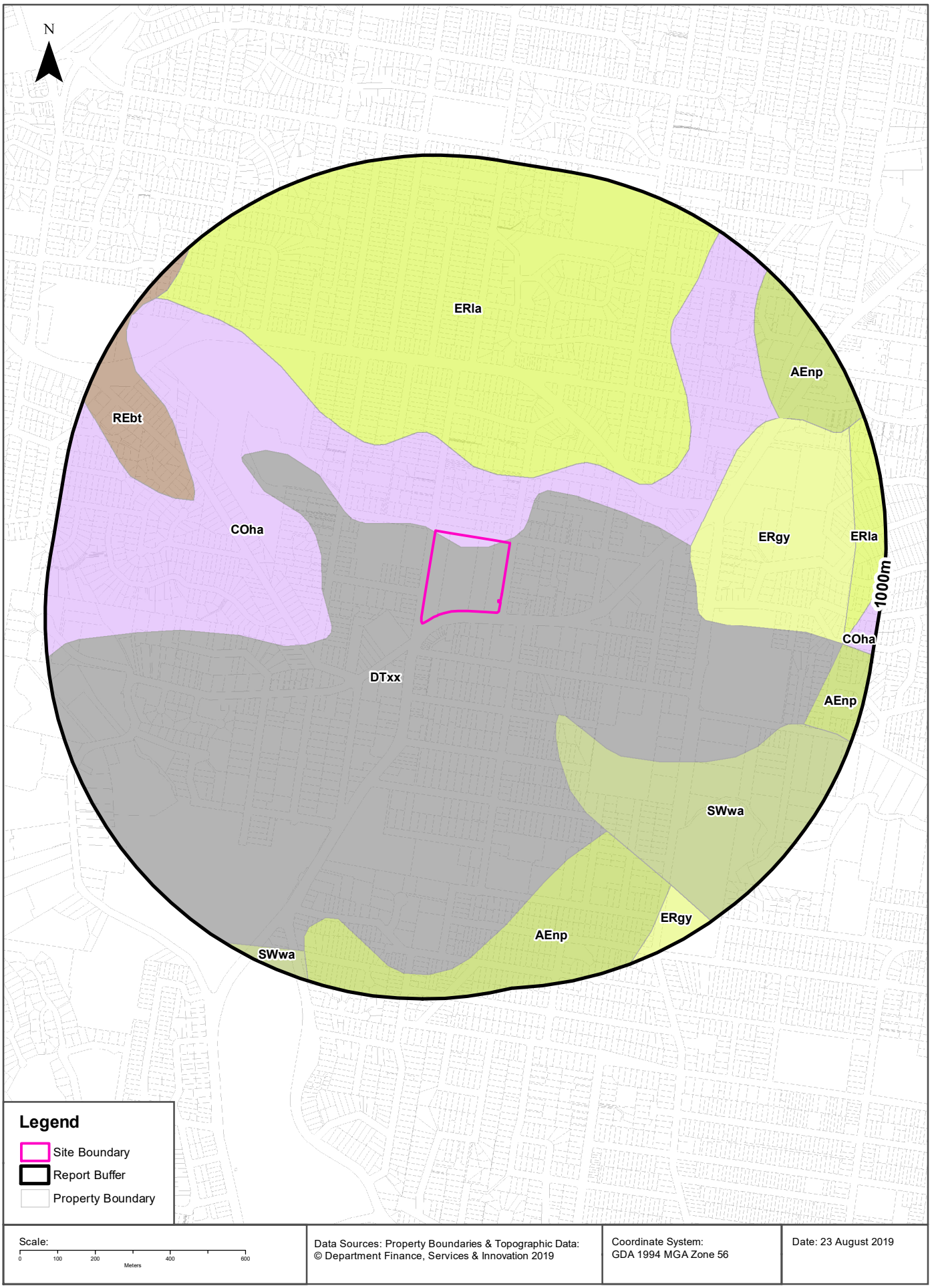
Naturally Occurring Asbestos Potential within the dataset buffer:

Potential	Sym	Strat Name	Group	Formation	Scale	Min Age	Max Age	Rock Type	Dom Lith	Description	Dist	Dir
No records in buffer												

Mining Subsidence District Data Source: © State of New South Wales through NSW Department of Industry, Resources & Energy

Soil Landscapes

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Soils

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Soil Landscapes

What are the onsite Soil Landscapes?

Soil Code	Name	Group	Process	Map Sheet	Scale
COha	HAWKESBURY		COLLUVIAL	Sydney	1:100,000
DTxx	DISTURBED TERRAIN		DISTURBED TERRAIN	Sydney	1:100,000

What are the Soil Landscapes within the dataset buffer?

Soil Code	Name	Group	Process	Map Sheet	Scale
AEnp	NEWPORT		AEOLIAN	Sydney	1:100,000
COha	HAWKESBURY		COLLUVIAL	Sydney	1:100,000
DTxx	DISTURBED TERRAIN		DISTURBED TERRAIN	Sydney	1:100,000
ERgy	GYMEA		EROSIONAL	Sydney	1:100,000
ERla	LAMBERT		EROSIONAL	Sydney	1:100,000
REbt	BLACKTOWN		RESIDUAL	Sydney	1:100,000
SWwa	WARRIEWOOD		SWAMP	Sydney	1:100,000

Soils Landscapes Data Source : NSW Office of Environment and Heritage
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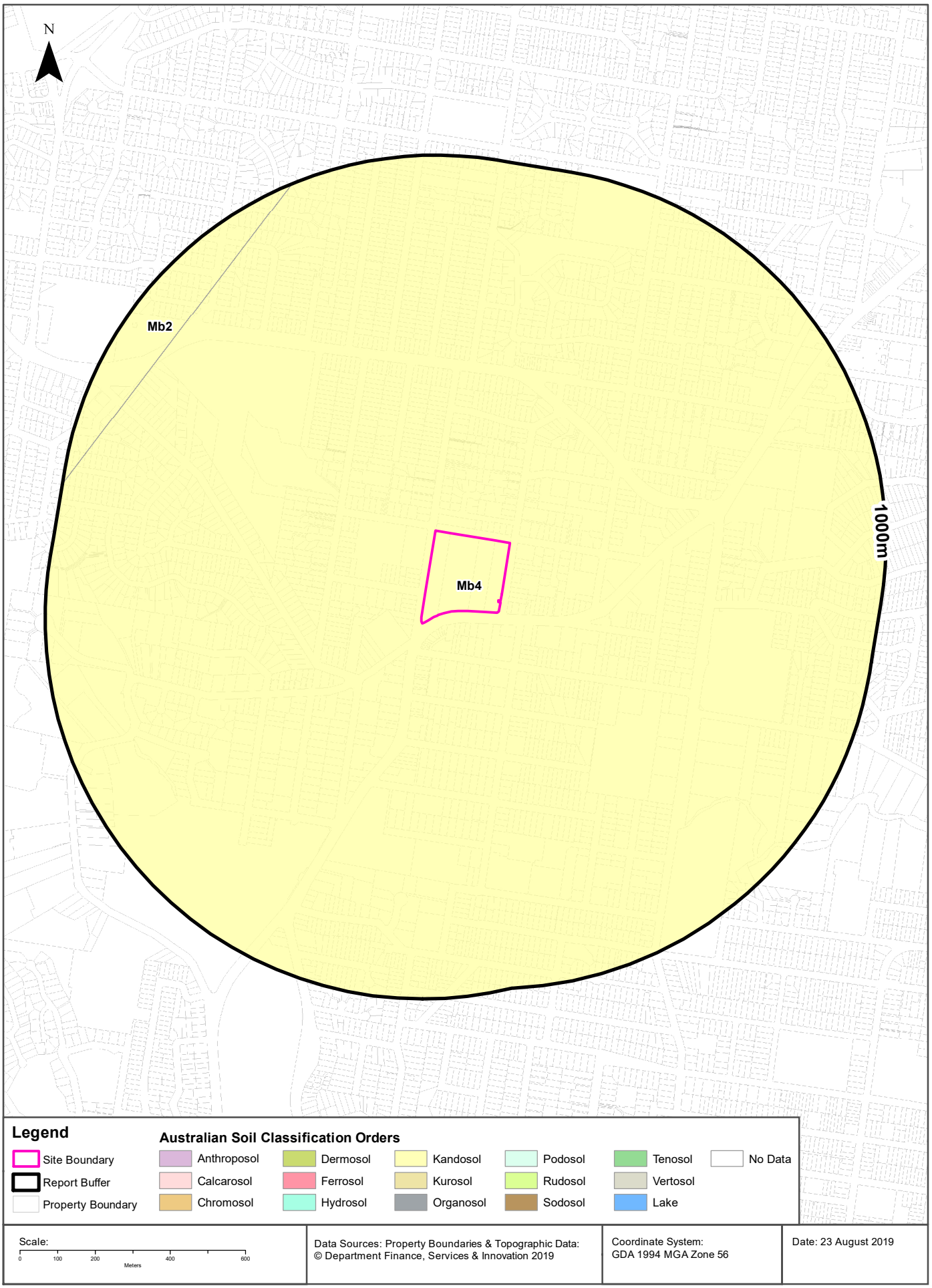
Atlas of Australian Soils

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Soils

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Atlas of Australian Soils

Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance
Mb4	Kandosol	Coastal complex: chief soils are acid yellow leached earths (Gn2.74) and (Gn2.34), hard acidic yellow mottled soils (Dy3.41), and hard acidic red soils (Dr2.21). This unit includes headlands and rugged coastal areas of unit Mb2; ridges and slopes of unit Tb35; low-lying coastal areas of unit Cb27; and some swampy areas.	0m
Mb2	Kandosol	Dissected sandstone plateau of moderate to strong relief with sandstone pillars, ledges, and slabs-- level to undulating ridges, irregularly benched slopes, steep ridges, cliffs, canyons, narrow sandy valleys: chief soils are (i) on areas of gentle to moderate relief, acid yellow leached earths (Gn2.74) and (Gn2.34) and acid leached yellow earths (Gn2.24)-sometimes these soils contain ironstone gravel; and (ii) on, or adjacent to, areas of strong relief, siliceous sands (Uc1.2), leached sands (Uc2.12) and (Uc2.2), and shallow forms of the above (Gn2) soils. Associated are: (i) on flat to gently undulating remnants of the original plateau surface, leached sands (Uc2.3), siliceous sands (Uc1.2), sandy earths (Uc5.22), and (Gn2) soils as for (i) above (these areas are in part comparable with unit Cb29); (ii) on flat ironstone gravelly remnants of the original plateau surface, (Gn2) soils as for unit Mb5(i); (iii) on gently undulating ridges where interbedded shales are exposed, shallow, often stony (Dy3.41), (Dr2.21), and related soils similar to unit Tb35; (iv) narrow valleys of (Uc2.3) soils flanked by moderate slopes of (Dy3.41) soils; (v) escarpments of steep hills with shallow (Dy) and (Dr) soils between sandstone pillars; and (vi) shallow (Um) soils, such as (Um6.21) on steep hills of basic rocks. As mapped, minor areas of units Mg20, Mm1, and Mw8 are included. Data are limited.	865m

Atlas of Australian Soils Data Source: CSIRO
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Acid Sulfate Soils

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Environmental Planning Instrument - Acid Sulfate Soils

What is the on-site Acid Sulfate Soil Plan Class that presents the largest environmental risk?

Soil Class	Description	EPI Name
N/A		

If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
N/A				

Acid Sulfate Data Source Accessed 23/10/2018: NSW Crown Copyright - Planning and Environment
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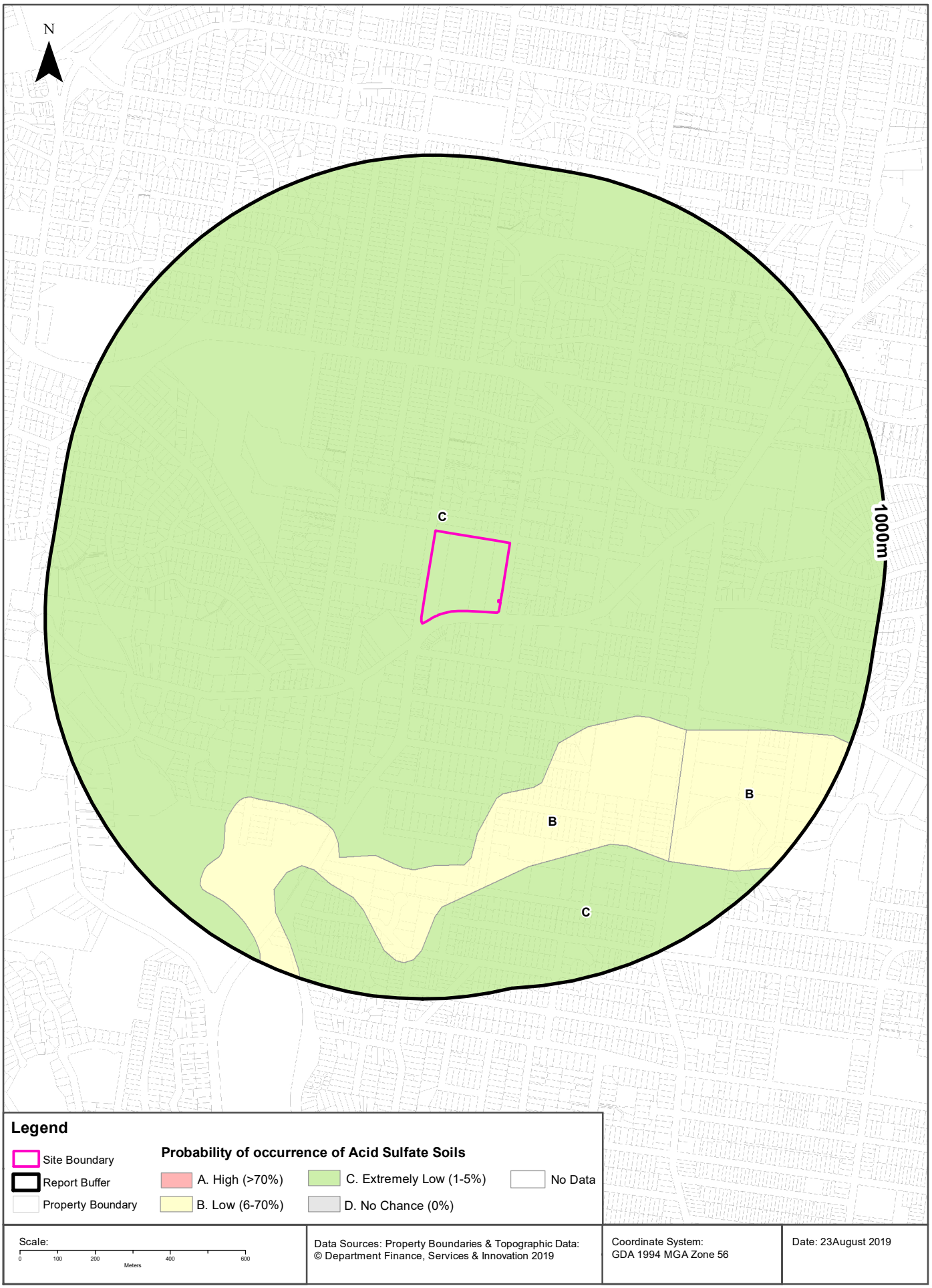
Atlas of Australian Acid Sulfate Soils

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Acid Sulfate Soils

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Atlas of Australian Acid Sulfate Soils

Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m
B	Low Probability of occurrence. 6-70% chance of occurrence.	382m

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO
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Dryland Salinity

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

Is there Dryland Salinity - National Assessment data within the dataset buffer?

No

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
N/A	N/A	N/A	N/A	N/A

Dryland Salinity Data Source : National Land and Water Resources Audit
The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.
In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Dryland Salinity Potential of Western Sydney

Dryland Salinity Potential of Western Sydney within the dataset buffer?

Feature Id	Classification	Description	Distance	Direction
N/A	Outside Data Coverage			

Dryland Salinity Potential of Western Sydney Data Source : NSW Office of Environment and Heritage
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Mining Subsidence Districts

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
There are no Mining Subsidence Districts within the report buffer		

Mining Subsidence District Data Source: © Land and Property Information (2016)
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State Environmental Planning Policy

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

Map Id	Precinct	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
N/A	No Records in Buffer							

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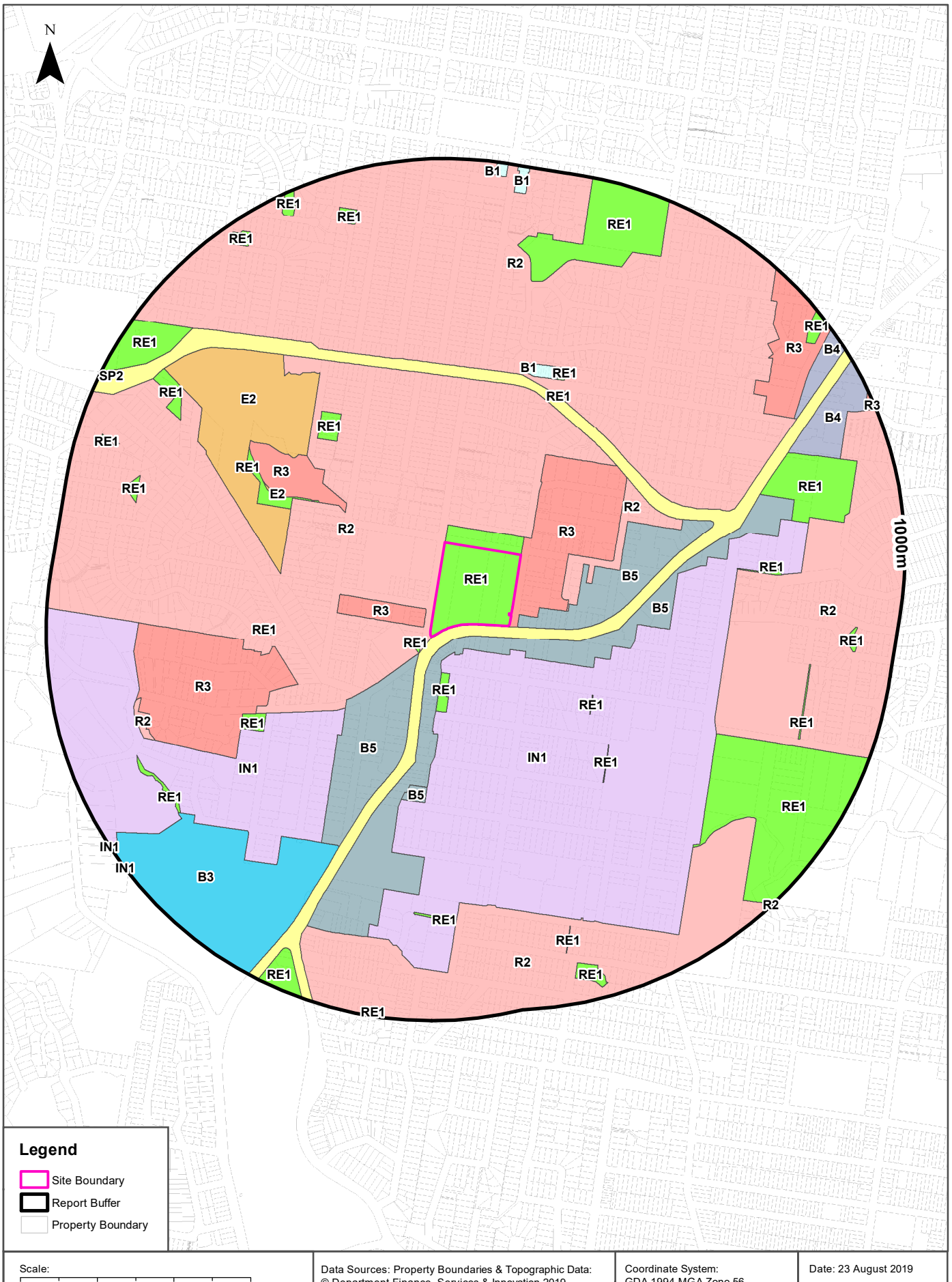
EPI Planning Zones

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Environmental Planning Instrument

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		0m	Onsite
R2	Low Density Residential		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		0m	South West
R3	Medium Density Residential		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		0m	North East
SP2	Infrastructure	Classified Road	Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		0m	North West
R3	Medium Density Residential		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		19m	West
B5	Business Development		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		20m	East
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		24m	South West
B5	Business Development		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		29m	South
B5	Business Development		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		54m	South West
IN1	General Industrial		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		61m	South East
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		96m	South
R2	Low Density Residential		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		121m	East
R3	Medium Density Residential		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		272m	North West
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		283m	South East
IN1	General Industrial		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		290m	South West
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		344m	North West
R3	Medium Density Residential		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		368m	West
R2	Low Density Residential		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		369m	North
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		386m	North West
B5	Business Development		Warringah Local Environmental Plan 2011	28/03/2013	28/03/2013	30/06/2017	Amendment No 1	389m	South
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		404m	South East
E2	Environmental Conservation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		410m	North West
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		414m	West
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		417m	North East
E2	Environmental Conservation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		431m	North West
B1	Neighbourhood Centre		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		464m	North
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		467m	North
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		473m	South West

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R2	Low Density Residential		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017	Amendment No 19	562m	East
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		564m	East
B3	Commercial Core		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		595m	South West
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		608m	North East
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		641m	East
R2	Low Density Residential		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		695m	South East
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		708m	North
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		718m	South
R3	Medium Density Residential		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		732m	North East
B4	Mixed Use		Warringah Local Environmental Plan 2011	30/06/2017	30/06/2017	30/06/2017	Amendment No 19	744m	North East
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		759m	North West
R2	Low Density Residential		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		760m	West
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		787m	East
B4	Mixed Use		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		795m	North East
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		798m	South
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		812m	West
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		860m	North
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		862m	North West
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		868m	East
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		887m	West
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		893m	South
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		895m	South
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		900m	West
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		925m	North East
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		926m	North West
B1	Neighbourhood Centre		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		930m	North
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		937m	North West
B1	Neighbourhood Centre		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		966m	North
R3	Medium Density Residential		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		971m	East
RE1	Public Recreation		Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017		974m	South

Environmental Planning Instrument Data Source: NSW Crown Copyright - Planning & Environment
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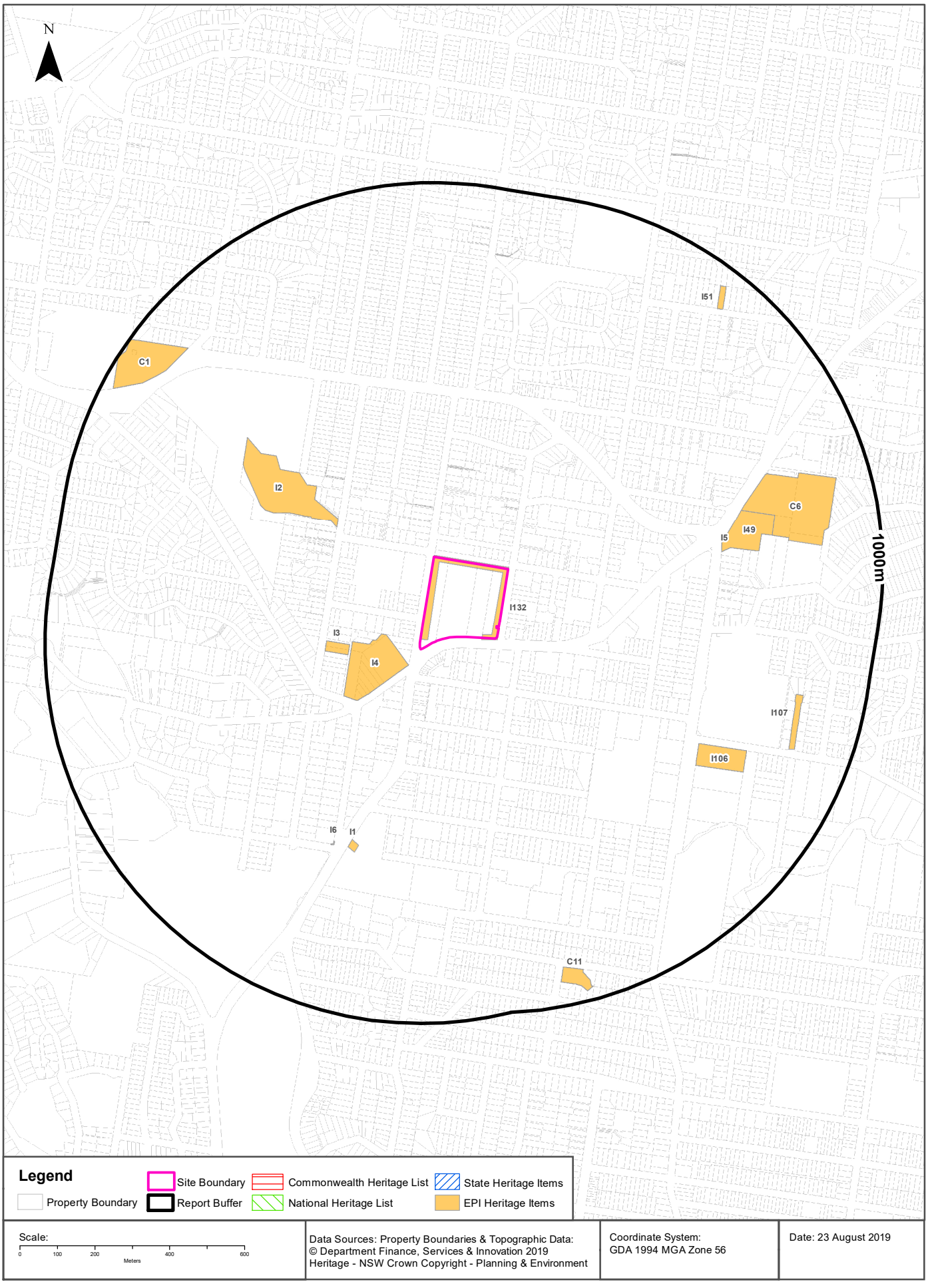
Heritage Items

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Heritage

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Commonwealth Heritage List

What are the Commonwealth Heritage List Items located within the dataset buffer?

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
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National Heritage List

What are the National Heritage List Items located within the dataset buffer?
Note. Please click on Place Id to activate a hyperlink to online website.

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
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State Heritage Register - Curtilages

What are the State Heritage Register Items located within the dataset buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage
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Environmental Planning Instrument - Heritage

What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I132	Brush Box and Camphor Laurel Trees surrounding Brookvale Park	Item - Landscape	Local	Warringah Local Environmental Plan 2011	30/05/2014	30/05/2014	30/06/2017	0m	Onsite
I4	Brookvale Public School	Item - General	Local	Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017	52m	South West
I3	House known as Milroy	Item - General	Local	Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017	187m	West

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I2	Former Premises relating to Austral Brickworks	Item - General	Local	Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017	272m	North West
I1	Tramway Staff War Memorial	Item - General	Local	Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017	540m	South West
I6	Palm Tree & Plaque	Item - Landscape	Local	Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017	563m	South West
I49	Former Wormald Building (front entrance/canteen)	Item - General	Local	Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017	570m	East
I5	Bus Shelter	Item - General	Local	Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017	577m	East
I106	Memorial Gateway, John Fisher Park	Item - General	Local	Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017	608m	South East
C6	Stony Range Flora Reserve	Conservation Area - Landscape	Local	Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017	641m	East
I107	Street Trees	Item - Landscape	Local	Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017	812m	East
C1	Governor Philip Lookout	Conservation Area - Landscape	Local	Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017	862m	North West
I51	House known as Elouera	Item - General	Local	Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017	893m	North East
C11	Park	Conservation Area - Landscape	Local	Warringah Local Environmental Plan 2011	09/12/2011	09/12/2011	30/06/2017	895m	South

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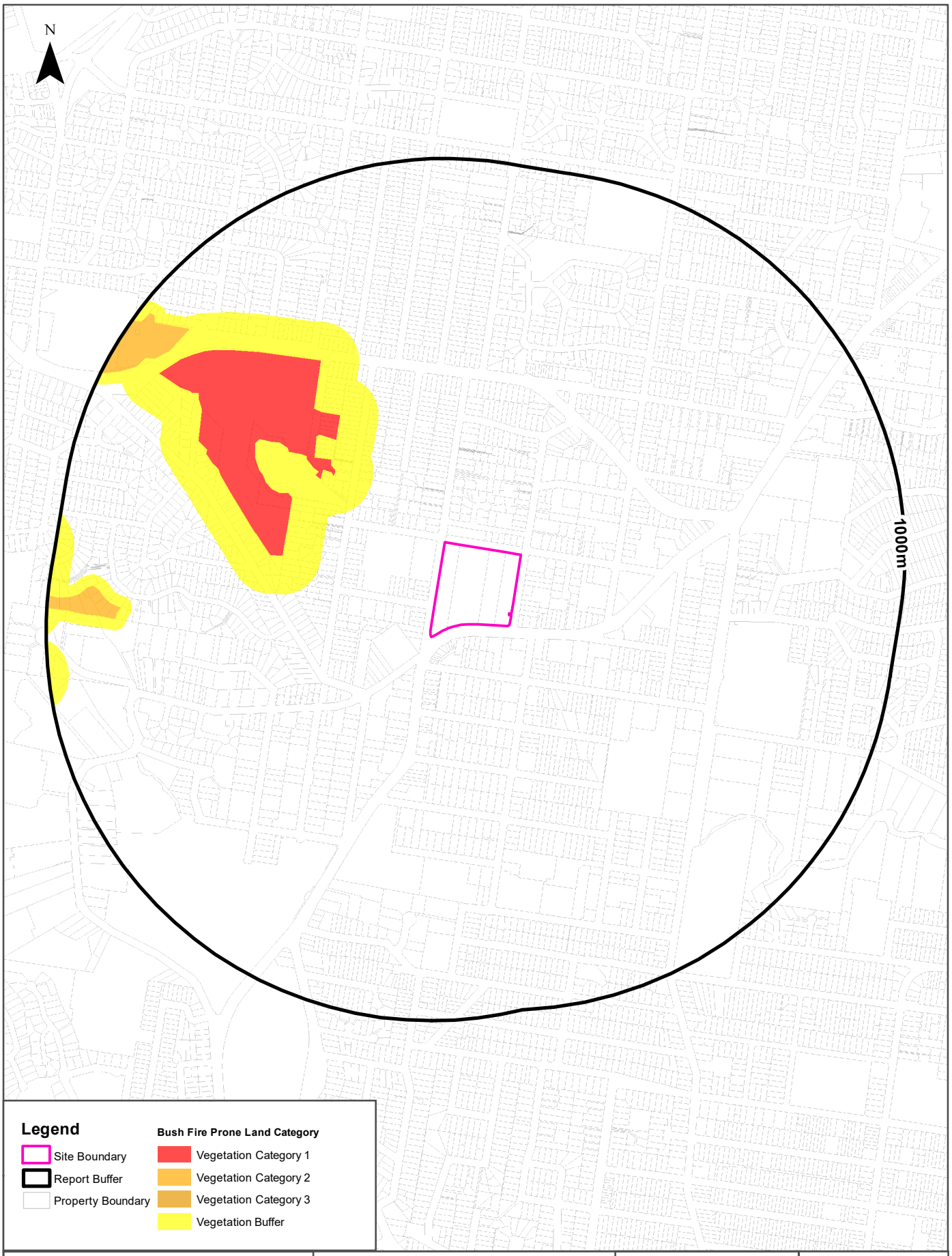
Natural Hazards - Bush Fire Prone Land

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Scale: 0 100 200 400 600 Meters

Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2019. Property Boundaries: © Department Finance, Services & Innovation 2019

Coordinate System: GDA 1994 MGA Zone 56

Date: 23 August 2019

Natural Hazards

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Bush Fire Prone Land

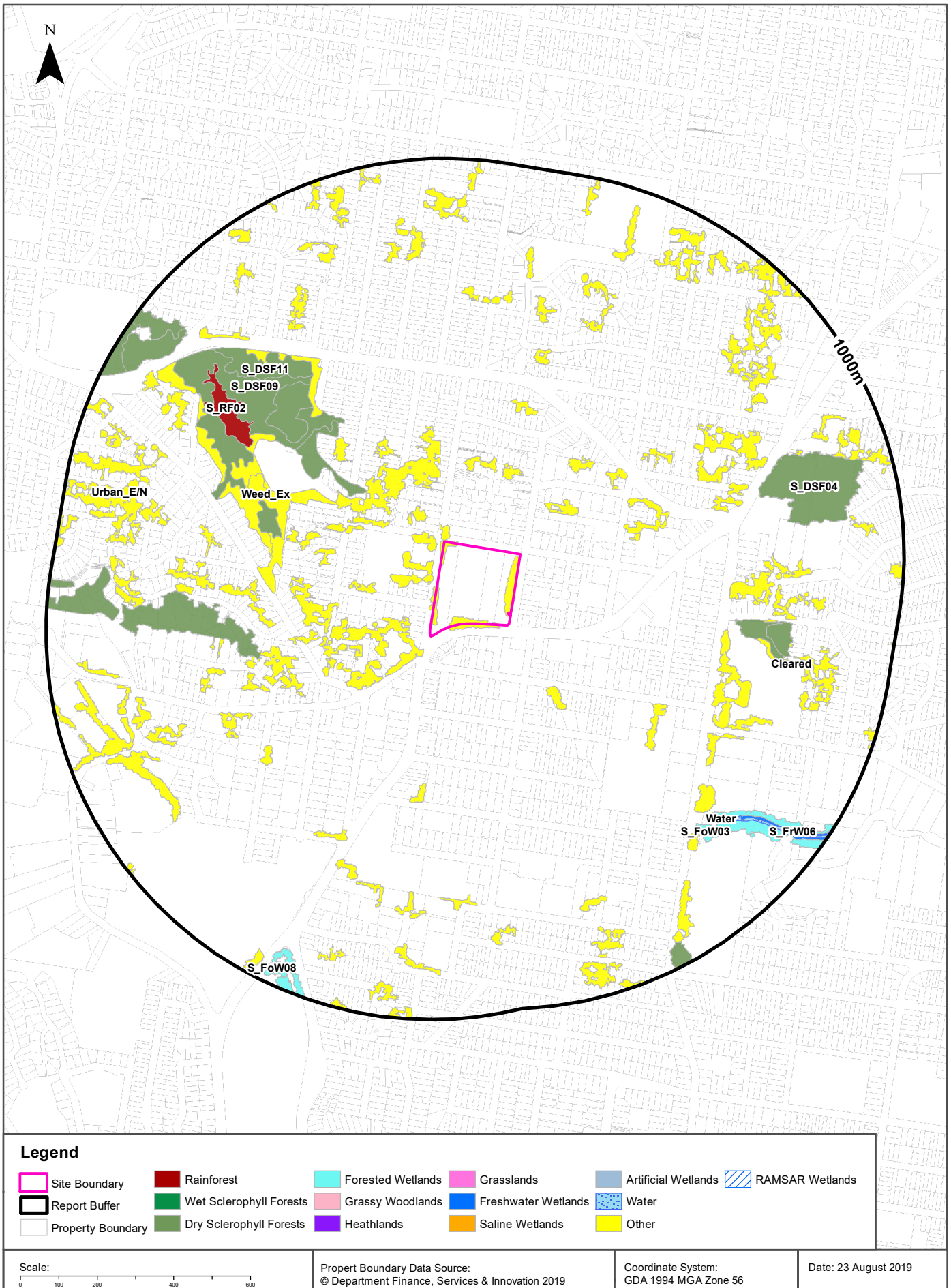
What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
Vegetation Buffer	238m	North West
Vegetation Category 1	338m	North West
Vegetation Category 2	808m	West

NSW Bush Fire Prone Land - © NSW Rural Fire Service under Creative Commons 4.0 International Licence

Ecological Constraints - Native Vegetation & RAMSAR Wetlands

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100



Ecological Constraints

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Native Vegetation

What native vegetation exists within the dataset buffer?

Map ID	Map Unit Name	Threatened Ecological Community NSW	Threatened Ecological Community EPBC Act	Understorey	Disturbance	Disturbance Index	Dominant Species	Dist	Direction
Urban_E/N	Urban_E/N: Urban Exotic/Native			00: Not assessed	00: Not assessed	0: Not assessed	Urban Exotic/Native	0m	Onsite
S_DSF09	S_DSF09: Coastal Sandstone Gully Forest			11: Semi sheltered dry/mesic	13: Weeds	3: High	A.costata/E.piperita/C.gummifera/S.glomulifera/E.resinifera	243m	North West
Weed_Ex	Weed_Ex: Weeds and Exotics			00: Not assessed	00: Not assessed	0: Not assessed	Exotic Species >90%cover	295m	North West
S_DSF11	S_DSF11: Sydney North Exposed Sandstone Woodland			12: Dry xeric shrubs	19: Clearing/Part clearing	3: High	C.gummifera/E.haemastoma/A.costataE.sieberi	420m	West
S_RF02	S_RF02: Coastal Sandstone Gallery Rainforest			10: Mesic/rainforest	13: Weeds	2: Moderate	C.apetalum/T.laurina/C.serratifolia	561m	North West
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			12: Dry xeric shrubs	20: Previously cleared 1943	3: High	C.gummifera/E.haemastoma/A.costataE.sieberi	578m	East
Cleared	Cleared			00: Not assessed	00: Not assessed	0: Not assessed	Cleared	641m	East
S_FoW03	S_FoW03: Coastal Freshwater Swamp Forest			20: Weeds and exotics	13: Weeds	3: High	C.glauca	712m	South East
Water	Water			00: Not assessed	00: Not assessed	0: Not assessed	Water	731m	South East
S_FrW06	S_FrW06: Estuarine Reedland	Swamp Oak Floodplain Forest		00: Not assessed	00: Not assessed	0: Not assessed	P.australis/B.juncea	785m	South East
S_FoW08	S_FoW08: Estuarine Swamp Oak Forest	Swamp Oak Floodplain Forest		20: Weeds and exotics	20: Previously cleared 1943	3: High	C.glauca	895m	South

Native Vegetation of the Sydney Metropolitan Area : NSW Office of Environment and Heritage
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Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

Map Id	Ramsar Name	Wetland Name	Designation Date	Source	Distance	Direction
N/A	No records in buffer					

Ramsar Wetlands Data Source: © Commonwealth of Australia - Department of Environment

Ecological Constraints

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
N/A	No records within buffer				

Groundwater Dependent Ecosystems Atlas Data Source: The Bureau of Meteorology
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Ecological Constraints

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
N/A	No records within buffer				

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology
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Ecological Constraints

Brookvale Oval, Pittwater Road, Brookvale, NSW 2100

NSW BioNet Atlas

Species on the NSW BioNet Atlas that have a NSW or federal conservation status, a NSW sensitivity status, or are listed under a migratory species agreement, and are within 10km of the site?

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Heleioporus australiacus	Giant Burrowing Frog	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Amphibia	Pseudophryne australis	Red-crowned Toadlet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Actitis hypoleucos	Common Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Anous stolidus	Common Noddy	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ardea ibis	Cattle Egret	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Ardenna carneipes	Flesh-footed Shearwater	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Ardenna grisea	Sooty Shearwater	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Ardenna pacificus	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ardenna tenuirostris	Short-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Arenaria interpres	Ruddy Turnstone	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Botaurus poiciloptilus	Australasian Bittern	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Burhinus grallarius	Bush Stone-curlew	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris alba	Sanderling	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris canutus	Red Knot	Not Listed	Not Sensitive	Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris ferruginea	Curlew Sandpiper	Endangered	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris ruficollis	Red-necked Stint	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris tenuirostris	Great Knot	Vulnerable	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Calyptorhynchus banksii banksii	Red-tailed Black-Cockatoo (coastal subspecies)	Critically Endangered	Category 2	Not Listed	
Animalia	Aves	Calyptorhynchus banksii samueli	Red-tailed Black-Cockatoo (inland subspecies)	Vulnerable	Category 2	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Charadrius leschenaultii	Greater Sand-plover	Vulnerable	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Charadrius mongolus	Lesser Sand-plover	Vulnerable	Not Sensitive	Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Charadrius veredus	Oriental Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Chlidonias leucopterus	White-winged Black Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Diomedea exulans	Wandering Albatross	Endangered	Not Sensitive	Endangered	JAMBA
Animalia	Aves	Egretta sacra	Eastern Reef Egret	Not Listed	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Esacus magnirostris	Beach Stone-curlew	Critically Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Eudyptula minor	Little Penguin	Endangered Population	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Fregata ariel	Lesser Frigatebird	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Gygis alba	White Tern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus fuliginosus	Sooty Oystercatcher	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus longirostris	Pied Oystercatcher	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Ixobrychus flavicollis	Black Bittern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Category 3	Critically Endangered	
Animalia	Aves	Limosa lapponica	Bar-tailed Godwit	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lophochroa leadbeateri	Major Mitchell's Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Macronectes giganteus	Southern Giant Petrel	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Macronectes halli	Northern Giant-Petrel	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Neophema splendida	Scarlet-chested Parrot	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Numenius madagascariensis	Eastern Curlew	Not Listed	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius phaeopus	Whimbrel	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Onychoprion fuscata	Sooty Tern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pachycephala olivacea	Olive Whistler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pandion cristatus	Eastern Osprey	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Phaethon lepturus	White-tailed Tropicbird	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Philomachus pugnax	Ruff	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Phoebetria fusca	Sooty Albatross	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Plegadis falcinellus	Glossy Ibis	Not Listed	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Pluvialis fulva	Pacific Golden Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Pluvialis squatarola	Grey Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Polytelis swainsonii	Superb Parrot	Vulnerable	Category 3	Vulnerable	
Animalia	Aves	Pterodroma leucoptera leucoptera	Gould's Petrel	Vulnerable	Not Sensitive	Endangered	
Animalia	Aves	Pterodroma solandri	Providence Petrel	Vulnerable	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ptilinopus magnificus	Wompoo Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus regina	Rose-crowned Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus superbus	Superb Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Puffinus assimilis	Little Shearwater	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Rostratula australis	Australian Painted Snipe	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stercorarius longicaudus	Long-tailed Jaeger	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Stercorarius parasiticus	Arctic Jaeger	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Stercorarius pomarinus	Pomarine Jaeger	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Sterna hirundo	Common Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Sternula albifrons	Little Tern	Endangered	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Sula dactylatra	Masked Booby	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Thalassarche cauta	Shy Albatross	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Thalassarche chrysostoma	Grey-headed Albatross	Not Listed	Not Sensitive	Endangered	
Animalia	Aves	Thalassarche melanophris	Black-browed Albatross	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Thinornis rubricollis	Hooded Plover	Critically Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Todiramphus chloris	Collared Kingfisher	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Tringa brevipes	Grey-tailed Tattler	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa incana	Wandering Tattler	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa stagnatilis	Marsh Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto tenebricosa	Sooty Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Xenus cinereus	Terek Sandpiper	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Mammalia	Arctocephalus forsteri	New Zealand Fur-seal	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Arctocephalus pusillus doriferus	Australian Fur-seal	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Cercartetus nanus	Eastern Pygmy-possum	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Dugong dugon	Dugong	Endangered	Not Sensitive	Not Listed	
Animalia	Mammalia	Eubalaena australis	Southern Right Whale	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Isoodon obesulus obesulus	Southern Brown Bandicoot (eastern)	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Macrotis lagotis	Bilby	Presumed Extinct	Not Sensitive	Vulnerable	
Animalia	Mammalia	Megaptera novaeangliae	Humpback Whale	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Nyctophilus bifax	Eastern Long-eared Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Perameles nasuta	Long-nosed Bandicoot	Endangered Population	Not Sensitive	Not Listed	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petrogale penicillata	Brush-tailed Rock-wallaby	Endangered	Not Sensitive	Vulnerable	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Endangered Population, Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Physeter macrocephalus	Sperm Whale	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Pseudomys novaehollandiae	New Holland Mouse	Not Listed	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespadelus troughtoni	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Antaresia stimsoni	Stimson's Python	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Caretta caretta	Loggerhead Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Reptilia	Dermochelys coriacea	Leatherback Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Eretmochelys imbricata	Hawksbill Turtle	Not Listed	Not Sensitive	Vulnerable	
Animalia	Reptilia	Myuchelys bellii	Western Sawshelled Turtle, Bell's Turtle	Endangered	Not Sensitive	Vulnerable	
Animalia	Reptilia	Suta flagellum	Little Whip Snake	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Tiliqua occipitalis	Western Blue-tongued Lizard	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Varanus rosenbergi	Rosenberg's Goanna	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Acacia bynoeana	Bynoe's Wattle	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia terminalis subsp. terminalis	Sunshine Wattle	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Allocasuarina portuensis	Nielsen Park She-oak	Endangered	Category 3	Endangered	
Plantae	Flora	Asterolasia buxifolia		Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Baeckea kandos		Endangered	Category 3	Endangered	
Plantae	Flora	Caladenia tessellata	Thick Lip Spider Orchid	Endangered	Category 2	Vulnerable	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	
Plantae	Flora	Chamaesyce psammogeton	Sand Spurge	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Darwinia biflora		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Deyeuxia appressa		Endangered	Not Sensitive	Endangered	
Plantae	Flora	Epacris purpurascens var. purpurascens		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus camfieldii	Camfield's Stringybark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus scoparia	Wallangarra White Gum	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Euphrasia collina subsp. muelleri	Mueller's Eyebright	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Genoplesium baueri	Bauer's Midge Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Grammitis stenophylla	Narrow-leaf Finger Fern	Endangered	Category 3	Not Listed	
Plantae	Flora	Grevillea caleyi	Caley's Grevillea	Critically Endangered	Category 3	Critically Endangered	
Plantae	Flora	Haloragodendron lucasii		Endangered	Not Sensitive	Endangered	
Plantae	Flora	Hibbertia puberula		Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Hibbertia superans		Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Isotoma fluviatilis subsp. fluviatilis		Not Listed	Not Sensitive	Extinct	
Plantae	Flora	Kunzea rupestris		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Lasiopetalum joyceae		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Leptospermum deanei		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Macadamia integrifolia	Macadamia Nut	Not Listed	Not Sensitive	Vulnerable	
Plantae	Flora	Macadamia tetraphylla	Rough-shelled Bush Nut	Vulnerable	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Melaleuca biconvexa	Biconvex Paperbark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Melaleuca deanei	Deane's Paperbark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Microtis angusii	Angus's Onion Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Persoonia hirsuta	Hairy Geebung	Endangered	Category 3	Endangered	
Plantae	Flora	Persoonia laxa		Presumed Extinct	Not Sensitive	Extinct	
Plantae	Flora	Pimelea curviflora var. curviflora		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Prasophyllum fuscum	Slaty Leek Orchid	Critically Endangered	Category 2	Vulnerable	
Plantae	Flora	Prostanthera densa	Villous Mint-bush	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Prostanthera junonis	Somersby Mintbush	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Prostanthera marifolia	Seaforth Mintbush	Critically Endangered	Category 3	Critically Endangered	
Plantae	Flora	Rhodamnia rubescens	Scrub Turpentine	Critically Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Sarcochilus hartmannii	Hartman's Sarcochilus	Vulnerable	Category 2	Vulnerable	
Plantae	Flora	Senecio spathulatus	Coast Groundsel	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Syzygium paniculatum	Magenta Lilly Pilly	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Tetratheca glandulosa		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Tetratheca juncea	Black-eyed Susan	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Triplarina imbricata	Creek Triplarina	Endangered	Not Sensitive	Endangered	

Data does not include NSW category 1 sensitive species.
NSW BioNet: © State of NSW and Office of Environment and Heritage
Data obtained 23/08/2019

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Land Title Records

ADVANCE LEGAL SEARCHERS PTY LTD

(ACN 147 943 842)
ABN 82 147 943 842

18/36 Osborne Road,
Manly NSW 2095

Telephone: +612 9977 6713
Mobile: 0412 169 809
Email: search@alsearchers.com.au

22nd August 2019

ENVIRONMENTAL INVESTIGATION SERVICES
PO BOX 976,
NORTH RYDE BC NSW 1670

Attention: Mitchell Delaney,

RE: **Brookvale Oval**
Pittwater Road,
Brookvale
Reference E32596BD

Note 1:	**Lot 6**	**DP 785409**	(page 1)
Note 2:	**Lot B**	**DP 966128**	(page 3)
Note 3:	**Lot 1**	**DP 114027**	(page 4)
Note 4:	**Lot 1**	**DP 784268**	(page 6)

Note 1:

Current Search

Folio Identifier 6/785409 (title attached)
DP 785409 (plan attached)
Dated 21st August 2019
Registered Proprietor:
THE COUNCIL OF THE SHIRE OF WARRINGAH

Title Tree
Lot 6 DP 785409

Folio Identifier 6/785409

Certificate of Title Volume 2172 Folio 109

****

Summary of proprietor(s)
Lot 6 DP 785409

Year	Proprietor(s)
	(Lot 6 DP 785409)
1988 – todate	The Council of the Shire of Warringah
	(Part Lot 47A DP 3674 – Area 2 Acres 2 Roods 12 Perches & 2 Acres 0 Roods 2 Perches – CTVol 2172 Fol 109)
1929 – 1988	The Council of the Shire of Warringah
1913 – 1929	George Augustine Try, survey draftsman
1911 – 1913	Jane Malcolm, spinster

****

Note 2:

Current Search

Folio Identifier B/966128 (title attached)
DP 966128 (plan attached)
Dated 21st August 2019
Registered Proprietor:
THE COUNCIL OF THE SHIRE OF WARRINGAH

Title Tree
Lot B DP 966128

Folio Identifier B/966128

Certificate of Title Volume 2182 Folio 234

Certificate of Title Volume 1765 Folio 211

****

Summary of proprietor(s)
Lot B DP 966128

Year	Proprietor(s)
	(Lot B DP 966128)
1988 – todate	The Council of the Shire of Warringah
	(Part Lot B DP 966128 – Area 2 Acres 0 Roods 22 ¼ Perches – CTVol 2182 Fol 234)
1911 – 1988	The Council of the Warringah Shire *(for Public Park)*
	(Lot 47A DP 3674 – Area 11 Acres – CTVol 1765 Fol 211)
1907 – 1911	Jane Malcolm, spinster

****

Note 3:

Current Search

Folio Identifier 1/114027 (title attached)
DP 114027 (plan attached)
Dated 21st August 2019
Registered Proprietor:
THE COUNCIL OF THE SHIRE OF WARRINGAH

Title Tree
Lot 1 DP 114027

Folio Identifier 1/114027

Certificate of Title Volume 13992 Folio 75

PA 53784

Certificate of Title Volume 2150 Folio 242

Certificate of Title Volume 1765 Folio 211

****

Summary of proprietor(s)
Lot 1 DP 114027

Year	Proprietor(s)
	(Lot 1 DP 114027)
1988 – todate	The Council of the Shire of Warringah
	(Lot 1 DP 114027 – CTVol 13992 Fol 75)
1979 – 1988	The Council of the Shire of Warringah *(vide Government Gazette 11th May 1979 Fol's 2299-2300)*
	(Part Lot 47A DP 3674 – Area 4 Acres 1 Rood 4 ¼ Perches – CTVol 2150 Fol 242)
1911 – 1979	The Minister for Lands of the State of New South Wales *(Proclaimed Public Park and placed under the control of the Warringah Shire Council vide Government Gazette 9th August 1911)*
	(Lot 47A DP 3674 – Area 11 Acres – CTVol 1765 Fol 211)
1907 – 1911	Jane Malcolm, spinster

****

Note 4:

Current Search

Folio Identifier 1/784268 (title attached)
DP 784268 (plan attached)
Dated 21st August 2019
Registered Proprietor:
THE COUNCIL OF THE SHIRE OF WARRINGAH

Title Tree
Lot 1 DP 784268

Folio Identifier 1/784268

Certificate of Title Volume 2172 Folio 109

****

Summary of proprietor(s)
Lot 1 DP 784268

Year **Proprietor(s)**

	(Lot 1 DP 784268)
1988 – todate	The Council of the Shire of Warringah

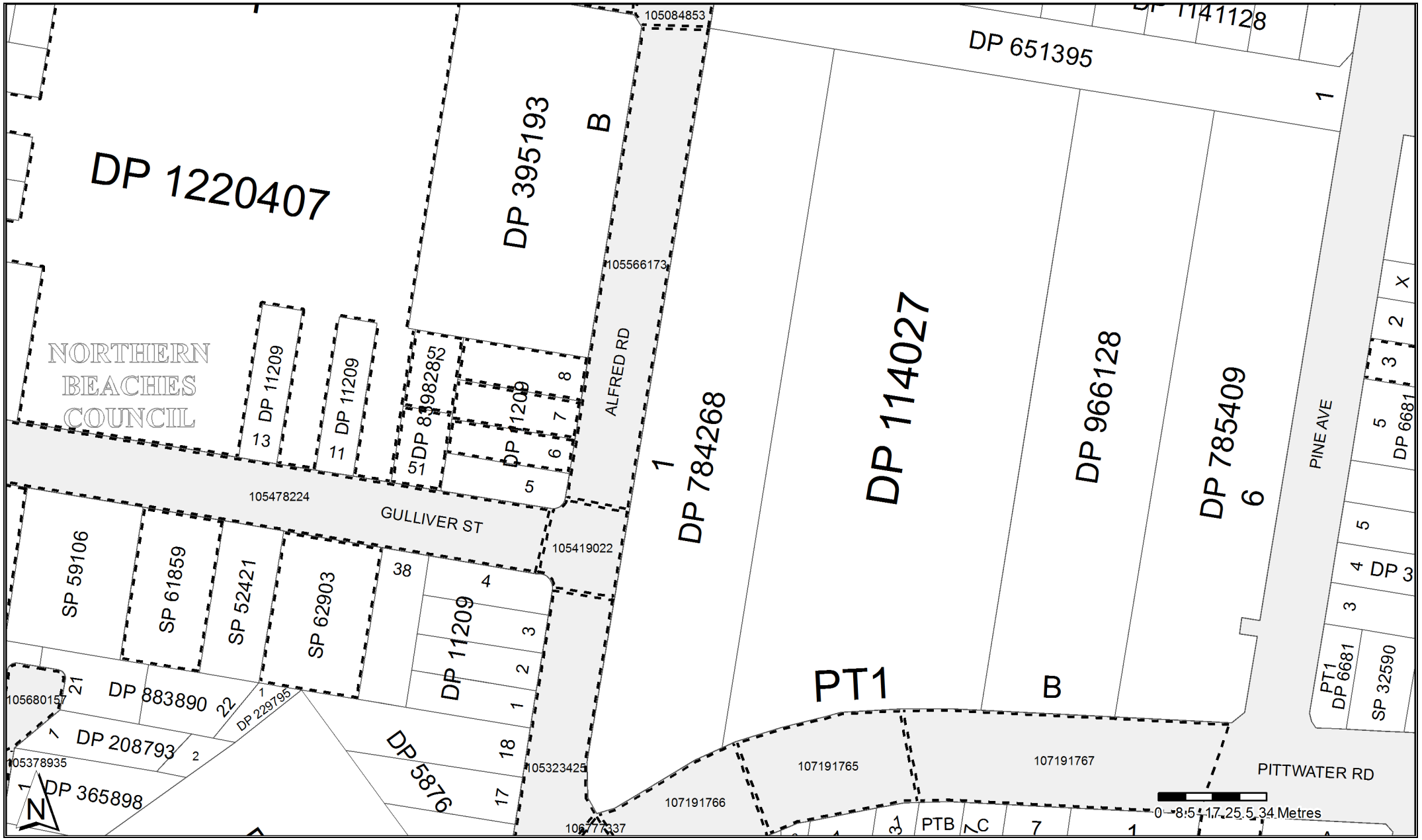
	(Part Lot 47A DP 3674 – Area 2 Acres 2 Roods 12 Perches & 2 Acres 2 Perches – CTVol 2172 Fol 109)
1929 – 1988	The Council of the Shire of Warringah
1913 – 1929	George Augustine Try, survey draftsman
1911 – 1913	Jane Malcolm, spinster

****

Cadastral Records Enquiry Report : Lot 1 DP 784268

Ref : NOUSER

Locality : BROOKVALE
Parish : MANLY COVE
LGA : NORTHERN BEACHES
County : CUMBERLAND



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	Status	Surv/Comp	Purpose
DP11209			
Lot(s): 6, 7, 8			
DP1250521	REGISTERED	COMPILATION	CONSOLIDATION
DP406507			
Lot(s): 3			
DP266757	REGISTERED	COMPILATION	EASEMENT
DP839828			
Lot(s): 51, 52			
DP1250521	REGISTERED	COMPILATION	CONSOLIDATION
DP1220407			
Lot(s): 1			
DP11209	HISTORICAL	SURVEY	UNRESEARCHED
DP12815	HISTORICAL	SURVEY	UNRESEARCHED
DP608918	HISTORICAL	COMPILATION	SUBDIVISION
DP851371	HISTORICAL	SURVEY	CONSOLIDATION
DP1132018	HISTORICAL	COMPILATION	CONSOLIDATION
DP1173782	HISTORICAL	SURVEY	CONSOLIDATION
DP1250521	REGISTERED	COMPILATION	CONSOLIDATION
DP1233407			
Lot(s): 1			
DP305588	HISTORICAL	COMPILATION	UNRESEARCHED
DP416389	HISTORICAL	SURVEY	UNRESEARCHED
DP614889	HISTORICAL	COMPILATION	CONSOLIDATION
DP1232801	PRE-ALLOCATED	UNAVAILABLE	CONSOLIDATION
SP61859			
DP11209	HISTORICAL	SURVEY	UNRESEARCHED
DP1006916	HISTORICAL	SURVEY	CONSOLIDATION
SP62903			
DP1013025	HISTORICAL	SURVEY	CONSOLIDATION
SP85006			
DP11209	HISTORICAL	SURVEY	UNRESEARCHED
DP1161762	HISTORICAL	SURVEY	CONSOLIDATION
Road			
Polygon Id(s): 105323425, 105378935, 105419022, 105478224, 105680157			
EX-SUR 67/10 DP978263			
Polygon Id(s): 105323425, 106777337, 107191765, 107191766, 107191767			
NSW GAZ. 20-03-2008 Folio : 2444 DEDICATED PUBLIC ROAD LOTS 1-5 DP259076. ERRATUM GAZ. 4-4-2008 FOL. 2617			
Polygon Id(s): 105084853, 105323425, 105378935, 105419022, 105478224, 105566173, 105680157			
EX-SUR 51/14A DP982936			

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Plan	Surv/Comp	Purpose
DP1521	COMPILATION	UNRESEARCHED
DP3674	SURVEY	UNRESEARCHED
DP5876	SURVEY	UNRESEARCHED
DP6681	SURVEY	UNRESEARCHED
DP11209	SURVEY	UNRESEARCHED
DP12815	SURVEY	UNRESEARCHED
DP22386	SURVEY	UNRESEARCHED
DP114027	COMPILATION	DEPARTMENTAL
DP119148	COMPILATION	DEPARTMENTAL
DP208793	SURVEY	SUBDIVISION
DP229795	SURVEY	RESUMPTION OR ACQUISITION
DP300412	COMPILATION	UNRESEARCHED
DP326517	COMPILATION	UNRESEARCHED
DP365898	SURVEY	UNRESEARCHED
DP395193	SURVEY	UNRESEARCHED
DP406507	SURVEY	UNRESEARCHED
DP414122	COMPILATION	UNRESEARCHED
DP510099	COMPILATION	SUBDIVISION
DP596071	SURVEY	SUBDIVISION
DP606452	SURVEY	CONSOLIDATION
DP651395	COMPILATION	DEPARTMENTAL
DP784268	COMPILATION	DEPARTMENTAL
DP785409	SURVEY	SUBDIVISION
DP795713	COMPILATION	DEPARTMENTAL
DP839828	SURVEY	SUBDIVISION
DP883890	SURVEY	SUBDIVISION
DP918786	SURVEY	UNRESEARCHED
DP966128	SURVEY	UNRESEARCHED
DP1141128	COMPILATION	DEPARTMENTAL
DP1220407	COMPILATION	CONSOLIDATION
DP1220407	UNRESEARCHED	CONSOLIDATION
DP1233407	SURVEY	CONSOLIDATION
SP32590	COMPILATION	STRATA PLAN
SP45481	COMPILATION	STRATA PLAN
SP52421	COMPILATION	STRATA PLAN
SP52715	COMPILATION	STRATA PLAN
SP59106	COMPILATION	STRATA PLAN
SP61859	COMPILATION	STRATA PLAN
SP62903	COMPILATION	STRATA PLAN
SP85006	COMPILATION	STRATA PLAN
SP85006	UNRESEARCHED	STRATA PLAN

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Req:R828460 /Doc:CP 03390-3000 P /Rev:29-Nov-2012 /NSW LRS /Prt:21-Aug-2019 08:45 /Seq:1 of 1
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PLAN

of part of Block 47A Deposited Plan 3674

County of Cumberland Parish of Manly Cove

LAND DISTRICT METROPOLITAN LAND BOARD DISTRICT OF SYDNEY

Warringah Shire

To be purchased for a Park for Brookvale

Ms. 11.1740
with Ms. 11.13448.

Area 'A' to be purchased by The Crown Purchased by The Minister for Lands vide Cert. Tit. Vol. 2150 Fol. 242 (Proclaimed Public Park and placed under the control of the Warringah Shire Council. Gaz. 9th August 1911.

Area 'B' to be purchased by the Warringah Shire Council Purchased by The Warringah Shire Council Cert. Tit. V. 2182 F. 234 for Public Park

Pt 2r. 2½p. resumed for purposes of the M. Rds. Act Gaz. 21-6-57 Ms. 16253 Sy. R.

Road Closed Gaz 25-10-63 Rds 35-274. R 25107 1603 R

1145 (PH)

Resumed Gazette 6th January 1950

D. P. 3674

Ms 13757 Sy

FEDERAL PARADE 100 WIDE

200 3914 2086 200

BLOCK 47A

'A' 'B'

ALFRED ROAD 100 WIDE

PINE AVENUE 100 WIDE

3674 D P

William (Purchased) *Redman* (Purchased)

1194.6 1037.65 1014.5

00.04 00.00 00.00

Cleared land

4ac 1r 4⅗p 2ac 0r 22⅓p

Cert. of Title Vol. 1765 Fol. 211

Almost level

50acs Ct

Ms. 16253 Sy R (2r. 25p.)

245.6 83.6 271.5 226° 55½ 248° 51½ 263° 39 263° 39 201.24

1034.6 found 2099.4

ROAD 100 WIDE 2 2650

from Manly PITTWATER W to Pittwater

¢ Pt 2r 2½p

Corners marked ^ on peg

Azimuth taken from a-b

Field Book Vol. 1560 Folio 6

Reference to Corners

Corner	Bearing	From	Links	N° on Tree

Value of Improvements

Reference to Traverse

Line	Bearing	Distance

PLAN MICROFILMED
NO ADDITIONS OR AMENDMENTS TO BE MADE

Scale 2 Chains to an Inch.

I hereby certify that I in person made and on the Feb 1st 1911 completed the survey represented on this plan on which are written the bearings and lengths of the lines measured by me and I declare that the survey has been executed in accordance with the regulations published for the guidance of Licensed Surveyors and the practice of the Department of Lands.

S. B. Madsen
Licensed Surveyor

Transmitted to the District Surveyor with my letter of Feb 2nd N11-10

Voucher N° *Passed*
Calculation Book N° *Folio*
Checked and Charted *Lakinumber 27th November 1911*
Examined and Plan approved *C. Edwards Draftsman-in-Charge 27th Nov 1911*

3390 - 3000

Tracing Prepared 13/3/53.

Ms 3390 Sy

Req:R828263 /Doc:CT 13992-075 CT /Rev:24-Jan-2011 /NSW LRS /Pgs:ALL /Prt:21-Aug-2019 08:17 /Seq:1 of 2
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[redacted]FICATE OF TITLE

NEW SOUTH WALES

[redacted]AL PROPERTY ACT, 1900

Appln No. 53784

Vol. 13992 Fol. 75

EDITION ISSUED

5 11 1979

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

CANCELLED

Registrar General.

SEE AUTO FOLIO

(Page 1) Vol. 13992 Fol. 75

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES

REFERENCE	
1	7·775
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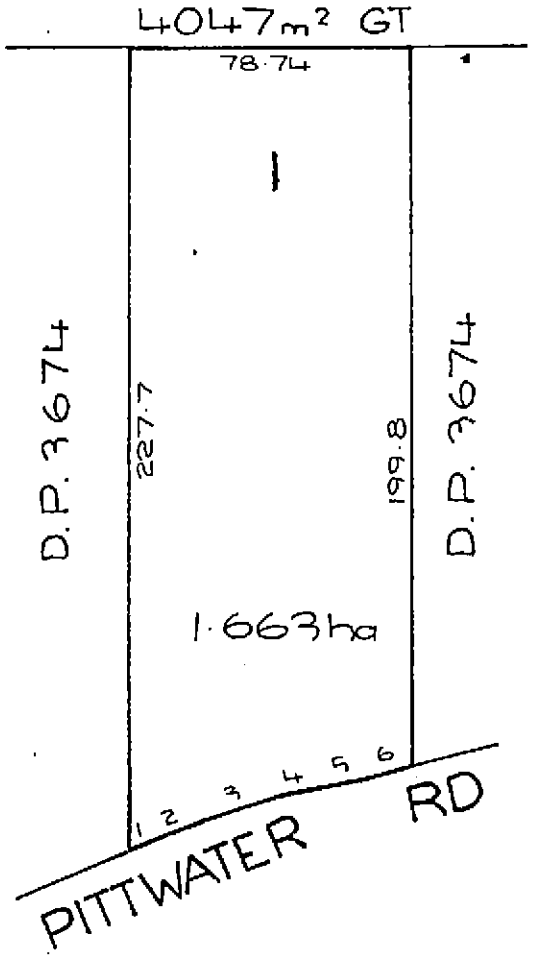
6	8·28



P.A. 53784

REDUCTION RATIO 1:200

S

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 1 in Deposited Plan 114027 in the Shire of Warringah Parish of Manly Cove and County of Cumberland being land for which no Crown Grant has issued. EXCEPTING THEREOUT all minerals.

FIRST SCHEDULE

THE COUNCIL OF THE SHIRE OF WARRINGAH.

GRN
XM
AA

SECOND SCHEDULE

1. The within proprietor holds subject to the provisions of Part IIIC of the Crown Lands Consolidation Act, 1913.

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.

RG 2/62 NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Vol. 13992 Fol. 75

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	REGISTERED	Signature of Registrar General

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	PARTICULARS	REGISTERED	Signature of Registrar General	CANCELLATION	

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

Req:R828263 /Doc:CT 13992-075 CT /Rev:24-Jan-2011 /NSW LRS /Pgs:ALL /Prt:21-Aug-2019 08:17 /Seq:2 of 2
© Office of the Registrar-General /Src:GLOBALX /Ref:advlegs

RG 2/18

PLAN OF PT LOT 47A D.P.3674

D.P.1114027

~~Mun.~~/Shire ~~City~~ : WARRINGAH

Locality: BROOKVALE

Parish: MANLY COVE

County: CUMBERLAND

Reduction Ratio 1: 200

Lengths are in metres

Registered: 30-10-1979

C.A.: _____

Title System: CROWN LAND

Purpose: DEPARTMENTAL P.A.53784(3)

Ref. Map: WARRINGAH SH. 69

Last Plan: (D.P.3674, *D.P.259076*)

D
–
D
–
0
0
Z

Prepared in Registrar General's Office 29.10.79

Exmd.: 30-10-79

REFERENCE	
1	7.775
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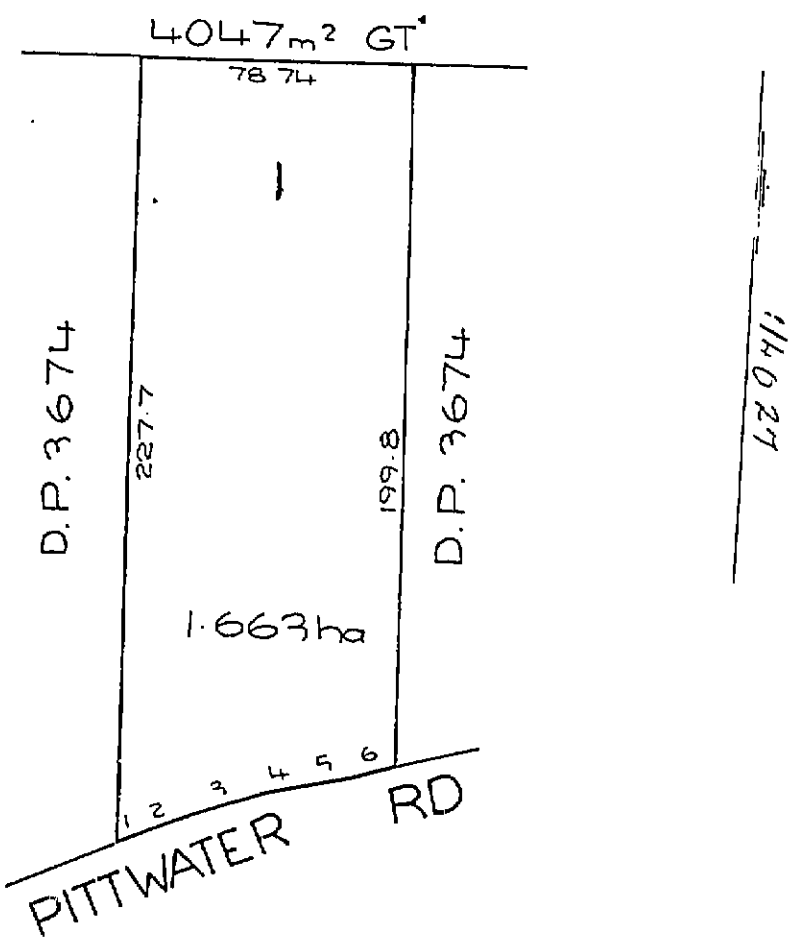
3	17.15
4	17.15
5	17.15
6	8.28



10 | | | | 50 | | | | 90 | Table of mm | 130 | | | 170 | | | | 210

10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | Table of mm

I, Bruce Richard Davies, Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this 5th day of November, 1979

© Office of the Registrar-General /Src:GLOBALX /Ref:advlegs
Req:R828241 /Doc:DP 0114027 P /Rev:23-Dec-1992 /NSW LRS /Pgs:ALL /Prt:21-Aug-2019 08:12 /Seq:1 of 1

LT2/16

PLAN OF THE LAND COMPRISED IN
VOL. 2172 FOL. 109

~~Mun.~~/Shire/~~City~~ WARRINGAH

Town or Locality BROOKVALE

Parish MANLY COVE

County CUMBERLAND

Reduction Ratio 1: 1250 Lengths are in metres

D P 784268

Registered: 07 7-12-1988

C.A.:

Title System: TORRENS

Purpose: DEPARTMENTAL

Ref. Map: U1860-63#

Last Plan: D. P. 966128

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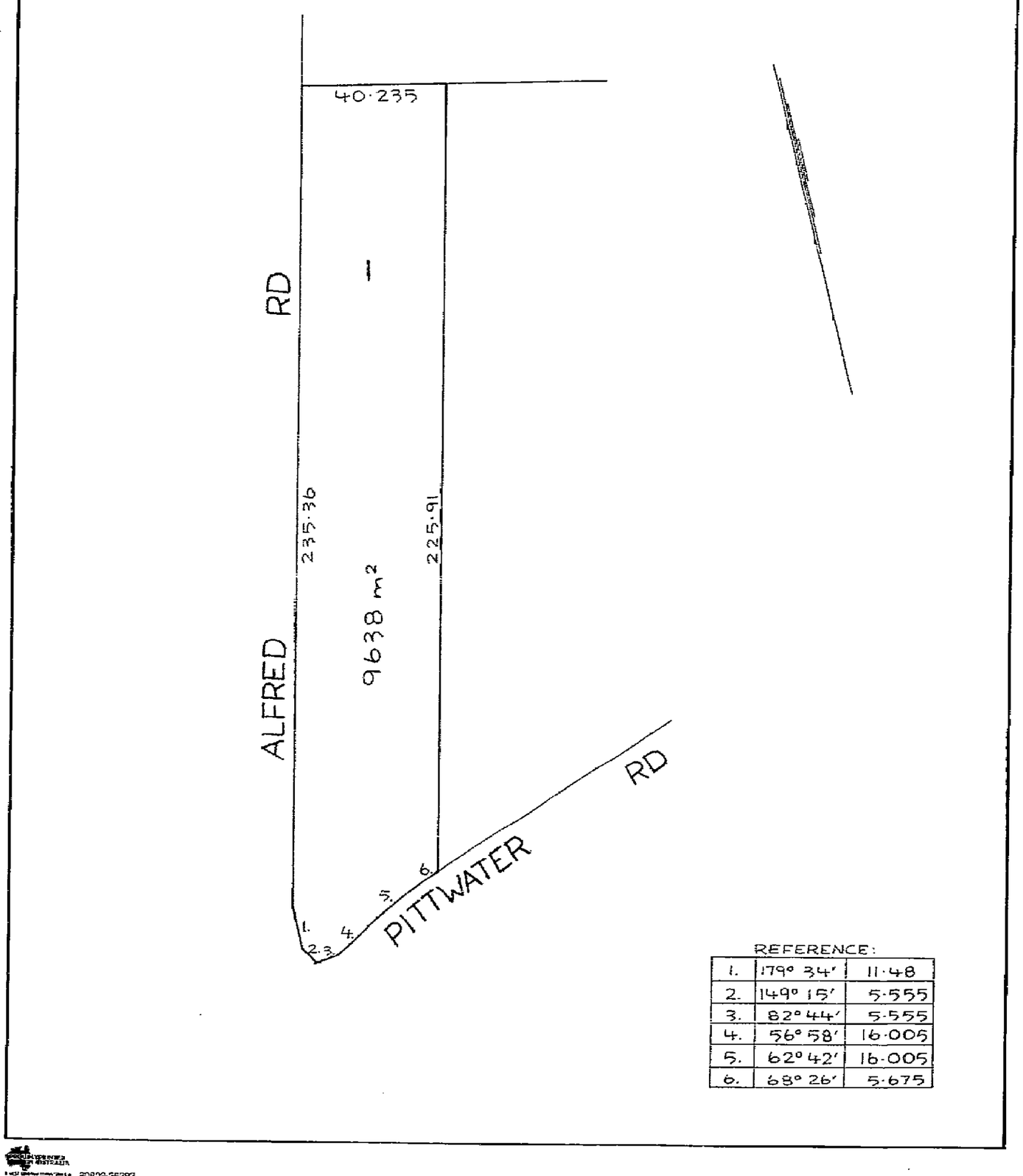

REFERENCE:

1.	179° 34'	11·48
2.	149° 15'	5·555
3.	82° 44'	5·555
4.	56° 58'	16·005
5.	62° 42'	16·005
6.	68° 26'	5·675

30809-36392

	10	20	30	40	50	60	70 Table of mm		110	120	130	140

This negative is a photograph made as a permanent record of a document in the custody of the Registrar General this day. 8th December, 1988.

Req:R828243 /Doc:DP 0784268 P /Rev:27-Oct-1992 /NSW LRS /Pgs:ALL /Prt:21-Aug-2019 08:12 /Seq:1 of 1
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© Office of the Registrar-General /Src:GLOBALX /Ref:advlegs
Req:R828239 /Doc:DP 0785409 P /Rev:24-Oct-1992 /NSW LRS /Pgs:ALL /Prt:21-Aug-2019 08:12 /Seq:1 of 1

PLAN FORM 2 — Plan Drawing only to appear in this space — *OFFICE USE ONLY

Signatures and seals only.

THE COMMON SEAL of THE COUNCIL OF THE SHIRE OF WARRINGAH was hereto affixed this 25th day of July 1988 pursuant to an order made ... delegated authority by the General Manager/Shire Clerk of the Council

.....
Chief Executive Officer

.....
General Manager /Shire Clerk

FORMERY "FEDERAL PARADE" CLOSED GOVT. GAZ. 25-10-1963

DIAG.
RATIO 1 : 1250

Pt B
D. P. 966128
6
7729 m²
40·235
195·19
52·875
PINE AVENUE
5·6
3
5·6
24·195
36·825
PITTWATER RD.

"BROOKVALE OVAL"
6
(SEE DIAG.)

PINE AVE.
(20·115 WIDE)
100°16'
5·6
(1·145)
16'
10°16'
5
(V)
5
D.H.&W.
5·6
280°16'
R.M.D.H.&W.
280°16'
5·46
24·195
FREE CONC. OVER OUSE OVER
190°
PINE
R.M.G.P.FD. (0·015 E 0·015 N) D.P. 406507
(0·1)
4
D.P. 406507
4
D.P. 6681
3
(0·045)
BL. SHOPS & OFFICES
Pt 1
D.P. 6681

(V) ROAD WIDENING

T. M.

R.M.D.H.&W.FD. 35°12'-57 D.P. 259076
270°41'
17·15
87·32
273° 54' 45"
232°08' 5·45
BOLT FD. AT INT'N.
57·08
277° 01' 20"
261° 24'
TO P.M. 1482
P.M. 1483

PITTWATER ROAD
ALIGNED 3·66 - 12·8 - 3·66 (W2-2650)
28·955 WIDE (MS. 16253 SY.)
MAIN ROAD Nº 164

R.M.GONE
99°
(0·04) (D.P. 259076)
"A"
54'
B
C
D. P. 326517

45'
R.
(0·28)
A.P. FD.
R. L.
R.AS L.
B·38
"B"
WEST ST.

DP 785409 *

Registered: BA 16-11-1988
C.A.: No. 8805 OF 23-12-1985
Title System: TORRENS
Purpose: SUBDIVISION
Ref. Map: U 1860 - 63 #
Last Plan: D.P. 966128

PLAN OF ROAD WIDENING BEING PART LOT C IN D.P. 966128

Reduction Ratio 1: 500
Lengths are in metres.

~~Mun./Shire City~~ WARRINGAH
Locality: BROOKVALE
Parish: MANLY COVE
County: CUMBERLAND

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

I, ALAN LORIS BULL
of THE SYDNEY COUNTY COUNCIL
a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan AS REGARDS ROAD WIDENING
is accurate and has been made *(1) by me ~~(2) under my immediate supervision~~ in accordance with the Survey Practice Regulations, 1933, and was completed on † 6·6·85
Signature Alan L. Bull
Surveyor registered under Surveyors Act, 1929, as amended.
Datum Line of Azimuth: A - B
*Strike out either (1) or (2). †Insert date of survey.

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

IT IS INTENDED TO DEDICATE THE LAND MARKED "ROAD WIDENING" TO THE PUBLIC AS ROAD

PLANS USED IN PREPARATION OF SURVEY
D.P. 259076, D.P. 966128, D.P. 406507, D.P. 6681, D.P. 326517, R. 25107 - 1603 R, 3390 - 9000

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 Road Widening
(Insert "new road", "subdivision" or "consolidation (of)") set out hereon
Subdivision No. 8805
Date 23rd December 1985
(Signature) .....
Council Clerk

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

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 Table of mm 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390

M.P.D.

SAW:/ F.F.6 / 045 / T17 - ST / FILE 1122-83 / 16312 / KRS

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

SURVEYOR'S REFERENCE S.8369/1A

This negative is a photograph made as a permanent record of a document in the custody of the Registrar General this day. 16th November, 1988.

10 20 30 40 50 60 70 Table of mm 110 120 130 140

Warringah Shire

Papers

Gt.No. MS33905Y

~~E05444~~

PLAN

of part of Block 47A Deposited Plan 3674

County of Cumberland Parish of Manly Cove

Land District Metropolitan Land Board District of Sydney Eastern Division

To be purchased for a Park for Brookvale

Area "A" to be purchased by The Crown

Area "B" to be purchased by the Warringah Shire Council.

605444

MAIN ROADS BOARD
01903 6 FEB 1911
LANDS DEPT

F.P. 966128

1145(Ph)

D. P. 3674

FEDERAL PARADE 100 wide

200 | 391.4 | 208.6 | 200

WILLIAM ROAD 100 WIDE

PINE AVENUE 100 WIDE

Block "A" 47A "B" "C"

"A" Cleared 4ac. 1r. 4⅔p. Cert. of Title

"B" Land 2ac 0r 22⅓p. Vol. 1765

"C" 2ac 0r 2p Fol. 211

Almost Level

50 AC Ct

Redman

1194.6 | 1037.65 | 1014.5 | 992.3

ALFRED ROAD

PITTWATER ROAD 100 WIDE

245.6 | 103.46 | 209.94 | 201.24 | 100.6 feet

83.6 Subdivision | 248·51½·3 | 263·39' | 263·39'

to Pittwater

Azimuth taken from a b (Map)

Old Block Vol 7560 Fol 6

From Manly

Reference to Corners

Mks	Bearing	From	Links	To
Peg				

Reference to Traverse

Line	Bearing	Distance

Corners marked ∧ on pegs.

Scale 2 Chains to an Inch.

I hereby certify that I in person made and on the 1st Feb'y 1911 completed the survey represented on this plan on which are written the bearings and lengths of the lines measured by me and I declare that the survey has been executed in accordance with the regulations published for the guidance of Licensed Surveyors and the practice of the Department of Lands.

(Sd) S. B. Madsen Licensed Surveyor

Transmitted to the District Surveyor with my letter of 2nd Feb'y 11 S 10

Voucher No Passed.

Calculation Book No A. 142 Folio 46

Checked and Charted

Examined and Plan approved (Sd) C. Edwards

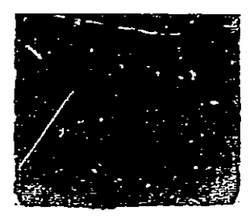
Draftsman/Asst. Chief

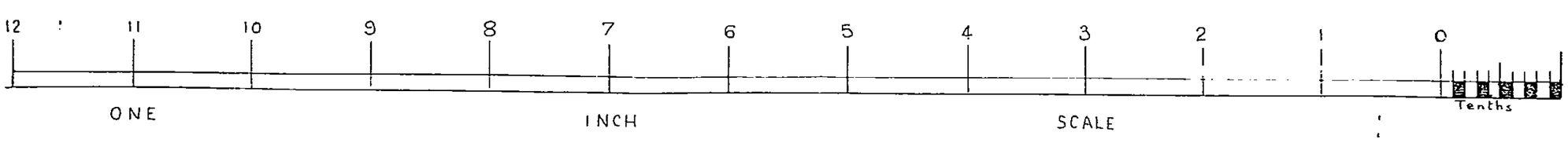
Cat. No MS33905Y

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.

13th August, 1981

AMENDMENTS AND/OR ADDITIONS NOTED ON PLAN IN REGISTRAR GENERAL'S OFFICE.





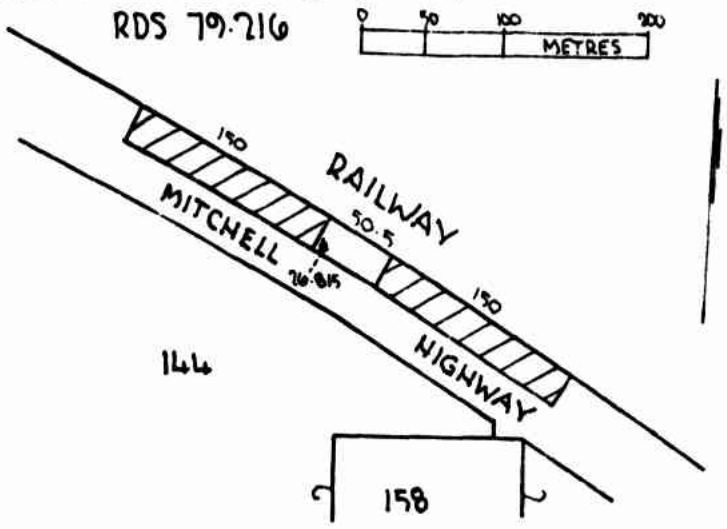
req:R828240 /Doc:DP 0966128 P /Rev:15-Dec-1992 /NSW LRS /Pgs:ALL /Prt:21-Aug-2019 08:12 /Seq:1 of 1
© Office of the Registrar-General /Src:GLOBALX /Ref:advlegs

Land District—Goulburn; Shire—Mulwaree

P. W. F. and D. M. Berry. The road separating portion 71 from portion 114. Parish Baw Baw, County Argyle. Rds 79-265.

Land District—Dubbo; Shire—Talbragar

Mervyn Edward Kirk and Mary Josephine Kirk. Road (Part Mitchell Highway) shown by hatching on diagram hereunder. Parish Murrumbidgerie, County Lincoln. Rds 79-216.



(2733) Sydney, 11th May, 1979.

RESERVES FROM SALE

IN pursuance of the provisions of section 28, Crown Lands Consolidation Act, 1913, I declare that the Crown lands described hereunder shall be reserved from sale for the public purposes specified and such lands are reserved accordingly.

W. F. CRABTREE, Minister for Lands.

FOR PRESERVATION OF NATIVE FLORA
LORD HOWE ISLAND

No. 91441, 1 472 square metres, being that part of Middle Beach Road separating portions 94 and 162. L.H.I. 2211.

FOR FUTURE PUBLIC REQUIREMENTS

Land District and Shire—Mudgee

No. 91442, Parish Hargraves, County Wellington, 478.5 hectares, being portions 12, 188 and 189. L.B. 77-331, Dubbo.

(2734) Sydney, 11th May, 1979.

RESERVE FROM SALE

IN pursuance of the provisions of section 29, Crown Lands Consolidation Act, 1913, I declare that the land described hereunder shall be reserved from sale generally.

W. F. CRABTREE, Minister for Lands.

Land District—Glen Innes; Shire—Severn

No. 91438, Parish Flagstone, County Gough, about 1 044 hectares, being portions 17 and 20. L.B. 78-486, Armidale.

(2736) Sydney, 11th May, 1979.

PROPOSED REVOCATION OF DEDICATIONS

AS I am of the opinion that the purposes of the dedications of the areas described hereunder have failed, notice is given in accordance with the provisions of section 25, Crown Lands Consolidation Act, 1913, that it is intended to revoke such dedications with a view to dealing with the lands in accordance with the provisions of that Act.

W. F. CRABTREE, Minister for Lands.

Land District—Muswellbrook; Shire—Denman

Parish Arndell, County Hunter, 8 094 square metres, being portion 146 dedicated 2nd August, 1902, for Public School Purposes. L.B. 79-161, Maitland. S.B. 78-005892.

Land District—Muswellbrook; Shire—Merriwa

Parish Mackenzie, County Brisbane, 8 094 square metres, being portion 43, dedicated 15th May, 1888, for Public School Purposes. L.B. 79-160, Maitland. S.B. 78-005825.

Land District—Metropolitan; Municipality—Woollahra

Parish Alexandria, County Cumberland, 1 796 square metres at Vaucluse, being portion 1581, dedicated 25th June, 1948, for Soldiers Memorial Hall. L.B. 72-811, Metropolitan.

(2735) Sydney, 11th May, 1979.

ADDITION TO RESERVE FROM SALE

IN pursuance of the provisions of section 28, Crown Lands Consolidation Act, 1913, I declare that the Crown land described hereunder shall be added to the land within the reserve specified in parenthesis hereunder and such land is added accordingly.

W. F. CRABTREE, Minister for Lands.

FOR PUBLIC RECREATION

Land District and Shire—Blayney

Parish Carlton, County Bathurst, 8 094 square metres, being portion 149 (R. 80860, notified 18th July, 1958). L.B. 79-395, Orange.

(2738) Sydney, 11th May, 1979.

CANCELLATION OF NOTIFICATION

Land District—Glen Innes; Shire—Severn

THE notification appearing in the Government Gazette of 27th April, 1979, folio 2025 (2464) under the heading "Reserves From Sale", in respect of Reserve 91438 from sale generally, is hereby cancelled. L.B. 78-486, Armidale.

W. F. CRABTREE, Minister for Lands.

(2737) Sydney, 11th May, 1979.

NOTIFICATION OF VESTING OF LANDS IN PURSUANCE OF THE PROVISIONS OF SECTION 37AAA OF THE CROWN LANDS CONSOLIDATION ACT, 1913

IN pursuance of the subject provisions, I, WILLIAM FREDERICK CRABTREE, Minister for Lands, being of the opinion that—

(a) the lands described in the Schedule hereto are suitable for use as a public reserve within the meaning of the Local Government Act, 1919; and

(b) it is proper that, having regard to the purpose (if any) for which the lands described are used, those lands should be vested in a council,

do by this notification vest those lands in the Council of the Shire of Warringah for an estate in fee simple subject to the following reservations and exceptions unto Her Majesty, Elizabeth the Second, by the Grace of God Queen of Australia and Her Other Realms and Territories, Head of the Commonwealth, Her Heirs and Successors of—

(i) all minerals which those lands contain with full power and authority for Her Majesty, Her Heirs and Successors, and such person or persons as shall from time to time be authorized by Her Majesty, Her Heirs or Successors to enter upon those lands and to search for mine dig and remove those minerals;

(ii) all such parts and so much of those lands as may hereafter be required for public ways in over and through the same to be set out by His Excellency, the Governor for the time being of the State of New South Wales or some person by him authorized in that respect with full power for Her Majesty, Her Heirs and Successors and for His Excellency, the Governor as aforesaid by such person or persons as shall be by Her Majesty, Her Heirs and Successors or His Excellency, the Governor as aforesaid authorized in that behalf to make and conduct all such public ways; and

(iii) the right of full and free ingress egress and regress into out of and upon those lands for the several purposes aforesaid or any of them.

The lands described in the Schedule hereto are declared to be a public reserve for the purposes of the Local Government Act, 1919.

This notification shall take effect on and from the date of publication of this Gazette.

Signed at Sydney, this 26th day of April, 1979.

W. F. CRABTREE, Minister for Lands.

National Library of Australia http://nla.gov.au/nla.news-page14475931

SCHEDULE

Parish Manly Cove, County Cumberland, about 1.528 hectares at Brookvale Park, being part of lot 47A, D.P. 3674 and comprising the land within Certificate of Title, volume 2150, folio 242, exclusive of the land vested in the Commissioner for Main Roads 21st June, 1957.

The lands in this schedule are vested in the Council of the Shire of Warringah. Pks 66 3493.

(2739) Sydney, 11th May, 1979.

WITHDRAWAL OF RESERVE FROM CONTROL OF PASTURES PROTECTION BOARD

IN pursuance of the provisions of section 42 (1), Pastures Protection Act, 1934, the part of the reserve specified hereunder is withdrawn from the control of the Pastures Protection Board for the Pastures Protection District.

W. F. CRABTREE, Minister for Lands.

Land Board District—Dubbo; Pastures Protection District—Walgett

Parish Walgett, County Denham, Reserve No. 26028 for Travelling Stock. Part withdrawn—4.498 hectares, being lot 94, D.P. 39499. L.B. 76-947, Dubbo.

(Placed under control, Gazette, 9th September, 1932.)

(2740) Sydney, 11th May, 1979.

DECLARATION UNDER SECTION 25A, CROWN LANDS CONSOLIDATION ACT, 1913, IN RESPECT OF LAND

IN pursuance of the provisions of section 25A, Crown Lands Consolidation Act, 1913, I declare that the land particularized hereunder may be dealt with as if it had been acquired under the Closer Settlement Acts or as Crown land within the meaning of the Crown Lands Consolidation Act, 1913.

W. F. CRABTREE, Minister for Lands.

LAND VESTED IN THE MINISTER FOR LANDS

Land District—Metropolitan; Shire—Warringah

Parish Manly Cove, County Cumberland, about 1.528 hectares, being part of lot 47A, D.P. 3674, and comprising the land within Certificate of Title, volume 2150, folio 242, exclusive of the land vested in the Commissioner for Main Roads. 21st June, 1957. Pks 66-3493.

(2758) Sydney, 11th May, 1979.

PROPOSED REVOCATION OF DEDICATION AND GRANT

AS I am of the opinion that the purpose of the dedication of the area described hereunder has failed, notice is given, in accordance with the provisions of section 25, Crown Lands Consolidation Act, 1913, that it is intended to revoke such dedication and affected grant with a view to dealing with the land in accordance with the provisions of that Act.

W. F. CRABTREE, Minister for Lands.

Land District—Muswellbrook; Shire—Denman

Parish Balmoral, County Durham, 8 094 square metres, being portion 320 dedicated 5th August, 1879, for Public School Site at Muscle Creek and being also the land in Crown Grant, volume 480, folio 211. L.B. 79-223, Maitland. (S.B. 78/005845)

(2759) Sydney, 11th May, 1979.

ERRATA

Land District—Gosford; Shire—Wyong

IN the notification appearing in the Government Gazette of 24th November, 1978, folio 4870 (9160) under the heading "Additions to Reserves from Sale", in respect of Reserve 78212 for Future Public Requirements, the plan number should have read D.P. 257306 and not as notified. L.B. 76-895, Maitland.

Land District and City—Newcastle

IN the notification appearing in the Government Gazette of 5th November, 1976, folio 4904, under the heading "Notification of Grant of Easements", in lieu of "allotment 10, section 10, on plan N.9024-2111" insert "allotment 10, section 6, on plan N.9024-2111." Ten. 79-9030.

W. F. CRABTREE, Minister for Lands.

(2746) Sydney, 11th May, 1979.

ERRATA

Land District—Warialda; Shire—Yallaroi

IN the notification appearing in the Government Gazette of 27th April, 1979, folio 2024 (2462) under the heading "Extension of Terms of Prickly-pear Leases", the annual rent shown in respect of Prickly-pear Lease 1945-1 should have read $20 and not as notified. P.P. 12867. Account No. 081477.

Land District and Shire—Scone

IN the notification appearing in the Government Gazette of 27th April, 1979, folio 2024 (2462) under the heading "Extension of Terms of Prickly-pear Leases", the annual rent shown in respect of Prickly-pear Lease 1951-1 should have read $20 and not as notified. P.P. 14466.

W. F. CRABTREE, Minister for Lands.

(2666) Board of Surveyors, Department of Lands, Sydney, 11th May, 1979.

THE undermentioned has been registered as a Surveyor under the provisions of the Surveyors Act, 1929, as from 27th April, 1979.

Cummins, Adrian John—Cummins, Shaw & Co., P.O. Box 271, Bendigo 3550.

J. DARBY, President.

S. CRITCHLEY, Acting Registrar.

(2657) Sydney, 11th May, 1979.

GEOGRAPHICAL NAMES ACT, 1966—ERRATA

IN the notification of geographical place names on Central Mapping Authority 1:50 000 map of RYLSTONE (within MUDGEE 8832 1:100 000 map area), published in the Government Gazette of 10th November, 1978, the geographical name "Rocky Waterhole" should read "Rocky Waterhole Creek" and not as previously stated.

IN the notification of geographical place names on Central Mapping Authority 1:50 000 map of RYLSTONE (within MUDGEE 8832 1:100 000 map area), published in the Government Gazette of 21st July, 1978, the geographical name "Fitzgerald Mount" should read "Fitzgerald, Mount" and not as previously stated.

D. C. MILLER, Secretary, Geographical Names Board.

(2663) Sydney, 11 May, 1979.

GEOGRAPHICAL NAMES ACT, 1966

HAVING received an application to rename certain place names on Central Mapping Authority 1:50 000 map of BARADINE (within BARADINE 8736 1:100 000 map area), County Baradine, Shire Coonabarabran, Land Districts Coonabarabran and Narrabri, the Geographical Names Board of New South Wales has this day discontinued the geographical names shown in the first column hereunder and assigned in their place the geographical names shown in the third column hereunder.

Geographical Name Discontinued	*Designation*	*Geographical Name Assigned*	*Latitude*	*Longitude*	*Parish*
Alloe Well	Well	Aloes Well	30° 45′	149° 06′	Mackenzie
Baradine Creek (part of)	Creek	Dandry Creek	31° 04′	149° 17′	Wittenbra, etc.
(Refers to that part previously recorded as Dandry Creek).					
Dubbo Creek	Creek	Etoo Creek	30° 55′	149° 11′	Coolangoola
Etoo Creek	Creek	Gibbican Creek	30° 55′	149° 05′	Minnon, etc.
Lower Crossing	Locality	Bottom Crossing	30° 59′	149° 08′	Wittenbra
Wanganns Tank	Tank	Wangmans Tank	30° 47′	149° 03′	Mackenzie
Yearinan Creek	Creek	Baradine Creek	30° 05′	149° 13′	Parsons, etc.
(Refers to the part of the watercourse below the junction with Wittenbra Creek).					

D. C. MILLER, Secretary, Geographical Names Board, Box 39, G.P.O., Sydney.

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NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 1/114027

SEARCH DATE	TIME	EDITION NO	DATE
21/8/2019	8:13 AM	-	-

VOL 13992 FOL 75 IS THE CURRENT CERTIFICATE OF TITLE

LAND

LOT 1 IN DEPOSITED PLAN 114027
LOCAL GOVERNMENT AREA NORTHERN BEACHES
PARISH OF MANLY COVE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP114027

FIRST SCHEDULE

THE COUNCIL OF THE SHIRE OF WARRINGAH

SECOND SCHEDULE (2 NOTIFICATIONS)

1 LAND EXCLUDES MINERALS
2 THE WITHIN PROPRIETOR HOLDS SUBJECT TO THE PROVISIONS OF PART IIIC OF THE CLC ACT, 1913

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

advlegs PRINTED ON 21/8/2019

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NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 1/784268

SEARCH DATE	TIME	EDITION NO	DATE
21/8/2019	8:14 AM	2	20/2/2013

LAND

LOT 1 IN DEPOSITED PLAN 784268
AT BROOKVALE
LOCAL GOVERNMENT AREA NORTHERN BEACHES
PARISH OF MANLY COVE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP784268

FIRST SCHEDULE

THE COUNCIL OF THE SHIRE OF WARRINGAH

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AH565572 POSITIVE COVENANT
3 AH565573 RESTRICTION(S) ON THE USE OF LAND

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

advlegs PRINTED ON 21/8/2019

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NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 6/785409

SEARCH DATE	TIME	EDITION NO	DATE
21/8/2019	8:12 AM	1	15/12/1988

LAND

LOT 6 IN DEPOSITED PLAN 785409
AT BROOKVALE
LOCAL GOVERNMENT AREA NORTHERN BEACHES
PARISH OF MANLY COVE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP785409

FIRST SCHEDULE

THE COUNCIL OF THE SHIRE OF WARRINGAH

SECOND SCHEDULE (1 NOTIFICATION)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

NOTATIONS

NOTE: THE CERTIFICATE OF TITLE FOR THIS FOLIO OF THE REGISTER DOES NOT INCLUDE SECURITY FEATURES INCLUDED ON COMPUTERISED CERTIFICATES OF TITLE ISSUED FROM 4TH JANUARY, 2004. IT IS RECOMMENDED THAT STRINGENT PROCESSES ARE ADOPTED IN VERIFYING THE IDENTITY OF THE PERSON(S) CLAIMING A RIGHT TO DEAL WITH THE LAND COMPRISED IN THIS FOLIO.

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

advlegs PRINTED ON 21/8/2019

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* 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. GlobalX 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. Note: Information contained in this document is provided by GlobalX Pty Ltd, ABN 35 099 032 596, www.globalx.com.au an approved NSW Information Broker.

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: B/966128

SEARCH DATE	TIME	EDITION NO	DATE
21/8/2019	8:13 AM	-	-

VOL 2182 FOL 234 IS THE CURRENT CERTIFICATE OF TITLE

LAND

LOT B IN DEPOSITED PLAN 966128
AT BROOKVALE
LOCAL GOVERNMENT AREA NORTHERN BEACHES
PARISH OF MANLY COVE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP966128

FIRST SCHEDULE

THE COUNCIL OF THE SHIRE OF WARRINGAH (T 614119)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
* 2 THE LAND ABOVE DESCRIBED WAS TRANSFERRED TO THE COUNCIL OF THE SHIRE OF WARRINGAH FOR THE PURPOSE OF PUBLIC RECREATION
3 G773713 EXCEPTING THE LAND IN RESUMPTION G773713 AS SHOWN IN VOL 2182 FOL 234 (BUT NOT THE MINERALS THEREUNDER SEE SEC 141 PUBLIC WORKS ACT 1912)

NOTATIONS

NOTE: THE LAND ABOVE DESCRIBED IS THE RESIDUE OF LAND IN VOL 2182 FOL 234 CERTIFICATE OF TITLE MAY HAVE BEEN DESTROYED

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

advlegs PRINTED ON 21/8/2019

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* 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. GlobalX 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. Note: Information contained in this document is provided by GlobalX Pty Ltd, ABN 35 099 032 596, www.globalx.com.au an approved NSW Information Broker.

Section 10.7 Certificates

Northern Beaches Council Planning Certificate – Part 2&5

Applicant: Eis & Jk Group
115 Wicks Road
MACQUARIE PARK NSW 2113

Reference: E32596BD
Date: 21/08/2019
Certificate No. ePLC2019/4493

Address of Property: Pittwater Road BROOKVALE NSW 2100
Description of Property: Part Lot 1 DP 114027

Planning Certificate – Part 2

The following certificate is issued under the provisions of Section 10.7(2) of the *Environmental Planning and Assessment Act 1979* (as amended – formerly Section 149). The information applicable to the land is accurate as at the above date.

1. Relevant planning instruments and Development Control Plans

1.1 The name of each environmental planning instrument that applies to the carrying out of development on the land:

1.1a) Local Environmental Plan

Warringah Local Environmental Plan 2011

1.1b) State Environmental Planning Policies and Regional Environmental Plans

State Environmental Planning Policy 1—Development Standards
State Environmental Planning Policy 19 – Bushland in Urban Areas
State Environmental Planning Policy 21 – Caravan Parks
State Environmental Planning Policy 30 – Intensive Agriculture
State Environmental Planning Policy 33 – Hazardous and Offensive Development
State Environmental Planning Policy 50 – Canal Estate Development
State Environmental Planning Policy 55 – Remediation of Land
State Environmental Planning Policy 62—Sustainable Aquaculture
State Environmental Planning Policy 64 – Advertising and Signage
State Environmental Planning Policy 65 – Design Quality of Residential Apartment Development
State Environmental Planning Policy No 70—Affordable Housing (Revised Schemes)
State Environmental Planning Policy (Affordable Rental Housing) 2009
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004
State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008
State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004
State Environmental Planning Policy (Infrastructure) 2007
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007
State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007
State Environmental Planning Policy (State and Regional Development) 2011
State Environmental Planning Policy (State Significant Precincts) 2005
State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017
Sydney Regional Environmental Plan No 20-Hawkesbury-Nepean River (No 2-1997)
State Environmental Planning Policy No 44-Koala Habitat Protection
Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005
Sydney Regional Environmental Plan No 9-Extractive Industry (No 2-1995)

1.2 Draft Environmental Planning Instruments

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 subject of community consultation or on public exhibition under the Act (unless the Secretary has notified the Council that the making of the proposed instrument has been deferred indefinitely or has not been approved):

1.2 a) Draft State Environmental Planning Policies

Review of State Environmental Planning Policy 44 – Koala Habitat Protection
State Environmental Planning Policy No 64— Advertising and Signage (Amendment No 3)
Draft State Environmental Planning Policy (Environment)
Draft State Environmental Planning Policy (Primary Production and Rural Development)
Draft Amendment to State Environmental Planning Policy (Affordable Rental Housing) 2009

1.2 b) Draft Local Environmental Plans

Planning Proposal - Ralston Avenue (Belrose) (PEX2013/0003)

Applies to land: Lot 1 DP 1139826, Ralston Avenue, Belrose

Outline: Amends WLEP 2000 and WLEP 2011 to:

- Rezone land on Ralston Avenue Belrose from Locality C8 - Belrose North to part R2 Low Density Residential, part RE1 Public Recreation and part E3 Environmental Conservation.
- Introduce subdivision lot size and height of building controls to land proposed to be zoned R2 Low Density Residential.

Council resolution: 25 November 2014

Gateway Determination: 28 January 2015

Planning Proposal - Dee Why Town Centre Planning Controls (PEX2018/0002)

Applies to land: Dee Why Town Centre (boundaries identified within the Planning Proposal)

Outline: Amends WLEP 2011 to:

- Increase maximum permissible building heights
- Introduce floor space ratio controls
- Provide development standards in relation to car parking, building setbacks and building proportion
- Identify additional “Key Sites”
- Implement a delivery mechanism for key infrastructure and public domain improvements

Council resolution: 23 September 2014

Gateway Determination: 1 April 2015 amended 22 September 2016

1.3 Development Control Plans

The name of each development control plan that applies to the carrying out of development on the land:

Warringah Development Control Plan 2011

2. Zoning and land use under relevant Local Environmental Plans

For each environmental planning instrument or proposed instrument referred to in Clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

2.1 Zoning and land use under relevant Local Environmental Plans

2.1 (a), (b), (c) & (d)

The following information identifies the purposes for which development may be carried out with or without development consent and the purposes for which the carrying out of development is prohibited, for all zones (however described) affecting the land to which the relevant Local Environmental Plan applies.

EXTRACT FROM WARRINGAH LOCAL ENVIRONMENTAL PLAN 2011

Zone RE1 Public Recreation

1 Objectives of zone

• To enable land to be used for public open space or recreational purposes.

• To provide a range of recreational settings and activities and compatible land uses.

• To protect and enhance the natural environment for recreational purposes.

• To protect, manage and restore public land that is of ecological, scientific, cultural or aesthetic value.

• To prevent development that could destroy, damage or otherwise have an adverse effect on those values.

2 Permitted without consent

Environmental facilities; Environmental protection works; Roads

3 Permitted with consent

Boat building and repair facilities; Boat sheds; Building identification signs; Business identification signs; Car parks; Centre-based child care facilities; Community facilities; Emergency services facilities; Kiosks; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Respite day care centres; Restaurants or cafes; Water recreation structures

4 Prohibited

Any development not specified in item 2 or 3

Additional permitted uses

Additional permitted uses, if any, for which development is permissible with development consent pursuant to Clause 2.5 and Schedule 1 of the relevant Local Environmental Plan:

Nil

(e) Minimum land dimensions

The *Warringah Local Environmental Plan 2011* contains no development standard that fixes minimum land dimensions for the erection of a dwelling house on the land.

(f) Critical habitat

The land does not include or comprise critical habitat.

(g) Conservation areas

The land is not in a heritage conservation area.

(h) Item of environmental heritage

A heritage item is situated on the land as identified in Schedule 5 of the *Warringah Local Environmental Plan 2011*.

2.2 Draft Local Environmental Plan - if any

For any proposed changes to zoning and land use, see Part 1.2 b)
Please contact Council's Strategic and Place Planning unit with enquiries on 1300 434 434.

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

The *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* does not apply to the land.

3. Complying Development

The extent to which the land is land on which complying development may or may not 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 Development Codes) 2008*.

a) Housing Code

Heritage Item
For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

b) Rural Housing Code

Heritage Item

For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

c) Low Rise Medium Density Code

Complying Development under the Low Rise Medium Density Code may not be carried out on all the land.

Note: Pursuant to clause 3B.63 of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*, all land in Northern Beaches Council is a 'deferred area' meaning that the Low Rise Medium Density Code does not apply until 1 July 2019.

d) Greenfield Housing Code

Complying Development under the Greenfield Housing Code may not be carried out on all of the land.

e) Housing Alterations Code

Heritage Item

For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

f) General Development Code

Heritage Item

For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

g) Commercial and Industrial Alterations Code

Heritage Item

For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

h) Commercial and Industrial (New Buildings and Additions) Code

Heritage Item

For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan*

2011 (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

i) Container Recycling Facilities Code

Heritage Item
For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

j) Subdivisions Code

Heritage Item
For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

k) Demolition Code

Heritage Item
For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

l) Fire Safety Code

Heritage Item
For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

4, 4A (Repealed)

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

The owner of the land (or any previous owner) has not 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).

5. Mine Subsidence

The land has not been proclaimed to be a mine Subsidence (Mine Subsidence) district within the meaning of section 15 of the *Mine Subsidence (Mine Subsidence) Compensation Act, 1961*.

6. Road widening and road realignment

(a) The land is not affected by a road widening or re-alignment proposal under Division 2 of Part 3 of the *Roads Act 1993*.

(b) The land is not affected by a road widening or re-alignment proposal under an environmental planning instrument.

(c) The land is not affected by a road widening or re-alignment proposal under a resolution of Council.

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

(a) Council has adopted a number of policies with regard to various hazards or risks which may restrict development on this land. The identified hazard or risk and the respective Council policies which affect the property, if any, are listed below (other than flooding – see 7A):

Nil

(b) The following information applies to any policy as 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 a planning certificate issued by the Council. The identified hazard or risk and the respective Policy which affect the property, if any, are listed below:

Nil

7A. Flood related development control Information

(1) Development on the land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is not subject to flood related development controls.

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

8. Land reserved for acquisition

Environmental planning instrument referred to in Clause 1 does not make provision in relation to the acquisition of the land by a public authority, as referred to in section 27 of the Act.

9. Contribution plans

The following applies to the land:

Northern Beaches Section 7.12 Contributions Plan 2019

9A. Biodiversity certified land

The land is not biodiversity certified land under Part 8 of the *Biodiversity Conservation Act 2016* (includes land certified under Part 7AA of the repealed *Threatened Species Conservation Act 1995*).

10. Biodiversity Stewardship Sites

The Council has not been notified by the Chief Executive of the Office of Environment and Heritage that the land is a biodiversity stewardship site under a biodiversity stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016* (includes land to which a biobanking agreement under Part 7A of the repealed *Threatened Species Conservation Act 1995* relates).

10A. Native vegetation clearing set asides

Council has not been notified by Local Land Services of the existence of a set aside area under section 60ZC of the *Local Land Services Act 2013*.

11. Bush fire prone land

Bush Fire Prone Land
The land is not bush fire prone land.

Draft Northern Beaches Bush Fire Prone Land Map 2018
The land is not bush fire prone land.

12. Property vegetation plans

The Council has not been notified that the land is land to which a vegetation plan under the *Native Vegetation Act 2003* applies.

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

Council has not been notified of the existence of an order made under the *Trees (Disputes Between Neighbours) Act 2006* to carry out work in relation to a tree on the land.

14. Directions under Part 3A

There is not 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 a project or a stage of a project on the land under Part 4 of the Act does not have effect.

15. Site compatibility certificates and conditions for seniors housing

(a) There is not a current site compatibility certificate (seniors housing), of which the council is aware, in respect of proposed development on the land.

(b) No condition of consent applies to the property that limits the kind of people who may occupy the premises/ development. This refers only to consents granted after 11 October 2007 with conditions made in accordance with clause 18(2) of *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004*.

16. Site compatibility certificates for infrastructure, schools or TAFE establishments

There is not a valid site compatibility certificate (infrastructure) or site compatibility certificate (schools or TAFE establishments), of which the council is aware, in respect of proposed development on the land.

17. Site compatibility certificate and conditions for affordable rental housing

(a) There is not a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land.

(b) There are not 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.

18. Paper subdivision information

There is no current paper subdivision, of which council is aware, in respect of this land according to Part 16C of the *Environmental Planning and Assessment Regulation 2000*.

19. Site verification certificates

There is no current site verification certificate, of which council is aware, in respect of the land according to Part 4AA of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

20. Loose-fill asbestos insulation

The residential dwelling erected on this land has not been identified in the Loose-Fill Asbestos Insulation Register as containing loose-fill asbestos ceiling insulation.

This clause applies to residential premises (within the meaning of Division 1A of part 8 of the Home Building Act 1989) that are listed in the register that is required to be maintained under that Division.

Contact NSW Fair Trading for more information.

21 Affected building notices and building product rectification orders

(1) There is not an affected building notice of which the council is aware that is in force in respect of the land.
(2) There is not a building product rectification order of which the council is aware that is in force in respect of the land and has not been fully complied with, and
(3) There is not a notice of intention to make a building product rectification order of which the council is aware has been

given in respect of the land and is outstanding.

In this clause:

affected building notice has the same meaning as in Part 4 of the *Building Products (Safety) Act 2017*.
building product rectification order has the same meaning as in the *Building Products (Safety) Act 2017*.

Additional matters under the Contaminated Land Management Act 1997

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) the land to which the certificate relates is not significantly contaminated land within the meaning of that Act

(b) the land to which the certificate relates is not subject to a management order within the meaning of that Act

(c) the land to which the certificate relates is not the subject of an approved voluntary management proposal within the meaning of that Act

(d) the land to which the certificate relates is not subject to an ongoing maintenance order within the meaning of that Act

(e) the land to which the certificate relates is not the subject of a site audit statement

If contamination is identified above please contact the Environmental Protection Authority (EPA) for further information.

Planning Certificate – Part 5

ePLC2019/4493

The following is information provided in good faith under the provisions of Section 10.7(5) of the *Environmental Planning and Assessment Act 1979* (as amended – formerly Section 149) and lists relevant matters affecting the land of which Council is aware. The Council shall not incur any liability in respect of any such advice.

Persons relying on this certificate should read the environmental planning instruments referred to in this certificate.

Company Title Subdivision

Clause 4.1 of the *Pittwater Local Environmental Plan 2014*, *Warringah Local Environmental Plan 2011* or *Manly Local Environmental Plan 2013* provides that land may not be subdivided except with the consent of the Council. This includes subdivision by way of company title schemes. Persons considering purchasing property in the Northern Beaches local government area the

subject of a company title scheme are advised to check that the land has been subdivided with the consent of the Council.

District Planning

Under the Greater Sydney Regional Plan – A Metropolis of Three Cities 2018, the Greater Sydney Commission sets a planning framework for a metropolis of three cities across Greater Sydney which reach across five Districts. Northern Beaches is located within the 'Eastern Harbour City' area and is in the North District which forms a large part of the Eastern Harbour City. The North District Plan sets out planning priorities and actions for the growth of the North District, including Northern Beaches. Northern Beaches Council is preparing a Local Strategic Planning Statement which will give effect to the District Plan based on local characteristics and opportunities and Council's own priorities in the community.

Council Resolution To Amend Environmental Planning Instrument

The following instrument or resolution of Council proposes to vary the provisions of an environmental planning instrument, other than as referred to in the Planning Certificate – Part 2:

Planning Proposal - Response to Low Rise Medium Density Code
Applies to land: Certain land in the Pittwater Local Environmental Plan 2014 (PLEP 2014) and Manly Local Environmental Plan 2013 (MLEP 2013)
Outline: Seeks to amend the PLEP 2014 and MLEP 2013 in response to issues arising from the future implementation of the NSW Governments' SEPP (Exempt and Complying Development) Amendment (Low Rise Medium Density Code). The intent of the Planning Proposal is to prohibit:

- manor houses and multi-dwelling housing (including terraces) in zone R2 Low Density Residential zone under the Manly LEP 2013
- dual occupancy in zone R2 Low Density Residential zone under the Manly LEP 2013 and Pittwater LEP 2014
- multi-dwelling housing and dual occupancies in the R3 Zone in the Warriewood Valley under Pittwater LEP 2014

Council resolution: 26 June 2018

Planning Proposal - rezone deferred land within the Oxford Falls Valley & Belrose North area
Applies to land: Land within the B2 Oxford Falls Valley and C8 Belrose North localities of WLEP 2000 and land zoned E4 Environmental Living under WLEP 2011 at Cottage Point (Boundaries identified within the Planning Proposal)
Outline: Amends WLEP 2000 and WLEP 2011 to:

- Transfer the planning controls for land within the B2 Oxford Falls Valley and C8 Belrose North localities of WLEP 2000 into the best fit zones and land use controls under WLEP 2011
- Rezone the majority of the subject land to E3 Environmental Management under WLEP 2011
- Rezone smaller parcels of land to E4 Environmental Living, RU4 Primary Production Small Lots, SP2 Infrastructure, SP1 Special Activities, R5 Large Lot Residential and R2 Low Density Residential under WLEP 2011
- Include various parcels of land as having additional permitted uses under Schedule 1 of WLEP 2011

Council resolution: 24 February 2015

Planning Proposal - 28 Lockwood Avenue, Belrose
Applies to land: 28 Lockwood Avenue, Belrose

Outline: Amends WLEP 2011 to:

- Permit additional land uses of 'residential flat building' and 'multi dwelling housing' on that part of the land fronting Lockwood Avenue only
- Prohibit the granting of development consent for a residential flat building or multi-dwelling housing on the land unless a minimum Floor Space Ratio of 0:5:1 is provided on the site for commercial premises.

Council resolution: 28 November 2017

Planning Proposal - Freshwater Village Carpark Reclassification

Applies to land: Oliver Street carpark and Lawrence Street carpark, Freshwater

Outline: Amends WLEP 2011 to:

- Amend Schedule 4 Part 1 to include reference to the land
- Amend LZN_010 map to change the zoning from RE1 - Public Recreation to SP2 - Infrastructure
- Amend HOB_010 map to implement a maximum height of building of 3 metres.

Council resolution: 27 November 2018

Additional Information Applying To The Land

Additional information, if any, relating to the land the subject of this certificate:

Nil

General Information

Threatened Species

Many threatened species identified under the *Biodiversity Conservation Act 2016* (NSW) and Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) are found within the former Local Government Area of Warringah (now part of Northern Beaches). Council's Natural Environment unit can be contacted to determine whether any site specific information is available for this property. Records of threatened flora and fauna are also available from the NSW Office of Environment and Heritage's Atlas of NSW Wildlife database: <http://www.bionet.nsw.gov.au>

Potential threatened species could include:

(a) threatened species as described in the final determination of the scientific committee to list endangered and vulnerable species under Schedule 1 of the *Biodiversity Conservation Act 2016*, and/or

(b) one or more of the following threatened ecological communities as described in the final determination of the scientific committee to list the ecological communities under Schedule 2 of the *Biodiversity Conservation Act 2016*:

- Duffys Forest Ecological Community in the Sydney Basin Bioregion
- Swamp Sclerophyll Forest on Coastal Floodplain
- Coastal Saltmarsh of the Sydney Basin Bioregion
- Swamp Oak Floodplain Forest
- Bangalay Sand Forest of the Sydney Basin Bioregion
- Themeda grasslands on Seacliffs and Coastal Headlands
- Sydney Freshwater Wetlands in the Sydney Basin Bioregion
- Coastal Upland Swamp in the Sydney Basin Bioregion
- River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions

Bush fire
Certain development may require further consideration under section 79BA or section 91 of the Environmental Planning and Assessment Act 1979, and section 100B of the Rural Fires Act, 1997 with respect to bush fire matters. Contact NSW Rural Fire Service.

Aboriginal Heritage
Many Aboriginal objects are found within the Local Government Area. It is prudent for the purchaser of land to make an enquiry with the Office of Environment and Heritage as to whether any known Aboriginal objects are located on the subject land or whether the land has been declared as an Aboriginal place under the *National Parks and Wildlife Act 1974* (NSW). The carrying out of works may be prevented on land which is likely to significantly affect an Aboriginal object or Aboriginal place. For information relating to Aboriginal sites and objects across NSW, contact: Aboriginal Heritage Information Management System (AHIMS) on (02) 9585 6345 or email **AHIMS@environment.nsw.gov.au**. Alternatively visit http://www.environment.nsw.gov.au/licences/AboriginalHeritageInformationManagementSystem.htm.

Coastal Erosion
Information available to Council indicates coastal erosion may affect a greater number of properties and may present an increased risk to properties than that shown on published hazard maps of the Warringah coastline. Council's Natural Environment Unit can be contacted for further information.

Ray Brownlee PSM
Chief Executive Officer
21/08/2019

Northern Beaches Council Planning Certificate – Part 2&5

Applicant: Eis & Jk Group
115 Wicks Road
MACQUARIE PARK NSW 2113

Reference: E32596BD (2)
Date: 20/08/2019
Certificate No. ePLC2019/4494

Address of Property: 9999 Pittwater Road BROOKVALE NSW 2100
Description of Property: Part Lot 1 DP 784268

Planning Certificate – Part 2

The following certificate is issued under the provisions of Section 10.7(2) of the *Environmental Planning and Assessment Act 1979* (as amended – formerly Section 149). The information applicable to the land is accurate as at the above date.

1. Relevant planning instruments and Development Control Plans

1.1 The name of each environmental planning instrument that applies to the carrying out of development on the land:

1.1a) Local Environmental Plan

Warringah Local Environmental Plan 2011

1.1b) State Environmental Planning Policies and Regional Environmental Plans

State Environmental Planning Policy 1—Development Standards
State Environmental Planning Policy 19 – Bushland in Urban Areas
State Environmental Planning Policy 21 – Caravan Parks
State Environmental Planning Policy 30 – Intensive Agriculture
State Environmental Planning Policy 33 – Hazardous and Offensive Development
State Environmental Planning Policy 50 – Canal Estate Development
State Environmental Planning Policy 55 – Remediation of Land
State Environmental Planning Policy 62—Sustainable Aquaculture
State Environmental Planning Policy 64 – Advertising and Signage
State Environmental Planning Policy 65 – Design Quality of Residential Apartment Development
State Environmental Planning Policy No 70—Affordable Housing (Revised Schemes)
State Environmental Planning Policy (Affordable Rental Housing) 2009
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004
State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008
State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004
State Environmental Planning Policy (Infrastructure) 2007
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007
State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007
State Environmental Planning Policy (State and Regional Development) 2011
State Environmental Planning Policy (State Significant Precincts) 2005
State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017
Sydney Regional Environmental Plan No 20-Hawkesbury-Nepean River (No 2-1997)
State Environmental Planning Policy No 44-Koala Habitat Protection
Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005
Sydney Regional Environmental Plan No 9-Extractive Industry (No 2-1995)

1.2 Draft Environmental Planning Instruments

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 subject of community consultation or on public exhibition under the Act (unless the Secretary has notified the Council that the making of the proposed instrument has been deferred indefinitely or has not been approved):

1.2 a) Draft State Environmental Planning Policies

Review of State Environmental Planning Policy 44 – Koala Habitat Protection
State Environmental Planning Policy No 64— Advertising and Signage (Amendment No 3)
Draft State Environmental Planning Policy (Environment)
Draft State Environmental Planning Policy (Primary Production and Rural Development)
Draft Amendment to State Environmental Planning Policy (Affordable Rental Housing) 2009

1.2 b) Draft Local Environmental Plans

Planning Proposal - Ralston Avenue (Belrose) (PEX2013/0003)

Applies to land: Lot 1 DP 1139826, Ralston Avenue, Belrose

Outline: Amends WLEP 2000 and WLEP 2011 to:

- Rezone land on Ralston Avenue Belrose from Locality C8 - Belrose North to part R2 Low Density Residential, part RE1 Public Recreation and part E3 Environmental Conservation.
- Introduce subdivision lot size and height of building controls to land proposed to be zoned R2 Low Density Residential.

Council resolution: 25 November 2014

Gateway Determination: 28 January 2015

Planning Proposal - Dee Why Town Centre Planning Controls (PEX2018/0002)

Applies to land: Dee Why Town Centre (boundaries identified within the Planning Proposal)

Outline: Amends WLEP 2011 to:

- Increase maximum permissible building heights
- Introduce floor space ratio controls
- Provide development standards in relation to car parking, building setbacks and building proportion
- Identify additional “Key Sites”
- Implement a delivery mechanism for key infrastructure and public domain improvements

Council resolution: 23 September 2014

Gateway Determination: 1 April 2015 amended 22 September 2016

1.3 Development Control Plans

The name of each development control plan that applies to the carrying out of development on the land:

Warringah Development Control Plan 2011

2. Zoning and land use under relevant Local Environmental Plans

For each environmental planning instrument or proposed instrument referred to in Clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

2.1 Zoning and land use under relevant Local Environmental Plans

2.1 (a), (b), (c) & (d)

The following information identifies the purposes for which development may be carried out with or without development consent and the purposes for which the carrying out of development is prohibited, for all zones (however described) affecting the land to which the relevant Local Environmental Plan applies.

EXTRACT FROM WARRINGAH LOCAL ENVIRONMENTAL PLAN 2011

Zone RE1 Public Recreation

1 Objectives of zone

• To enable land to be used for public open space or recreational purposes.

• To provide a range of recreational settings and activities and compatible land uses.

• To protect and enhance the natural environment for recreational purposes.

• To protect, manage and restore public land that is of ecological, scientific, cultural or aesthetic value.

• To prevent development that could destroy, damage or otherwise have an adverse effect on those values.

2 Permitted without consent

Environmental facilities; Environmental protection works; Roads

3 Permitted with consent

Boat building and repair facilities; Boat sheds; Building identification signs; Business identification signs; Car parks; Centre-based child care facilities; Community facilities; Emergency services facilities; Kiosks; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Respite day care centres; Restaurants or cafes; Water recreation structures

4 Prohibited

Any development not specified in item 2 or 3

Additional permitted uses

Additional permitted uses, if any, for which development is permissible with development consent pursuant to Clause 2.5 and Schedule 1 of the relevant Local Environmental Plan:

Nil

(e) Minimum land dimensions

The *Warringah Local Environmental Plan 2011* contains no development standard that fixes minimum land dimensions for the erection of a dwelling house on the land.

(f) Critical habitat

The land does not include or comprise critical habitat.

(g) Conservation areas

The land is not in a heritage conservation area.

(h) Item of environmental heritage

A heritage item is situated on the land as identified in Schedule 5 of the *Warringah Local Environmental Plan 2011*.

2.2 Draft Local Environmental Plan - if any

For any proposed changes to zoning and land use, see Part 1.2 b)
Please contact Council's Strategic and Place Planning unit with enquiries on 1300 434 434.

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

The *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* does not apply to the land.

3. Complying Development

The extent to which the land is land on which complying development may or may not 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 Development Codes) 2008*.

a) Housing Code

Heritage Item
For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

b) Rural Housing Code

Heritage Item

For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

c) Low Rise Medium Density Code

Complying Development under the Low Rise Medium Density Code may not be carried out on all the land.

Note: Pursuant to clause 3B.63 of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*, all land in Northern Beaches Council is a 'deferred area' meaning that the Low Rise Medium Density Code does not apply until 1 July 2019.

d) Greenfield Housing Code

Complying Development under the Greenfield Housing Code may not be carried out on all of the land.

e) Housing Alterations Code

Heritage Item

For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

f) General Development Code

Heritage Item

For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

g) Commercial and Industrial Alterations Code

Heritage Item

For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

h) Commercial and Industrial (New Buildings and Additions) Code

Heritage Item

For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan*

2011 (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

i) Container Recycling Facilities Code

Heritage Item
For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

j) Subdivisions Code

Heritage Item
For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

k) Demolition Code

Heritage Item
For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

l) Fire Safety Code

Heritage Item
For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

4, 4A (Repealed)

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

The owner of the land (or any previous owner) has not 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).

5. Mine Subsidence

The land has not been proclaimed to be a mine Subsidence (Mine Subsidence) district within the meaning of section 15 of the *Mine Subsidence (Mine Subsidence) Compensation Act, 1961*.

6. Road widening and road realignment

(a) The land is not affected by a road widening or re-alignment proposal under Division 2 of Part 3 of the *Roads Act 1993*.

(b) The land is not affected by a road widening or re-alignment proposal under an environmental planning instrument.

(c) The land is not affected by a road widening or re-alignment proposal under a resolution of Council.

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

(a) Council has adopted a number of policies with regard to various hazards or risks which may restrict development on this land. The identified hazard or risk and the respective Council policies which affect the property, if any, are listed below (other than flooding – see 7A):

Nil

(b) The following information applies to any policy as 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 a planning certificate issued by the Council. The identified hazard or risk and the respective Policy which affect the property, if any, are listed below:

Nil

7A. Flood related development control Information

(1) Development on the land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is not subject to flood related development controls.

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

8. Land reserved for acquisition

Environmental planning instrument referred to in Clause 1 does not make provision in relation to the acquisition of the land by a public authority, as referred to in section 27 of the Act.

9. Contribution plans

The following applies to the land:

Northern Beaches Section 7.12 Contributions Plan 2019

9A. Biodiversity certified land

The land is not biodiversity certified land under Part 8 of the *Biodiversity Conservation Act 2016* (includes land certified under Part 7AA of the repealed *Threatened Species Conservation Act 1995*).

10. Biodiversity Stewardship Sites

The Council has not been notified by the Chief Executive of the Office of Environment and Heritage that the land is a biodiversity stewardship site under a biodiversity stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016* (includes land to which a biobanking agreement under Part 7A of the repealed *Threatened Species Conservation Act 1995* relates).

10A. Native vegetation clearing set asides

Council has not been notified by Local Land Services of the existence of a set aside area under section 60ZC of the *Local Land Services Act 2013*.

11. Bush fire prone land

Bush Fire Prone Land
The land is not bush fire prone land.

Draft Northern Beaches Bush Fire Prone Land Map 2018
The land is not bush fire prone land.

12. Property vegetation plans

The Council has not been notified that the land is land to which a vegetation plan under the *Native Vegetation Act 2003* applies.

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

Council has not been notified of the existence of an order made under the *Trees (Disputes Between Neighbours) Act 2006* to carry out work in relation to a tree on the land.

14. Directions under Part 3A

There is not 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 a project or a stage of a project on the land under Part 4 of the Act does not have effect.

15. Site compatibility certificates and conditions for seniors housing

(a) There is not a current site compatibility certificate (seniors housing), of which the council is aware, in respect of proposed development on the land.

(b) No condition of consent applies to the property that limits the kind of people who may occupy the premises/ development. This refers only to consents granted after 11 October 2007 with conditions made in accordance with clause 18(2) of *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004*.

16. Site compatibility certificates for infrastructure, schools or TAFE establishments

There is not a valid site compatibility certificate (infrastructure) or site compatibility certificate (schools or TAFE establishments), of which the council is aware, in respect of proposed development on the land.

17. Site compatibility certificate and conditions for affordable rental housing

(a) There is not a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land.

(b) There are not 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.

18. Paper subdivision information

There is no current paper subdivision, of which council is aware, in respect of this land according to Part 16C of the *Environmental Planning and Assessment Regulation 2000*.

19. Site verification certificates

There is no current site verification certificate, of which council is aware, in respect of the land according to Part 4AA of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

20. Loose-fill asbestos insulation

The residential dwelling erected on this land has not been identified in the Loose-Fill Asbestos Insulation Register as containing loose-fill asbestos ceiling insulation.

This clause applies to residential premises (within the meaning of Division 1A of part 8 of the Home Building Act 1989) that are listed in the register that is required to be maintained under that Division.

Contact NSW Fair Trading for more information.

21 Affected building notices and building product rectification orders

(1) There is not an affected building notice of which the council is aware that is in force in respect of the land.
(2) There is not a building product rectification order of which the council is aware that is in force in respect of the land and has not been fully complied with, and
(3) There is not a notice of intention to make a building product rectification order of which the council is aware has been

given in respect of the land and is outstanding.

In this clause:

affected building notice has the same meaning as in Part 4 of the *Building Products (Safety) Act 2017*.
building product rectification order has the same meaning as in the *Building Products (Safety) Act 2017*.

Additional matters under the Contaminated Land Management Act 1997

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) the land to which the certificate relates is not significantly contaminated land within the meaning of that Act

(b) the land to which the certificate relates is not subject to a management order within the meaning of that Act

(c) the land to which the certificate relates is not the subject of an approved voluntary management proposal within the meaning of that Act

(d) the land to which the certificate relates is not subject to an ongoing maintenance order within the meaning of that Act

(e) the land to which the certificate relates is not the subject of a site audit statement

If contamination is identified above please contact the Environmental Protection Authority (EPA) for further information.

Planning Certificate – Part 5

ePLC2019/4494

The following is information provided in good faith under the provisions of Section 10.7(5) of the *Environmental Planning and Assessment Act 1979* (as amended – formerly Section 149) and lists relevant matters affecting the land of which Council is aware. The Council shall not incur any liability in respect of any such advice.

Persons relying on this certificate should read the environmental planning instruments referred to in this certificate.

Company Title Subdivision

Clause 4.1 of the *Pittwater Local Environmental Plan 2014*, *Warringah Local Environmental Plan 2011* or *Manly Local Environmental Plan 2013* provides that land may not be subdivided except with the consent of the Council. This includes subdivision by way of company title schemes. Persons considering purchasing property in the Northern Beaches local government area the

subject of a company title scheme are advised to check that the land has been subdivided with the consent of the Council.

District Planning

Under the Greater Sydney Regional Plan – A Metropolis of Three Cities 2018, the Greater Sydney Commission sets a planning framework for a metropolis of three cities across Greater Sydney which reach across five Districts. Northern Beaches is located within the 'Eastern Harbour City' area and is in the North District which forms a large part of the Eastern Harbour City. The North District Plan sets out planning priorities and actions for the growth of the North District, including Northern Beaches. Northern Beaches Council is preparing a Local Strategic Planning Statement which will give effect to the District Plan based on local characteristics and opportunities and Council's own priorities in the community.

Council Resolution To Amend Environmental Planning Instrument

The following instrument or resolution of Council proposes to vary the provisions of an environmental planning instrument, other than as referred to in the Planning Certificate – Part 2:

Planning Proposal - Response to Low Rise Medium Density Code
Applies to land: Certain land in the Pittwater Local Environmental Plan 2014 (PLEP 2014) and Manly Local Environmental Plan 2013 (MLEP 2013)
Outline: Seeks to amend the PLEP 2014 and MLEP 2013 in response to issues arising from the future implementation of the NSW Governments' SEPP (Exempt and Complying Development) Amendment (Low Rise Medium Density Code). The intent of the Planning Proposal is to prohibit:

- manor houses and multi-dwelling housing (including terraces) in zone R2 Low Density Residential zone under the Manly LEP 2013
- dual occupancy in zone R2 Low Density Residential zone under the Manly LEP 2013 and Pittwater LEP 2014
- multi-dwelling housing and dual occupancies in the R3 Zone in the Warriewood Valley under Pittwater LEP 2014

Council resolution: 26 June 2018

Planning Proposal - rezone deferred land within the Oxford Falls Valley & Belrose North area
Applies to land: Land within the B2 Oxford Falls Valley and C8 Belrose North localities of WLEP 2000 and land zoned E4 Environmental Living under WLEP 2011 at Cottage Point (Boundaries identified within the Planning Proposal)
Outline: Amends WLEP 2000 and WLEP 2011 to:

- Transfer the planning controls for land within the B2 Oxford Falls Valley and C8 Belrose North localities of WLEP 2000 into the best fit zones and land use controls under WLEP 2011
- Rezone the majority of the subject land to E3 Environmental Management under WLEP 2011
- Rezone smaller parcels of land to E4 Environmental Living, RU4 Primary Production Small Lots, SP2 Infrastructure, SP1 Special Activities, R5 Large Lot Residential and R2 Low Density Residential under WLEP 2011
- Include various parcels of land as having additional permitted uses under Schedule 1 of WLEP 2011

Council resolution: 24 February 2015

Planning Proposal - 28 Lockwood Avenue, Belrose
Applies to land: 28 Lockwood Avenue, Belrose

Outline: Amends WLEP 2011 to:

- Permit additional land uses of 'residential flat building' and 'multi dwelling housing' on that part of the land fronting Lockwood Avenue only
- Prohibit the granting of development consent for a residential flat building or multi-dwelling housing on the land unless a minimum Floor Space Ratio of 0:5:1 is provided on the site for commercial premises.

Council resolution: 28 November 2017

Planning Proposal - Freshwater Village Carpark Reclassification

Applies to land: Oliver Street carpark and Lawrence Street carpark, Freshwater

Outline: Amends WLEP 2011 to:

- Amend Schedule 4 Part 1 to include reference to the land
- Amend LZN_010 map to change the zoning from RE1 - Public Recreation to SP2 - Infrastructure
- Amend HOB_010 map to implement a maximum height of building of 3 metres.

Council resolution: 27 November 2018

Additional Information Applying To The Land

Additional information, if any, relating to the land the subject of this certificate:

Nil

General Information

Threatened Species

Many threatened species identified under the *Biodiversity Conservation Act 2016* (NSW) and Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) are found within the former Local Government Area of Warringah (now part of Northern Beaches). Council's Natural Environment unit can be contacted to determine whether any site specific information is available for this property. Records of threatened flora and fauna are also available from the NSW Office of Environment and Heritage's Atlas of NSW Wildlife database: <http://www.bionet.nsw.gov.au>

Potential threatened species could include:

(a) threatened species as described in the final determination of the scientific committee to list endangered and vulnerable species under Schedule 1 of the *Biodiversity Conservation Act 2016*, and/or

(b) one or more of the following threatened ecological communities as described in the final determination of the scientific committee to list the ecological communities under Schedule 2 of the *Biodiversity Conservation Act 2016*:

- Duffys Forest Ecological Community in the Sydney Basin Bioregion
- Swamp Sclerophyll Forest on Coastal Floodplain
- Coastal Saltmarsh of the Sydney Basin Bioregion
- Swamp Oak Floodplain Forest
- Bangalay Sand Forest of the Sydney Basin Bioregion
- Themeda grasslands on Seacliffs and Coastal Headlands
- Sydney Freshwater Wetlands in the Sydney Basin Bioregion
- Coastal Upland Swamp in the Sydney Basin Bioregion
- River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions

Bush fire
Certain development may require further consideration under section 79BA or section 91 of the Environmental Planning and Assessment Act 1979, and section 100B of the Rural Fires Act, 1997 with respect to bush fire matters. Contact NSW Rural Fire Service.

Aboriginal Heritage
Many Aboriginal objects are found within the Local Government Area. It is prudent for the purchaser of land to make an enquiry with the Office of Environment and Heritage as to whether any known Aboriginal objects are located on the subject land or whether the land has been declared as an Aboriginal place under the *National Parks and Wildlife Act 1974* (NSW). The carrying out of works may be prevented on land which is likely to significantly affect an Aboriginal object or Aboriginal place. For information relating to Aboriginal sites and objects across NSW, contact: Aboriginal Heritage Information Management System (AHIMS) on (02) 9585 6345 or email **AHIMS@environment.nsw.gov.au**. Alternatively visit http://www.environment.nsw.gov.au/licences/AboriginalHeritageInformationManagementSystem.htm.

Coastal Erosion
Information available to Council indicates coastal erosion may affect a greater number of properties and may present an increased risk to properties than that shown on published hazard maps of the Warringah coastline. Council's Natural Environment Unit can be contacted for further information.

Ray Brownlee PSM
Chief Executive Officer
20/08/2019

Northern Beaches Council Planning Certificate – Part 2&5

Applicant: Eis & Jk Group
115 Wicks Road
MACQUARIE PARK NSW 2113

Reference: E32596BD (3)
Date: 20/08/2019
Certificate No. ePLC2019/4495

Address of Property: 9999 Pittwater Road BROOKVALE NSW 2100
Description of Property: Lot B DP 966128

Planning Certificate – Part 2

The following certificate is issued under the provisions of Section 10.7(2) of the *Environmental Planning and Assessment Act 1979* (as amended – formerly Section 149). The information applicable to the land is accurate as at the above date.

1. Relevant planning instruments and Development Control Plans

1.1 The name of each environmental planning instrument that applies to the carrying out of development on the land:

1.1a) Local Environmental Plan

Warringah Local Environmental Plan 2011

1.1b) State Environmental Planning Policies and Regional Environmental Plans

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State Environmental Planning Policy 55 – Remediation of Land
State Environmental Planning Policy 62—Sustainable Aquaculture
State Environmental Planning Policy 64 – Advertising and Signage
State Environmental Planning Policy 65 – Design Quality of Residential Apartment Development
State Environmental Planning Policy No 70—Affordable Housing (Revised Schemes)
State Environmental Planning Policy (Affordable Rental Housing) 2009
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State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008
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State Environmental Planning Policy (State Significant Precincts) 2005
State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017
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State Environmental Planning Policy No 44-Koala Habitat Protection
Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005
Sydney Regional Environmental Plan No 9-Extractive Industry (No 2-1995)

1.2 Draft Environmental Planning Instruments

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 subject of community consultation or on public exhibition under the Act (unless the Secretary has notified the Council that the making of the proposed instrument has been deferred indefinitely or has not been approved):

1.2 a) Draft State Environmental Planning Policies

Review of State Environmental Planning Policy 44 – Koala Habitat Protection
State Environmental Planning Policy No 64— Advertising and Signage (Amendment No 3)
Draft State Environmental Planning Policy (Environment)
Draft State Environmental Planning Policy (Primary Production and Rural Development)
Draft Amendment to State Environmental Planning Policy (Affordable Rental Housing) 2009

1.2 b) Draft Local Environmental Plans

Planning Proposal - Ralston Avenue (Belrose) (PEX2013/0003)

Applies to land: Lot 1 DP 1139826, Ralston Avenue, Belrose

Outline: Amends WLEP 2000 and WLEP 2011 to:

- Rezone land on Ralston Avenue Belrose from Locality C8 - Belrose North to part R2 Low Density Residential, part RE1 Public Recreation and part E3 Environmental Conservation.
- Introduce subdivision lot size and height of building controls to land proposed to be zoned R2 Low Density Residential.

Council resolution: 25 November 2014

Gateway Determination: 28 January 2015

Planning Proposal - Dee Why Town Centre Planning Controls (PEX2018/0002)

Applies to land: Dee Why Town Centre (boundaries identified within the Planning Proposal)

Outline: Amends WLEP 2011 to:

- Increase maximum permissible building heights
- Introduce floor space ratio controls
- Provide development standards in relation to car parking, building setbacks and building proportion
- Identify additional “Key Sites”
- Implement a delivery mechanism for key infrastructure and public domain improvements

Council resolution: 23 September 2014

Gateway Determination: 1 April 2015 amended 22 September 2016

1.3 Development Control Plans

The name of each development control plan that applies to the carrying out of development on the land:

Warringah Development Control Plan 2011

2. Zoning and land use under relevant Local Environmental Plans

For each environmental planning instrument or proposed instrument referred to in Clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

2.1 Zoning and land use under relevant Local Environmental Plans

2.1 (a), (b), (c) & (d)

The following information identifies the purposes for which development may be carried out with or without development consent and the purposes for which the carrying out of development is prohibited, for all zones (however described) affecting the land to which the relevant Local Environmental Plan applies.

EXTRACT FROM WARRINGAH LOCAL ENVIRONMENTAL PLAN 2011

Zone RE1 Public Recreation

1 Objectives of zone

• To enable land to be used for public open space or recreational purposes.

• To provide a range of recreational settings and activities and compatible land uses.

• To protect and enhance the natural environment for recreational purposes.

• To protect, manage and restore public land that is of ecological, scientific, cultural or aesthetic value.

• To prevent development that could destroy, damage or otherwise have an adverse effect on those values.

2 Permitted without consent

Environmental facilities; Environmental protection works; Roads

3 Permitted with consent

Boat building and repair facilities; Boat sheds; Building identification signs; Business identification signs; Car parks; Centre-based child care facilities; Community facilities; Emergency services facilities; Kiosks; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Respite day care centres; Restaurants or cafes; Water recreation structures

4 Prohibited

Any development not specified in item 2 or 3

Additional permitted uses

Additional permitted uses, if any, for which development is permissible with development consent pursuant to Clause 2.5 and Schedule 1 of the relevant Local Environmental Plan:

Nil

(e) Minimum land dimensions

The *Warringah Local Environmental Plan 2011* contains no development standard that fixes minimum land dimensions for the erection of a dwelling house on the land.

(f) Critical habitat

The land does not include or comprise critical habitat.

(g) Conservation areas

The land is not in a heritage conservation area.

(h) Item of environmental heritage

A heritage item is situated on the land as identified in Schedule 5 of the *Warringah Local Environmental Plan 2011*.

2.2 Draft Local Environmental Plan - if any

For any proposed changes to zoning and land use, see Part 1.2 b)
Please contact Council's Strategic and Place Planning unit with enquiries on 1300 434 434.

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

The *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* does not apply to the land.

3. Complying Development

The extent to which the land is land on which complying development may or may not 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 Development Codes) 2008*.

a) Housing Code

Heritage Item
For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

b) Rural Housing Code

Heritage Item

For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

c) Low Rise Medium Density Code

Complying Development under the Low Rise Medium Density Code may not be carried out on all the land.

Note: Pursuant to clause 3B.63 of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*, all land in Northern Beaches Council is a 'deferred area' meaning that the Low Rise Medium Density Code does not apply until 1 July 2019.

d) Greenfield Housing Code

Complying Development under the Greenfield Housing Code may not be carried out on all of the land.

e) Housing Alterations Code

Heritage Item

For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

f) General Development Code

Heritage Item

For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

g) Commercial and Industrial Alterations Code

Heritage Item

For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

h) Commercial and Industrial (New Buildings and Additions) Code

Heritage Item

For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan*

2011 (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

i) Container Recycling Facilities Code

Heritage Item
For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

j) Subdivisions Code

Heritage Item
For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

k) Demolition Code

Heritage Item
For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

l) Fire Safety Code

Heritage Item
For the purposes of clause 1.17A (1) (d) (iii) complying development may not be carried out on that part of the land that comprises the heritage item listed in *Warringah Local Environmental Plan 2011* (WLEP2011). Where a heritage item listed in WLEP2011 does not comprise the whole of the relevant land, the restriction under (1) (d) applies only to that part of the land that is described in WLEP2011 Schedule 5 Environmental Heritage.

4, 4A (Repealed)

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

The owner of the land (or any previous owner) has not 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).

5. Mine Subsidence

The land has not been proclaimed to be a mine Subsidence (Mine Subsidence) district within the meaning of section 15 of the *Mine Subsidence (Mine Subsidence) Compensation Act, 1961*.

6. Road widening and road realignment

(a) The land is not affected by a road widening or re-alignment proposal under Division 2 of Part 3 of the *Roads Act 1993*.

(b) The land is not affected by a road widening or re-alignment proposal under an environmental planning instrument.

(c) The land is not affected by a road widening or re-alignment proposal under a resolution of Council.

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

(a) Council has adopted a number of policies with regard to various hazards or risks which may restrict development on this land. The identified hazard or risk and the respective Council policies which affect the property, if any, are listed below (other than flooding – see 7A):

Nil

(b) The following information applies to any policy as 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 a planning certificate issued by the Council. The identified hazard or risk and the respective Policy which affect the property, if any, are listed below:

Nil

7A. Flood related development control Information

(1) Development on the land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is not subject to flood related development controls.

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

8. Land reserved for acquisition

Environmental planning instrument referred to in Clause 1 does not make provision in relation to the acquisition of the land by a public authority, as referred to in section 27 of the Act.

9. Contribution plans

The following applies to the land:

Northern Beaches Section 7.12 Contributions Plan 2019

9A. Biodiversity certified land

The land is not biodiversity certified land under Part 8 of the *Biodiversity Conservation Act 2016* (includes land certified under Part 7AA of the repealed *Threatened Species Conservation Act 1995*).

10. Biodiversity Stewardship Sites

The Council has not been notified by the Chief Executive of the Office of Environment and Heritage that the land is a biodiversity stewardship site under a biodiversity stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016* (includes land to which a biobanking agreement under Part 7A of the repealed *Threatened Species Conservation Act 1995* relates).

10A. Native vegetation clearing set asides

Council has not been notified by Local Land Services of the existence of a set aside area under section 60ZC of the *Local Land Services Act 2013*.

11. Bush fire prone land

Bush Fire Prone Land
The land is not bush fire prone land.

Draft Northern Beaches Bush Fire Prone Land Map 2018
The land is not bush fire prone land.

12. Property vegetation plans

The Council has not been notified that the land is land to which a vegetation plan under the *Native Vegetation Act 2003* applies.

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

Council has not been notified of the existence of an order made under the *Trees (Disputes Between Neighbours) Act 2006* to carry out work in relation to a tree on the land.

14. Directions under Part 3A

There is not 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 a project or a stage of a project on the land under Part 4 of the Act does not have effect.

15. Site compatibility certificates and conditions for seniors housing

(a) There is not a current site compatibility certificate (seniors housing), of which the council is aware, in respect of proposed development on the land.

(b) No condition of consent applies to the property that limits the kind of people who may occupy the premises/ development. This refers only to consents granted after 11 October 2007 with conditions made in accordance with clause 18(2) of *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004*.

16. Site compatibility certificates for infrastructure, schools or TAFE establishments

There is not a valid site compatibility certificate (infrastructure) or site compatibility certificate (schools or TAFE establishments), of which the council is aware, in respect of proposed development on the land.

17. Site compatibility certificate and conditions for affordable rental housing

(a) There is not a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land.

(b) There are not 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.

18. Paper subdivision information

There is no current paper subdivision, of which council is aware, in respect of this land according to Part 16C of the *Environmental Planning and Assessment Regulation 2000*.

19. Site verification certificates

There is no current site verification certificate, of which council is aware, in respect of the land according to Part 4AA of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

20. Loose-fill asbestos insulation

The residential dwelling erected on this land has not been identified in the Loose-Fill Asbestos Insulation Register as containing loose-fill asbestos ceiling insulation.

This clause applies to residential premises (within the meaning of Division 1A of part 8 of the Home Building Act 1989) that are listed in the register that is required to be maintained under that Division.

Contact NSW Fair Trading for more information.

21 Affected building notices and building product rectification orders

(1) There is not an affected building notice of which the council is aware that is in force in respect of the land.
(2) There is not a building product rectification order of which the council is aware that is in force in respect of the land and has not been fully complied with, and
(3) There is not a notice of intention to make a building product rectification order of which the council is aware has been

given in respect of the land and is outstanding.

In this clause:

affected building notice has the same meaning as in Part 4 of the *Building Products (Safety) Act 2017*.
building product rectification order has the same meaning as in the *Building Products (Safety) Act 2017*.

Additional matters under the Contaminated Land Management Act 1997

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) the land to which the certificate relates is not significantly contaminated land within the meaning of that Act

(b) the land to which the certificate relates is not subject to a management order within the meaning of that Act

(c) the land to which the certificate relates is not the subject of an approved voluntary management proposal within the meaning of that Act

(d) the land to which the certificate relates is not subject to an ongoing maintenance order within the meaning of that Act

(e) the land to which the certificate relates is not the subject of a site audit statement

If contamination is identified above please contact the Environmental Protection Authority (EPA) for further information.

Planning Certificate – Part 5

ePLC2019/4495

The following is information provided in good faith under the provisions of Section 10.7(5) of the *Environmental Planning and Assessment Act 1979* (as amended – formerly Section 149) and lists relevant matters affecting the land of which Council is aware. The Council shall not incur any liability in respect of any such advice.

Persons relying on this certificate should read the environmental planning instruments referred to in this certificate.

Company Title Subdivision

Clause 4.1 of the *Pittwater Local Environmental Plan 2014*, *Warringah Local Environmental Plan 2011* or *Manly Local Environmental Plan 2013* provides that land may not be subdivided except with the consent of the Council. This includes subdivision by way of company title schemes. Persons considering purchasing property in the Northern Beaches local government area the

subject of a company title scheme are advised to check that the land has been subdivided with the consent of the Council.

District Planning

Under the Greater Sydney Regional Plan – A Metropolis of Three Cities 2018, the Greater Sydney Commission sets a planning framework for a metropolis of three cities across Greater Sydney which reach across five Districts. Northern Beaches is located within the 'Eastern Harbour City' area and is in the North District which forms a large part of the Eastern Harbour City. The North District Plan sets out planning priorities and actions for the growth of the North District, including Northern Beaches. Northern Beaches Council is preparing a Local Strategic Planning Statement which will give effect to the District Plan based on local characteristics and opportunities and Council's own priorities in the community.

Council Resolution To Amend Environmental Planning Instrument

The following instrument or resolution of Council proposes to vary the provisions of an environmental planning instrument, other than as referred to in the Planning Certificate – Part 2:

Planning Proposal - Response to Low Rise Medium Density Code
Applies to land: Certain land in the Pittwater Local Environmental Plan 2014 (PLEP 2014) and Manly Local Environmental Plan 2013 (MLEP 2013)
Outline: Seeks to amend the PLEP 2014 and MLEP 2013 in response to issues arising from the future implementation of the NSW Governments' SEPP (Exempt and Complying Development) Amendment (Low Rise Medium Density Code). The intent of the Planning Proposal is to prohibit:

- manor houses and multi-dwelling housing (including terraces) in zone R2 Low Density Residential zone under the Manly LEP 2013
- dual occupancy in zone R2 Low Density Residential zone under the Manly LEP 2013 and Pittwater LEP 2014
- multi-dwelling housing and dual occupancies in the R3 Zone in the Warriewood Valley under Pittwater LEP 2014

Council resolution: 26 June 2018

Planning Proposal - rezone deferred land within the Oxford Falls Valley & Belrose North area
Applies to land: Land within the B2 Oxford Falls Valley and C8 Belrose North localities of WLEP 2000 and land zoned E4 Environmental Living under WLEP 2011 at Cottage Point (Boundaries identified within the Planning Proposal)
Outline: Amends WLEP 2000 and WLEP 2011 to:

- Transfer the planning controls for land within the B2 Oxford Falls Valley and C8 Belrose North localities of WLEP 2000 into the best fit zones and land use controls under WLEP 2011
- Rezone the majority of the subject land to E3 Environmental Management under WLEP 2011
- Rezone smaller parcels of land to E4 Environmental Living, RU4 Primary Production Small Lots, SP2 Infrastructure, SP1 Special Activities, R5 Large Lot Residential and R2 Low Density Residential under WLEP 2011
- Include various parcels of land as having additional permitted uses under Schedule 1 of WLEP 2011

Council resolution: 24 February 2015

Planning Proposal - 28 Lockwood Avenue, Belrose
Applies to land: 28 Lockwood Avenue, Belrose

Outline: Amends WLEP 2011 to:

- Permit additional land uses of 'residential flat building' and 'multi dwelling housing' on that part of the land fronting Lockwood Avenue only
- Prohibit the granting of development consent for a residential flat building or multi-dwelling housing on the land unless a minimum Floor Space Ratio of 0:5:1 is provided on the site for commercial premises.

Council resolution: 28 November 2017

Planning Proposal - Freshwater Village Carpark Reclassification

Applies to land: Oliver Street carpark and Lawrence Street carpark, Freshwater

Outline: Amends WLEP 2011 to:

- Amend Schedule 4 Part 1 to include reference to the land
- Amend LZN_010 map to change the zoning from RE1 - Public Recreation to SP2 - Infrastructure
- Amend HOB_010 map to implement a maximum height of building of 3 metres.

Council resolution: 27 November 2018

Additional Information Applying To The Land

Additional information, if any, relating to the land the subject of this certificate:

Nil

General Information

Threatened Species

Many threatened species identified under the *Biodiversity Conservation Act 2016* (NSW) and Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) are found within the former Local Government Area of Warringah (now part of Northern Beaches). Council's Natural Environment unit can be contacted to determine whether any site specific information is available for this property. Records of threatened flora and fauna are also available from the NSW Office of Environment and Heritage's Atlas of NSW Wildlife database: <http://www.bionet.nsw.gov.au>

Potential threatened species could include:

(a) threatened species as described in the final determination of the scientific committee to list endangered and vulnerable species under Schedule 1 of the *Biodiversity Conservation Act 2016*, and/or

(b) one or more of the following threatened ecological communities as described in the final determination of the scientific committee to list the ecological communities under Schedule 2 of the *Biodiversity Conservation Act 2016*:

- Duffys Forest Ecological Community in the Sydney Basin Bioregion
- Swamp Sclerophyll Forest on Coastal Floodplain
- Coastal Saltmarsh of the Sydney Basin Bioregion
- Swamp Oak Floodplain Forest
- Bangalay Sand Forest of the Sydney Basin Bioregion
- Themeda grasslands on Seacliffs and Coastal Headlands
- Sydney Freshwater Wetlands in the Sydney Basin Bioregion
- Coastal Upland Swamp in the Sydney Basin Bioregion
- River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions

Bush fire
Certain development may require further consideration under section 79BA or section 91 of the Environmental Planning and Assessment Act 1979, and section 100B of the Rural Fires Act, 1997 with respect to bush fire matters. Contact NSW Rural Fire Service.

Aboriginal Heritage
Many Aboriginal objects are found within the Local Government Area. It is prudent for the purchaser of land to make an enquiry with the Office of Environment and Heritage as to whether any known Aboriginal objects are located on the subject land or whether the land has been declared as an Aboriginal place under the *National Parks and Wildlife Act 1974* (NSW). The carrying out of works may be prevented on land which is likely to significantly affect an Aboriginal object or Aboriginal place. For information relating to Aboriginal sites and objects across NSW, contact: Aboriginal Heritage Information Management System (AHIMS) on (02) 9585 6345 or email **AHIMS@environment.nsw.gov.au**. Alternatively visit http://www.environment.nsw.gov.au/licences/AboriginalHeritageInformationManagementSystem.htm.

Coastal Erosion
Information available to Council indicates coastal erosion may affect a greater number of properties and may present an increased risk to properties than that shown on published hazard maps of the Warringah coastline. Council's Natural Environment Unit can be contacted for further information.

Ray Brownlee PSM
Chief Executive Officer
20/08/2019

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: D19/191781

20 September 2019

Mr Mitch Delaney
JK Environments
PO Box 976
NORTH RYDE BC NSW 1670

Dear Mr Delaney

RE SITE: Pittwater Road, Brookvale NSW

I refer to your site search request received by SafeWork NSW on 19 September 2019 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 D: Borehole Logs

JKEnvironments

ENVIRONMENTAL LOG

Log No. 201 1/1

Environmental logs are not to be used for geotechnical purposes

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 28.68m

Date: 22/8/19 **Datum:** AHD

Plant Type: JK305 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION							0			CONCRETE: 120mm.t				
									-	FILL: Gravelly sand, fine to coarse grained, grey, fine to medium grained igneous sub angular, trace of ironstone gravel.	M			2.2kg BUCKET NO FCF 4.6kg BUCKET NO FCF
						N = 19 6,10,9			SP	FILL: Clayey sand, fine to medium grained, light brown, trace of ironstone gravel.	D			ALLUVIAL
							1			Silty SAND: fine to coarse grained, light grey.				
										END OF BOREHOLE AT 1.5m				
							2							
							3							
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOG

Log No. 202 1/1

Environmental logs are not to be used for geotechnical purposes

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 26.36m

Date: 23/8/19 **Datum:** AHD

Plant Type: JK205 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION			■		■	N = 8 3,4,4	0		-	CONCRETE: 120mm.t				
										FILL: Silty sand, fine to coarse grained, brown, trace of clay fines.	M			2.0kg BUCKET NO FCF
									SC	Clayey SAND: fine to coarse grained, orange brown.	M			ALLUVIAL
							1			END OF BOREHOLE AT 0.95m				
							2							
							3							
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOG

Log No. 203 1/1

Environmental logs are not to be used for geotechnical purposes

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 26.46m

Date: 23/8/19 **Datum:** AHD

Plant Type: JK205 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			CONCRETE: 120mm.t				
									-	FILL: Silty sand, fine to coarse grained, brown, trace of igneous gravel.	M			3.4kg BUCKET NO FCF
	■		■								w>PL			1.5kg BUCKET NO FCF
	■		■			N = 5 3,2,3			CL-CI	FILL: Silty clay, low to medium plasticity, red brown, trace of ironstone gravel.	w<PL			ALLUVIAL
							1			Sandy CLAY: low to medium plasticity, brown, fine to coarse grained sand.				
										END OF BOREHOLE AT 1.0m				
							2							
							3							
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOG

Log No. 204 1/1

Environmental logs are not to be used for geotechnical purposes

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 26.34m

Date: 23/8/19 **Datum:** AHD

Plant Type: JK205 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION						N = 11 0,1,10	0		-	CONCRETE: 120mm.t FILL: Silty sand, fine to medium grained, light brown.	M w>PL			NOT ENOUGH SAMPLE FOR BUCKET 5.3kg BUCKET NO FCF
										FILL: Silty clay, low to medium plasticity, red brown, trace of ironstone and sandstone gravel and ash.				
							1		CL-CI	FILL: Sandy clay. low to medium plasticity, dark grey, fine to medium grained sand.	w<PL			NOT ENOUGH SAMPLE FOR BUCKET
										Sandy CLAY: low to medium plasticity, orange brown.				ALLUVIAL
										END OF BOREHOLE AT 1.5m				
							2							
							3							
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOG

Log No. 205 1/1

Environmental logs are not to be used for geotechnical purposes

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 26.23m

Date: 23/8/19 **Datum:** AHD

Plant Type: JK205 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION							0			CONCRETE: 120mm.t				
									-	FILL: Silty sand, fine to medium grained, light brown.	M w>PL			NOT ENOUGH SAMPLE FOR BUCKET 9.9kg BUCKET NO FCF
						N = 4 2,2,2				FILL: Silty clay, low to medium plasticity, red brown, trace of ironstone, sandstone and igneous gravel and ash.				3.2kg BUCKET NO FCF
							1			FILL: Sandy clay, low to medium plasticity, dark grey, fine to medium grained sand, trace of ironstone gravel.				
									CL-CI		w<PL			ALLUVIAL
						N = 6 3,3,3				Sandy CLAY: low to medium plasticity, brown, fine to coarse grained sand.				
							2			as above, but orange brown.				
										END OF BOREHOLE AT 1.95m				
							3							
							4							
							5							
							6							
							7							

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Log No. 206 **1/2**

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 26.09m

Date: 23/8/19 **Datum:** AHD

Plant Type: JK205 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
							0			CONCRETE: 90mm.t				
									-	FILL: Silty sand, fine to medium grained, light brown.	M w≈PL			NOT ENOUGH SAMPLE FOR BUCKET 9.4kg BUCKET NO FCF
						N = 3 2,1,2				FILL: Silty clay, medium plasticity, red brown and grey, trace of ironstone, sandstone and igneous gravel, slag and ash.				3.5kg BUCKET NO FCF
							1		SC	Clayey SAND: fine to coarse grained, orange brown.	D			ALLUVIAL
						N = 14 5,5,9	2							
						N = 15 7,7,8	3		SC/CI	Clayey SAND to Sandy CLAY: fine to coarse grained/medium plasticity, grey mottled red brown.	M/w>PL			
						N = 14 6,7,7	4		SC	Clayey SAND: fine to coarse grained, grey mottled orange brown and brown, medium plasticity fines.	M			
▼ ON 4/9/19							5				W			
						N = 13 4,6,7	6							
							7							

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Log No. 206 **2/2**

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 26.09m

Date: 23/8/19 **Datum:** AHD

Plant Type: JK205 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
ON COMPLE-TION ▽						N = 8 6,4,4	8		SC	Clayey SAND: fine to coarse grained, grey mottled orange brown and brown, medium plasticity fines.	W			
										Clayey SAND: fine to coarse grained, orange brown.				
							9			END OF BOREHOLE AT 9.0m				Groundwater monitoring well installed to 9.0m. Class 18 machine slotted 50mm dia. PVC standpipe 9.0m to 3.0m. Casing 3.0m to 0.0m. 2mm sand filter pack 9.0m to 2. 0m. Bentonite seal 2.0m to 1. 0m. Backfilled with sand (and/or cuttings) to the surface. Completed with concreted gatic cover.
							10							
							11							
							12							
							13							
							14							

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Log No. 207 **1/1**

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 25.99m

Date: 23/8/19 **Datum:** AHD

Plant Type: JK205 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION							0			CONCRETE: 120mm.t				
									-	FILL: Silty sand, fine to medium grained, light brown, trace of igneous gravel.	M w>PL			3.0kg BUCKET NO FCF 10.2kg BUCKET NO FCF
						N = 6 2,2,8	1			FILL: Silty clay, low to medium plasticity, red brown and grey, trace of ironstone, sandstone and igneous gravel and ash.				
						N = 12 3,5,7			CL-CI	Sandy CLAY: low to medium plasticity, brown.	M			ALLUVIAL
							2			END OF BOREHOLE AT 1.95m				
							3							
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOG

Log No. 208 1/1

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 25.79m

Date: 23/8/19 **Datum:** AHD

Plant Type: JK205 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION							0			CONCRETE: 90mm.t				
						N = 5 4,2,3			-	FILL: Silty sand, fine to coarse grained, light brown, trace of igneous gravel.	M			3.0kg BUCKET NO FCF 11.2kg BUCKET NO FCF
							1			FILL: Silty clayey sand, fine to coarse sand, grey, trace of sandstone and ironstone gravel and brick fragments.				
						N = 5 2,3,2			CI-CH	Sandy CLAY: medium to high plasticity, orange brown, trace of ironstone gravel.	w>PL			ALLUVIAL
							2							
										END OF BOREHOLE AT 2.5m				
							3							
							4							
							5							
							6							
							7							

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Log No. 209 1/1

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** HAND TOOLS **R.L. Surface:** ≈ 27.53m

Date: 23/8/19 **Datum:** AHD

Plant Type: N/A **Logged/Checked by:** S.W./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		■		0			FILL: Silty clay, low to medium plasticity, dark brown, trace of igneous gravel, glass and root fibres.	w<PL			GRASS COVER
	■		■							FILL: Silty clay, low to medium plasticity, red brown, with ironstone gravel, trace of ash.	M			10.4kg BUCKET NO FCF NOT ENOUGH SAMPLE FOR BUCKET
							1			FILL: Clayey sand, fine to coarse grained, brown, trace of igneous gravel and ash.				NOT ENOUGH SAMPLE FOR BUCKET
										FILL: Silty clayey sand, fine to coarse grained, dark brown, trace of ironstone gravel and ash.				NOT ENOUGH SAMPLE FOR BUCKET
										END OF BOREHOLE AT 0.8m				HAND TOOL REFUSAL
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. 210 **1/2**

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 28.67m

Date: 21/8/19 **Datum:** AHD

Plant Type: JK308 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
			■		■		0			FILL: Sandy silt, low to medium plasticity, brown, with organic material.	w>PL			MULCH COVER
						N = 11 4,5,6				FILL: Silty sandy clay, low to medium plasticity, light brown, trace of ironstone gravel.				5.9kg BUCKET NO FCF 1.8kg BUCKET NO FCF
							1		SM	Silty SAND: fine to coarse grained, light grey.	D			ALLUVIAL
			■			N = 8 3,4,4			SC	Silty clayey SAND: fine to coarse grained, brown.	D			
							2			as above, but light brown.	M			
						N = 5 3,3,2	3							
							4							
						N = 9 5,5,4								
							5							
									CI/SC	Sandy CLAY TO Clayey SAND: medium plasticity, fine to coarse grained, light brown.	w≈PL/M			
						N = 12 5,7,5	6							
							7							

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Log No. 210 **2/2**

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 28.67m

Date: 21/8/19 **Datum:** AHD

Plant Type: JK308 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
									CI/SC	Sandy CLAY TO Clayey SAND: medium plasticity, fine to coarse grained, light brown.	w≈PL/M			
						N = 8 6,4,4			SC	Clayey SAND: fine to coarse grained, orange brown and grey, trace of ironstone gravel.	M			
▼ ON 4/9/19							8							
▶										as above, but red brown and grey.	W			
							9							
▼ ON COMPLE-TION							10							
							11							
							12			END OF BOREHOLE AT 12.0m				Groundwater monitoring well installed to 10.9m. Class 18 machine slotted 50mm dia. PVC standpipe 10.9m to 4.9m. Casing 4.9m to 0.0m. 2mm sand filter pack 10.9m to 4.5m. Bentonite seal 4.5m to 4.0m. Backfilled with sand to the surface. Completed with concreted gatic cover.
							13							
							14							

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Log No. 211 1/1

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 28.56m

Date: 22/8/19 **Datum:** AHD

Plant Type: JK305 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION							0			FILL: Silty sand, fine to medium grained, brown, trace of ironstone gravel and root fibres.	M			GRASS COVER 11.3kg BUCKET NO FCF
						N = 9 6,4,5				FILL: Clayey sand, fine to coarse grained, light brown, trace of ironstone gravel and ash.				5.9kg BUCKET AMF4
							1		SM	Silty SAND: fine to coarse grained, light grey.	D			ALLUVIAL
						N = 13 6,6,7								
							2			END OF BORHEOLE AT 1.95m				
							3							
							4							
							5							
							6							
							7							

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Log No. 212 1/1

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 28.69m

Date: 21/8/19 **Datum:** AHD

Plant Type: JK308 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION			■		■		0			FILL: Silty sand, fine to coarse grained, brown, trace igneous gravel.	M			GRASS COVER NO FCF 0.1m 11.9kg BUCKET
			■		■	N = 7 4,3,4				FILL: Silty clay, low to medium plasticity, brown, with ironstone gravel, trace of slag and ash.	w>PL			NO FCF 9.8kg BUCKET NO FCF
			■		■		1			FILL: Silty sand, fine to medium grained, brown, trace of ironstone gravel, slag and ash.	M			1.8kg BUCKET NO FCF
										as above, but , dark grey.	M			NOT ENOUGH SAMPLE FOR BUCKET
						N = 9 6,5,4			SM	Silty SAND: fine to coarse grained, light grey.				ALLUVIAL
							2			END OF BOREHOLE AT 2.0m				
							3							
							4							
							5							
							6							
							7							

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Log No. 213 **1/1**

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 29.42m

Date: 21/8/19 **Datum:** AHD

Plant Type: JK308 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION							0			FILL: Silty sand, fine to medium grained, brown, trace of sandstone gravel and brick fragments.	M			GRASS COVER 8.4kg BUCKET NO FCF
						N = 4 3,2,2				FILL: Silty sand, fine to coarse grained, light brown, trace of sandstone gravel, ash and slag.				11.8kg BUCKET AMF1
						N = 2 1,1,1	1			FILL: Clayey sand, fine to coarse grained, orange brown trace of ironstone and igneous gravel.				8.4kg BUCKET NO FCF
							2		SM	Silty SAND: fine to coarse grained, light grey.	M			ALLUVIAL
									SC	Clayey SAND: fine to coarse grained, brown.	M			
										END OF BOREHOLE AT 2.5m				
							3							
							4							
							5							
							6							
							7							

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Log No. 214 **1/1**

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 29.32m

Date: 21/8/19 **Datum:** AHD

Plant Type: JK308 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION			■		■		0			FILL: Silty sand, fine to coarse grained, brown, trace of sandstone gravel.	M			GRASS COVER AMF2 0.1 9.1kg BUCKET AMF2 8.4kg BUCKET NO FCF
			■		■	N = 2 3,1,1				FILL: Silty sand, fine to coarse grained, grey, trace of igneous ironstone and sandstone gravel.				
			■		■		1			FILL: Silty clay, low to medium plasticity, red brown, trace of ironstone, sandstone and igneous gravel and slag.	w>PL			11.9KG BUCKET NO FCF
			■		■	N = 2 2,1,1								
			■		■		2							7.8kg BUCKET NO FCF
			■			N = 7 6,3,4	3		SM	Silty SAND: fine to coarse grained, brown, trace of clay fines.	M			ALLUVIAL
							4			END OF BOREHOLE AT 3.3m				
							5							
							6							
							7							

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Log No. 215 1/1

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 29.01m

Date: 21/8/19 **Datum:** AHD

Plant Type: JK308 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION							0			FILL: Silty sand, fine to coarse grained, brown, trace of sandstone gravel.	M			GRASS COVER NO FCF 0.1 9.0kg BUCKET NO FCF
						N = 2 2,1,1				FILL: Silty sand, fine to coarse grained, light brown, trace of ironstone and sandstone gravel.	w<PL			2.5kg BUCKET NO FCF
							1			FILL: Silty clay, low to medium plasticity, red brown, trace of ironstone and igneous gravel and ash.				10.6kG BUCKET NO FCF
						N = 3 2,1,2	2							10.3KG BUCKET NO FCF
						N = 6 2,2,4	3		SM	Silty SAND: fine to coarse grained, grey.	D			ALLUVIAL
										END OF BOREHOLE AT 3.15m				
							4							
							5							
							6							
							7							

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Log No. 216 **1/1**

Environmental logs are not to be used for geotechnical purposes

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 28.31m

Date: 21/8/19 **Datum:** AHD

Plant Type: JK308 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION			■		■		0			FILL: Silty sand, fine to medium grained, brown, trace of sandstone and igneous gravel.	M			GRASS COVER NO FCF 0.1m 9.6kg BUCKET NO FCF
					■	N = 3 2,1,2				FILL: Silty sand, fine to coarse grained, light brown, trace of sandstone gravel and asphalt.	w>PL			2.6kg BUCKET NO FCF
					■		1			FILL: Silty clay, low to medium plasticity, red brown, trace of ironstone, sandstone and igneous gravel, ash and slag.				10.1kg BUCKET NO FCF
			■		■	N = 11 6,5,6	2							
										FILL: Clayey sand, fine to coarse grained, brown, trace of ironstone gravel and ash.	M			12.1kG BUCKET NO FCF 5.2kg BUCKET NO FCF
					■	N = 8 3,4,4	3		SM	Silty SAND: fine to coarse grained, grey.	D			ALLUVIAL
										END OF BOREHOLE AT 3.2m				
							4							
							5							
							6							
							7							

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Log No. 217 1/1

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 29.0m

Date: 23/8/19 **Datum:** AHD

Plant Type: JK205 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty sand, fine to coarse grained, brown, trace of sandstone gravel.	M			GRASS COVER NO FCF 0.1m 10.4kg BUCKET NO FCF
	■		■		■	N = 4 2,2,2				FILL: Silty sand, fine to coarse grained, grey, trace of sandstone gravel, clay fines and ash.	w>PL			3.8kg BUCKET NO FCF
	■		■		■		1			FILL: Silty clay, low to medium plasticity, red brown, trace of ironstone, sandstone and igneous gravel and ash.				7.8kg BUCKET NO FCF
						N > 3 3 REFUSAL				END OF BOREHOLE AT 1.50m				REFUSAL ON INFERRED CONCRET
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. 218 **1/1**

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 29.32m

Date: 23/8/19 **Datum:** AHD

Plant Type: JK205 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION						N = 10 4,4,6	0			FILL: Silty sand, fine to coarse grained, brown, trace of sandstone gravel and asphalt.	D			GRASS COVER NO FCF 0.1m 10.3kG BUCKET
											w>PL			
							1			FILL: Silty clay, low to medium plasticity, red brown, trace of ironstone, sandstone and igneous gravel, slag and ash.				NO FCF 9.2kg BUCKET NO FCF
						N = 16 5,8,8				FILL: Silty clay, low to medium plasticity, brown and grey, with fine to coarse grained, sand, trace of ironstone and sandstone gravel.				3.0kg BUCKET NO FCF
							2		SM	Silty SAND: fine to coarse grained, light brown.	M			ALLUVIAL
							3			END OF B0REHOLE AT 3.0m				
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOG

Log No. 219 1/1

Environmental logs are not to be used for geotechnical purposes

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 28.76m

Date: 22/8/19 **Datum:** AHD

Plant Type: JK305 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty sand, fine to coarse grained, brown, trace of igneous gravel, asphalt and brick fragments.	M			GRASS COVER NO FCF 0.1m 10.8kg BUCKET NO FCF
	■		■		■	N = 14 7,6,8				FILL: Clayey sand, fine to coarse grained, brown, trace of ironstone and igneous gravel, concrete and brick fragments.				11.8kg BUCKET NO FCF
	■		■				1							
	■		■			N = 8 5,5,3			SM	Silty SAND: fine to coarse grained, light grey.	D			ALLUVIAL
							2			END OF BOREHOLE AT 1.95m				
							3							
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOG

Log No. 220 1/1

Environmental logs are not to be used for geotechnical purposes

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 29.41m

Date: 21/8/19 **Datum:** AHD

Plant Type: JK308 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION			■		■		0			FILL: Sandy silt, low to medium plasticity, brown, fine to medium grained sand, with organic material.	w<PL			MULCH COVER NO FCF 0.1m 5.8kg BUCKET NO FCF 2.4kg BUCKET NO FCF
			■		■					FILL: Clayey sand, fine to coarse grained, light brown, trace of igneous and sandstone gravel.	M			
						N = 11 4,5,6			SM	Silty SAND: fine to coarse grained, light grey.	D			ALLUVIAL
						N = 19 7,8,11	1		-	Silty clayey SAND: fine to coarse grained, brown.	D			
							2			END OF BOREHOLE AT 1.95m				
							3							
							4							
							5							
							6							
							7							

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Log No. 221 1/1

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 29.49m

Date: 21/8/19 **Datum:** AHD

Plant Type: JK308 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		■		0			FILL: Sandy silt, low to medium plasticity, brown, fine to medium grained sand, with organic material.	w<PL			MULCH COVER NO FCF 0.1m 4.2kg BUCKET NO FCF 6.7kg BUCKET NO FCF
	■		■		■	N = 7 4,4,3				FILL: Silty sandy clay, low to medium plasticity, light brown, trace of ironstone and sandstone gravel.				
	■		■				1		SM	Silty SAND: fine to coarse grained, light grey.	D			ALLUVIAL
										END OF BOREHOLE AT 1.5m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. 222 1/1

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 29.47m

Date: 21/8/19 **Datum:** AHD

Plant Type: JK308 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION						N = 10 6,5,5	0			FILL: Silty sand, fine to coarse grained, brown, trace of ironstone and igneous gravel and root fibres.	M			GRASS COVER NO FCF 0.1m 11.3kg BUCKET NO FCF 10.9kg BUCKET NO FCF
										FILL: Clayey sand, fine to medium grained, light brown, trace of ironstone gravel and ash.				
							1		SM	Silty SAND: fine to coarse grained, light grey.	D			ALLUVIAL
										END OF BOREHOLE AT 1.5m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. 223 **1/1**

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 29.29m

Date: 21/8/19 **Datum:** AHD

Plant Type: JK308 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty sand, fine to medium grained, brown, trace of ironstone and igneous gravel.	M			GRASS COVER 8.5kg BUCKET NO FCF 11.3kg BUCKET NO FCF
	■		■		■	N = 7 3,3,4				FILL: Silty sand, fine to coarse grained, grey, trace of sandstone gravel, glass and ash.				
					■		1							
	■		■			N = 4 2,2,2			SM	Silty SAND: fine to coarse grained, light grey.	M			ALLUVIAL
							2			END OF BOREHOLE AT 1.95m				
							3							
							4							
							5							
							6							
							7							

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Log No. 224 **1/1**

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 28.29m

Date: 22/8/19 **Datum:** AHD

Plant Type: JK305 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		■		0			FILL: Silty sand, fine to coarse grained, grey, trace of concrete fragments and root fibres.	D			GRASS COVER NO FCF 0.1m 9.8kg BUCKET
										END OF BOREHOLE AT 0.2m				REFUSAL ON INFERRRED CONCRETE
							1							
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. 225 1/1

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 28.12m

Date: 22/8/19 **Datum:** AHD

Plant Type: JK305 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION			■		■	N > 2 6,2,0/ 50mm REFUSAL	0		-	ASPHALTIC CONCRETE: 30mm.t FILL: Silty sand, fine to coarse grained, brown, trace of ironstone and igneous gravel and ash.	M			11.2kg BUCKET NO FCF
							1			END OF BOREHOLE AT 0.8m				REFUSAL ON INFERRED CONCRETE
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. 226 **1/1**

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 28.10m

Date: 22/8/19 **Datum:** AHD

Plant Type: JK305 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION			■		■		0			FILL: Sandy silt, low to medium plasticity, brown with organic material, trace of igneous gravel and slag.	w<PL			MULCH COVER NO FCF 0.1m 5.5kg BUCKET NO FCF
						N = 9 4,5,4			SM	Silty SAND: fine to coarse grained, light grey.	D			ALLUVIAL
							1							
										END OF BOREHOLE AT 1.5m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. 227 1/1

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 28.44m

Date: 22/8/19 **Datum:** AHD

Plant Type: JK305 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Sandy clay, low to medium plasticity, brown with organic material.	w<PL			MULCH COVER 5.5kg BUCKET NO FCF
	■		■			N = 9 6,4,5			SM	Silty SAND: fine to coarse grained, light grey.	D			ALLUVIAL
							1			END OF BOREHOLE AT 1.0m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. 228 **1/2**

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 28.01m

Date: 22/8/19 **Datum:** AHD

Plant Type: JK305 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
							0			FILL: Sandy silt, low to medium plasticity, brown, with organic material.	w<PL			MULCH COVER NO FCF 0.1m
						N = 10 5,4,6			SM	Silty SAND: fine to coarse grained, light grey.	D			5.7kg BUCKET NO FCF ALLUVIAL
						N = 10 7,5,5,	1			Silty SAND: fine to coarse grained, brown, trace of clay fines.				
						N = 17 10,9,8	2		SC	Clayey SAND: fine to coarse grained, orange brown.	D			
						N = 11 4,6,5	3		CL-CI	Sandy CLAY: low to medium plasticity, orange brown, fine to coarse grained sand.	w<PL			
						N = 33 8,15,18	4		CI-CH	Sandy CLAY: medium to high plasticity, red brown mottled grey, with ironstone bands.	w<PL			
							5							
							6							
							7							

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Log No. 228 **2/2**

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 28.01m

Date: 22/8/19 **Datum:** AHD

Plant Type: JK305 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
									CI-CH	Sandy CLAY: medium to high plasticity, red brown mottled grey, with ironstone bands.	w<PL			
						N = 14 6,8,6	8		SC	Clayey SAND: fine to coarse grained, yellow brown mottled grey with ironstone bands.	M			
▼ ON 4/9/19							9		CI-CH	Sandy CLAY: medium to high plasticity, red brown mottled grey with ironstone bands.	w<PL			
▶							10							
							11							
▼ ON COMPLETION							12			END OF BOREHOLE AT 12.0m				Groundwater monitoring well installed to 12.0m. Class 18 machine slotted 50mm dia. PVC standpipe 12.0m to 6.0m. Casing 6.0m to 0.0m. 2mm sand filter pack 12.0m to 2.8m. Bentonite seal 2.8m to 1.3m. Backfilled with sand to the surface. Completed with concreted gatic cover.
							13							
							14							

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Log No. 229 1/1

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** HAND TOOLS **R.L. Surface:** ≈ 26.07m

Date: 26/8/19 **Datum:** AHD

Plant Type: N/A **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		■		0			FILL: Sandy silt, low to medium plasticity, brown, with organic material, trace of igneous gravel and root fibres.	w<PL			MULCH COVER NO FCF 0.1m 5.0kg BUCKET NO FCF 2.0kg BUCKET NO FCF 2.5kg BUCKET NO FCF
											w<PL			
	■		■		■					FILL: Sandy clay, low to medium plasticity, red brown, fine to medium grained sand, trace of ironstone and igneous gravel.				
							1			FILL: Sandy clay, low to medium plasticity, grey, fine to medium grained sand, trace of ash.	M			NOT ENOUGH SAMPLE FOR BUCKET
	■		■						SC		M			
										FILL: Clayey sand, fine to medium grained, brown, trace of ash.				ALLUVIAL
										Clayey SAND: fine to coarse grained, brown.				
							2			END OF BOREHOLE AT 1.8m				
							3							
							4							
							5							
							6							
							7							

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Log No. 230 **1/1**

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** HAND TOOLS **R.L. Surface:** ≈ 25.73m

Date: 23/8/19 **Datum:** AHD

Plant Type: N/A **Logged/Checked by:** S.W./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION			■		■		0			FILL: Silty sand, fine to coarse grained, brown, trace of igneous gravel, glass and root fibres.	D M			GRASS COVER NO FCF 0.1m 11.9kg BUCKET NO FCF NOT ENOUGH SAMPLE FOR BUCKET
										FILL: Silty clayey sand, fine to coarse grained, brown, trace of ironstone and igneous gravel, concrete fragments and ash.				
							1			END OF BOREHOEL AT 0.4m				HAND TOOL REFUSAL
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. 231 **1/1**

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** HAND TOOLS **R.L. Surface:** ≈ 26.08m

Date: 26/8/19 **Datum:** AHD

Plant Type: N/A **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION			■		■		0			FILL: Sandy silt, low to medium plasticity, brown, with organic material, trace of igneous gravel and glass.	w<PL			MULCH COVER NO FCF 0.1m 4.8kg BUCKET NO FCF
										END OF BOREHOLE AT 0.3m				HAND TOOL REFUSAL
							1							
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. 232 **1/1**

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** HAND TOOLS **R.L. Surface:** ≈ 25.73m

Date: 23/8/19 **Datum:** AHD

Plant Type: N/A **Logged/Checked by:** S.W./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		■		0			FILL: Silty sand, fine to coarse grained, dark brown, trace of brick fragments and root fibres.	D			GRASS COVER NO FCF 0.1m 10.4kg BUCKET NO FCF
											M			
										FILL: Silty clayey sand, fine to coarse grained, brown, trace of igneous and ironstone gravel.	w<PL			NOT ENOUGH SAMPLE FOR BUCKET NO FCF
											w<PL			
							1		SC	FILL: Sandy clay, low to medium plasticity, grey brown, trace of ironstone and igneous gravel and ash.	M			ALLUVIAL
										FILL: Sandy clay, low to medium plasticity, grey, trace of ironstone gravel.				
										Clayey SAND: fine to coarse grained, brown.				
							2			as above, but light brown.				
										END OF BOREHOLE AT 1.4m				
							3							
							4							
							5							
							6							
							7							

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Log No. 233 1/1

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** HAND TOOLS **R.L. Surface:** ≈ 25.66m

Date: 26/8/19 **Datum:** AHD

Plant Type: N/A **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		■		0			FILL: Sandy silt, low to medium plasticity, brown, with organic material, trace of igneous gravel.	w<PL			MULCH COVER NO FCF 0.1m 5.3kg BUCKET
	■		■						SM	FILL: Clayey sand, fine to coarse grained, brown, trace of sandstone gravel and ash.	M D			NO FCF NOT ENOUGH SAMPLE FOR BUCKET
							1			Silty SAND: fine to coarse grained, light grey.				ALLUVIAL
										as above, but light brown.				
										END OF BOREHOLE AT 0.9m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. 234 **1/1**

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** HAND TOOLS **R.L. Surface:** ≈ 25.46m

Date: 23/8/19 **Datum:** AHD

Plant Type: N/A **Logged/Checked by:** S.W./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION			■		■		0			FILL: Silty sand, fine to coarse grained, brown, trace of igneous gravel, brick fragments and root fibres.	D			GRASS COVER NO FCF 0.1m
			■							FILL: Silty clayey sand, fine to coarse grained, brown, trace of igneous gravel.	M			12.4kg BUCKET NO FCF
			■							FILL: Clayey sand, fine to coarse grained, grey brown, trace of igneous and ironstone gravel and ash.				NOT ENOUGH SAMPLE FOR BUCKET
			■				1		SC		M			NO FCF ALLUVIAL
										FILL: Silty clayey sand, fine to coarse grained, grey, trace of ironstone gravel and ash.				
										Clayey SAND: fine to coarse grained, orange brown, trace of ironstone gravel.				
							2			END OF BOREHOLE AT 1.6m				
							3							
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOG

Environmental logs are not to be used for geotechnical purposes

Log No. 235 **1/1**

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** HAND TOOLS **R.L. Surface:** ≈ 26.52m

Date: 26/8/19 **Datum:** AHD

Plant Type: AHD **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION			■		■		0			FILL: Sandy silt, low to medium plasticity, brown, with organic material, trace of igneous gravel.	w<PL			MULCH COVER NO FCF 0.1m 6.3kg BUCKET NO FCF
										FILL: Sandy clay, low to medium plasticity, brown and red brown, with ironstone gravel.				NOT ENOUGH SAMPLE FOR BUCKET
							1			END OF BOREHOLE AT 0.3m				HAND TOOL REFUSAL
							2							
							3							
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOG

Log No. 236 1/1

Environmental logs are not to be used for geotechnical purposes

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 25.46m

Date: 22/8/19 **Datum:** AHD

Plant Type: JK305 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty sand, fine to coarse grained, brown, trace of igneous, ironstone and sandstone gravel.	D			GRASS COVER NO FCF 0.1m 11.7kg BUCKET NO FCF 10.0kg BUCKET NO FCF
						N = 13 6,8,5				FILL: Silty sand, fine to coarse grained, grey brown, trace of sandstone and ironstone gravel, brick fragments and ash.	M			
	■		■				1		SM	Silty SAND: fine to coarse grained, brown.	M			ALLUVIAL
						N = 8 3,4,4			CL-CI	Sandy CLAY: low to medium plasticity, orange brown, fine to coarse grained sand.	w>PL			
							2			END OF BOREHOLE AT 1.95m				
							3							
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOG

Log No. 237 1/1

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 25.33m

Date: 22/8/19 **Datum:** AHD

Plant Type: JK305 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		■		0			FILL: Silty sand, fine to coarse grained, brown and red brown, trace of ironstone gravel and organic material.	D			MULCH COVER NO FCF 0.1m
	■		■			N = 11 5,5,6			SM	Silty SAND: fine to coarse grained, light grey.	D			8.5kg BUCKET NO FCF ALLUVIAL
							1			as above, but brown.				
										END OF BOREHOLE AT 0.95m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. 238 **1/1**

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Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 25.30m

Date: 22/8/19 **Datum:** AHD

Plant Type: JK305 **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION			■		■		0			FILL: Silty sand, fine to coarse grained, brown, trace of igneous gravel, concrete and root fibres.	D			MULCH COVER NO FCF 0.1m 10.1kg BUCKET NO FCF
						N = 8 4,4,4			SM	Silty SAND: fine to coarse grained, light brown.	D			ALLUVIAL
							1			END OF BOREHOLE AT 0.95m				
							2							
							3							
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOG

Log No. 239 1/1

Environmental logs are not to be used for geotechnical purposes

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** HAND TOOLS **R.L. Surface:** ≈ 25.03m

Date: 26/8/19 **Datum:** AHD

Plant Type: N/A **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION							0			FILL: Clayey sand, fine to medium grained, brown, trace of igneous and sandstone gravel, brick and ash.	D			MULCH COVER NO FCF 0.1m 6.5kg BUCKET NO FCF
							1			FILL: Silty sand, fine to coarse grained, grey.				POSSIBLY NATURAL
										FILL: Silty sand, fine to coarse grained, brown, trace of slag.				NOT ENOUGH SAMPLE FOR BUCKET NO FCF
									SM	Silty SAND: fine to coarse grained, light brown.	D			ALLUVIAL
							2			END OF BOREHOLE AT 1.8m				
							3							
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOG

Log No. 240 **1/1**

Environmental logs are not to be used for geotechnical purposes

Client: URBIS PTY LTD

Project: PROPOSED BROOKVALE OVAL DEVELOPMENT

Location: BROOKVALE OVAL, PITTWATER ROAD, BROOKVALE, NSW

Job No.: E32596BD **Method:** HAND TOOLS **R.L. Surface:** ≈ 25.11m

Date: 26/8/19 **Datum:** AHD

Plant Type: N/A **Logged/Checked by:** A.M./M.D.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Clayey sand, fine to coarse grained, brown, trace of igneous, ironstone and sandstone gravel, brick, concrete fragments and ash.	M			NO FCF 0.1m 14.3kg BUCKET NO FCF
	■		■						SM	Silty SAND: fine to coarse grained, light brown.	M			ALLUVIAL
							1			END OF BOREHOLE AT 1.0m				
							2							
							3							
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOGS EXPLANATION NOTES

INTRODUCTION

These notes have been provided to amplify the environmental report in regard to classification methods, field procedures and certain matters relating to the logging of soil and rock. Not all notes are necessarily relevant to all reports.

Where geotechnical borehole logs are utilised for environmental purpose, reference should also be made to the explanatory notes included in the geotechnical report. Environmental logs are not suitable for geotechnical purposes.

The ground is a product of continuing natural and man-made processes and therefore exhibits a variety of characteristics and properties which vary from place to place and can change with time. Environmental studies include gathering and assimilating limited facts about these characteristics and properties in order to understand or predict the behaviour of the ground on a particular site under certain conditions. This report may contain such facts obtained by inspection, excavation, probing, sampling, testing or other means of investigation. If so, they are directly relevant only to the ground at the place where and time when the investigation was carried out.

DESCRIPTION AND CLASSIFICATION METHODS

The methods of description and classification of soils and rocks used in this report are based on Australian Standard 1726:2017 *'Geotechnical Site Investigations'*. In general, descriptions cover the following properties – soil or rock type, colour, structure, strength or density, and inclusions. Identification and classification of soil and rock involves judgement and the Company infers accuracy only to the extent that is common in current geoenvironmental practice.

Soil types are described according to the predominating particle size and behaviour as set out in the attached soil classification table qualified by the grading of other particles present (eg. sandy clay) as set out below:

Soil Classification	Particle Size
Clay	< 0.002mm
Silt	0.002 to 0.075mm
Sand	0.075 to 2.36mm
Gravel	2.36 to 63mm
Cobbles	63 to 200mm
Boulders	> 200mm

Non-cohesive soils are classified on the basis of relative density, generally from the results of Standard Penetration Test (SPT) as below:

Relative Density	SPT 'N' Value (blows/300mm)
Very loose (VL)	< 4
Loose (L)	4 to 10
Medium dense (MD)	10 to 30
Dense (D)	30 to 50
Very Dense (VD)	> 50

Cohesive soils are classified on the basis of strength (consistency) either by use of a hand penetrometer, vane shear, laboratory testing and/or tactile engineering examination. The strength terms are defined as follows.

Classification	Unconfined Compressive Strength (kPa)	Indicative Undrained Shear Strength (kPa)
Very Soft (VS)	≤ 25	≤ 12
Soft (S)	> 25 and ≤ 50	> 12 and ≤ 25
Firm (F)	> 50 and ≤ 100	> 25 and ≤ 50
Stiff (St)	> 100 and ≤ 200	> 50 and ≤ 100
Very Stiff (VSt)	> 200 and ≤ 400	> 100 and ≤ 200
Hard (Hd)	> 400	> 200
Friable (Fr)	Strength not attainable – soil crumbles	

Rock types are classified by their geological names, together with descriptive terms regarding weathering, strength, defects, etc. Where relevant, further information regarding rock classification is given in the text of the report. In the Sydney Basin, 'shale' is used to describe fissile mudstone, with a weakness parallel to bedding. Rocks with alternating inter-laminations of different grain size (eg. siltstone/claystone and siltstone/fine grained sandstone) are referred to as 'laminite'.

INVESTIGATION METHODS

The following is a brief summary of investigation methods currently adopted by the Company and some comments on their use and application. All methods except test pits, hand auger drilling and portable Dynamic Cone Penetrometers require the use of a mechanical rig which is commonly mounted on a truck chassis or track base.

Test Pits: These are normally excavated with a backhoe or a tracked excavator, allowing close examination of the insitu soils and 'weaker' bedrock if it is safe to descend into the pit. The depth of penetration is limited to about 3m for a backhoe and up to 6m for a large excavator. Limitations of test pits are the problems associated with disturbance and difficulty of reinstatement and the consequent effects on close-by structures. Care must be taken if construction is to be carried out near test pit locations to either properly recompact the backfill during construction or to design and construct the

structure so as not to be adversely affected by poorly compacted backfill at the test pit location.

Hand Auger Drilling: A borehole of 50mm to 100mm diameter is advanced by manually operated equipment. Refusal of the hand auger can occur on a variety of materials such as obstructions within any fill, tree roots, hard clay, gravel or ironstone, cobbles and boulders, and does not necessarily indicate rock level.

Continuous Spiral Flight Augers: The borehole is advanced using 75mm to 115mm diameter continuous spiral flight augers, which are withdrawn at intervals to allow sampling and insitu testing. This is a relatively economical means of drilling in clays and in sands above the water table. Samples are returned to the surface by the flights or may be collected after withdrawal of the auger flights, but they can be very disturbed and layers may become mixed. Information from the auger sampling (as distinct from specific sampling by SPTs or undisturbed samples) is of limited reliability due to mixing or softening of samples by groundwater, or uncertainties as to the original depth of the samples. Augering below the groundwater table is of even lesser reliability than augering above the water table.

Rock Augering: Use can be made of a Tungsten Carbide (TC) bit for auger drilling into rock to indicate rock quality and continuity by variation in drilling resistance and from examination of recovered rock cuttings. This method of investigation is quick and relatively inexpensive but provides only an indication of the likely rock strength and predicted values may be in error by a strength order. Where rock strengths may have a significant impact on construction feasibility or costs, then further investigation by means of cored boreholes may be warranted.

Wash Boring: The borehole is usually advanced by a rotary bit, with water being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be assessed from the cuttings, together with some information from "feel" and rate of penetration.

Mud Stabilised Drilling: Either Wash Boring or Continuous Core Drilling can use drilling mud as a circulating fluid to stabilise the borehole. The term 'mud' encompasses a range of products ranging from bentonite to polymers. The mud tends to mask the cuttings and reliable identification is only possible from intermittent intact sampling (eg. from SPT and U50 samples) or from rock coring, etc.

Continuous Core Drilling: A continuous core sample is obtained using a diamond tipped core barrel. Provided full core recovery is achieved (which is not always possible in very low strength rocks and granular soils), this technique provides a very reliable (but relatively expensive) method of investigation. In rocks, NMLC or HQ triple tube core barrels, which give a core of about 50mm and 61mm diameter, respectively, is usually used with water flush. The length of core recovered is compared to the length drilled and any length not recovered is shown as NO CORE. The location of NO CORE recovery is determined on site by the supervising engineer; where the location is uncertain, the loss is placed at the bottom of the drill run.

Standard Penetration Tests: Standard Penetration Tests (SPT) are used mainly in non-cohesive soils, but can also be used in cohesive soils, as a means of indicating density or strength and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289.6.3.1–2004 (R2016) *'Methods of Testing Soils for Engineering Purposes, Soil Strength and Consolidation Tests – Determination of the Penetration Resistance of a Soil – Standard Penetration Test (SPT)'*.

The test is carried out in a borehole by driving a 50mm diameter split sample tube with a tapered shoe, under the impact of a 63.5kg hammer with a free fall of 760mm. It is normal for the tube to be driven in three successive 150mm increments and the 'N' value is taken as the number of blows for the last 300mm. In dense sands, very hard clays or weak rock, the full 450mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form:

- In the case where full penetration is obtained with successive blow counts for each 150mm of, say, 4, 6 and 7 blows, as

  N = 13
  4, 6, 7

- In a case where the test is discontinued short of full penetration, say after 15 blows for the first 150mm and 30 blows for the next 40mm, as

  N > 30
  15, 30/40mm

The results of the test can be related empirically to the engineering properties of the soil.

A modification to the SPT is where the same driving system is used with a solid 60° tipped steel cone of the same diameter as the SPT hollow sampler. The solid cone can be continuously driven for some distance in soft clays or loose sands, or may be used where damage would otherwise occur to the SPT. The results of this Solid Cone Penetration Test (SCPT) are shown as 'N_c' on the borehole logs, together with the number of blows per 150mm penetration.

LOGS

The borehole or test pit logs presented herein are an interpretation of the subsurface conditions, and their reliability will depend to some extent on the frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will enable the most reliable assessment, but is not always practicable or possible to justify on economic grounds. In any case, the boreholes or test pits represent only a very small sample of the total subsurface conditions.

The terms and symbols used in preparation of the logs are defined in the following pages.

Interpretation of the information shown on the logs, and its application to design and construction, should therefore take into account the spacing of boreholes or test pits, the method of drilling or excavation, the frequency of sampling and testing and the possibility of other than 'straight line' variations between the boreholes or test pits. Subsurface conditions between boreholes or test pits may vary significantly from conditions encountered at the borehole or test pit locations.

GROUNDWATER

Where groundwater levels are measured in boreholes, there are several potential problems:

- Although groundwater may be present, in low permeability soils it may enter the hole slowly or perhaps not at all during the time it is left open.
- A localised perched water table may lead to an erroneous indication of the true water table.
- Water table levels will vary from time to time with seasons or recent weather changes and may not be the same at the time of construction.
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must be washed out of the hole or 'reverted' chemically if reliable water observations are to be made.

More reliable measurements can be made by installing standpipes which are read after the groundwater level has stabilised at intervals ranging from several days to perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from perched water tables or surface water.

FILL

The presence of fill materials can often be determined only by the inclusion of foreign objects (eg. bricks, steel, etc) or by distinctly unusual colour, texture or fabric. Identification of the extent of fill materials will also depend on investigation methods and frequency. Where natural soils similar to those at the site are used for fill, it may be difficult with limited testing and sampling to reliably assess the extent of the fill.

The presence of fill materials is usually regarded with caution as the possible variation in density and material type is much greater than with natural soil deposits. Consequently, there is an increased risk of adverse environmental characteristics or behaviour. If the volume and nature of fill is of importance to a project, then frequent test pit excavations are preferable to boreholes.

LABORATORY TESTING

Laboratory testing has not been undertaken to confirm the soil classification and rock strengths indicated on the environmental logs unless noted in the report.

SYMBOL LEGENDS

SOIL

FILL

TOPSOIL

CLAY (CL, CI, CH)

SILT (ML, MH)

SAND (SP, SW)

GRAVEL (GP, GW)

SANDY CLAY (CL, CI, CH)

SILTY CLAY (CL, CI, CH)

CLAYEY SAND (SC)

SILTY SAND (SM)

GRAVELLY CLAY (CL, CI, CH)

CLAYEY GRAVEL (GC)

SANDY SILT (ML, MH)

PEAT AND HIGHLY ORGANIC SOILS (Pt)

ROCK

CONGLOMERATE

SANDSTONE

SHALE/MUDSTONE

SILTSTONE

CLAYSTONE

COAL

LAMINITE

LIMESTONE

PHYLLITE, SCHIST

TUFF

GRANITE, GABBRO

DOLERITE, DIORITE

BASALT, ANDESITE

QUARTZITE

OTHER MATERIALS

BRICKS OR PAVERS

CONCRETE

ASPHALTIC CONCRETE

CLASSIFICATION OF COARSE AND FINE GRAINED SOILS

Major Divisions		Group Symbol	Typical Names	Field Classification of Sand and Gravel	Laboratory Classification	
Coarse grained soil (more than 65% of soil excluding oversize fraction is greater than 0.075mm)	GRAVEL (more than half of coarse fraction is larger than 2.36mm	GW	Gravel and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_u > 4$ $1 < C_c < 3$
		GP	Gravel and gravel-sand mixtures, little or no fines, uniform gravels	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		GM	Gravel-silt mixtures and gravel-sand-silt mixtures	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	Fines behave as silt
		GC	Gravel-clay mixtures and gravel-sand-clay mixtures	'Dirty' materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	Fines behave as clay
	SAND (more than half of coarse fraction is smaller than 2.36mm)	SW	Sand and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_u > 6$ $1 < C_c < 3$
		SP	Sand and gravel-sand mixtures, little or no fines	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		SM	Sand-silt mixtures	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	N/A
		SC	Sand-clay mixtures	'Dirty' materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	

Major Divisions		Group Symbol	Typical Names	Field Classification of Silt and Clay			Laboratory Classification
				Dry Strength	Dilatancy	Toughness	% < 0.075mm
Fine grained soils (more than 35% of soil excluding oversize fraction is less than 0.075mm)	SILT and CLAY (low to medium plasticity)	ML	Inorganic silt and very fine sand, rock flour, silty or clayey fine sand or silt with low plasticity	None to low	Slow to rapid	Low	Below A line
		CL, CI	Inorganic clay of low to medium plasticity, gravelly clay, sandy clay	Medium to high	None to slow	Medium	Above A line
		OL	Organic silt	Low to medium	Slow	Low	Below A line
	SILT and CLAY (high plasticity)	MH	Inorganic silt	Low to medium	None to slow	Low to medium	Below A line
		CH	Inorganic clay of high plasticity	High to very high	None	High	Above A line
		OH	Organic clay of medium to high plasticity, organic silt	Medium to high	None to very slow	Low to medium	Below A line
	Highly organic soil	Pt	Peat, highly organic soil	–	–	–	–

Laboratory Classification Criteria

A well graded coarse grained soil is one for which the coefficient of uniformity $Cu > 4$ and the coefficient of curvature $1 < C_c < 3$. Otherwise, the soil is poorly graded. These coefficients are given by:

$$C_U = \frac{D_{60}}{D_{10}} \qquad and \qquad C_C = \frac{(D_{30})^2}{D_{10}\, D_{60}}$$

Where D_{10}, D_{30} and D_{60} are those grain sizes for which 10%, 30% and 60% of the soil grains, respectively, are smaller.

NOTES:

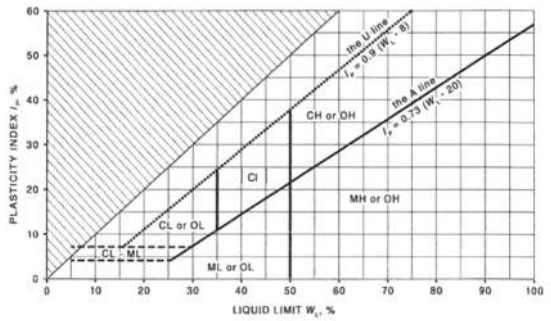
1 For a coarse grained soil with a fines content between 5% and 12%, the soil is given a dual classification comprising the two group symbols separated by a dash; for example, for a poorly graded gravel with between 5% and 12% silt fines, the classification is GP-GM.

2 Where the grading is determined from laboratory tests, it is defined by coefficients of curvature (C_c) and uniformity (C_u) derived from the particle size distribution curve.

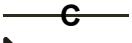
3 Clay soils with liquid limits > 35% and ≤ 50% may be classified as being of medium plasticity.

4 The U line on the Modified Casagrande Chart is an approximate upper bound for most natural soils.

Modified Casagrande Chart for Classifying Silts and Clays according to their Behaviour



LOG SYMBOLS

Log Column	Symbol	Definition
Groundwater Record		Standing water level. Time delay following completion of drilling/excavation may be shown.
		Extent of borehole/test pit collapse shortly after drilling/excavation.
		Groundwater seepage into borehole or test pit noted during drilling or excavation.
Samples	ES	Sample taken over depth indicated, for environmental analysis.
	U50	Undisturbed 50mm diameter tube sample taken over depth indicated.
	DB	Bulk disturbed sample taken over depth indicated.
	DS	Small disturbed bag sample taken over depth indicated.
	ASB	Soil sample taken over depth indicated, for asbestos analysis.
	ASS	Soil sample taken over depth indicated, for acid sulfate soil analysis.
	SAL	Soil sample taken over depth indicated, for salinity analysis.
Field Tests	N = 17 4, 7, 10	Standard Penetration Test (SPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration. 'Refusal' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	N_c = 5 7 3R	Solid Cone Penetration Test (SCPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration for 60° solid cone driven by SPT hammer. 'R' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	VNS = 25 PID = 100	Vane shear reading in kPa of undrained shear strength. Photoionisation detector reading in ppm (soil sample headspace test).
Moisture Condition (Fine Grained Soils)	$w > PL$ $w \approx PL$ $w < PL$ $w \approx LL$ $w > LL$	Moisture content estimated to be greater than plastic limit. Moisture content estimated to be approximately equal to plastic limit. Moisture content estimated to be less than plastic limit. Moisture content estimated to be near liquid limit. Moisture content estimated to be wet of liquid limit.
(Coarse Grained Soils)	D M W	DRY – runs freely through fingers. MOIST – does not run freely but no free water visible on soil surface. WET – free water visible on soil surface.
Strength (Consistency) Cohesive Soils	VS S F St VSt Hd Fr ( )	VERY SOFT – unconfined compressive strength ≤ 25kPa. SOFT – unconfined compressive strength > 25kPa and ≤ 50kPa. FIRM – unconfined compressive strength > 50kPa and ≤ 100kPa. STIFF – unconfined compressive strength > 100kPa and ≤ 200kPa. VERY STIFF – unconfined compressive strength > 200kPa and ≤ 400kPa. HARD – unconfined compressive strength > 400kPa. FRIABLE – strength not attainable, soil crumbles. Bracketed symbol indicates estimated consistency based on tactile examination or other assessment.
Density Index/ Relative Density (Cohesionless Soils)	VL L MD D VD ( )	**Density Index (I_D) Range (%)** / **SPT 'N' Value Range (Blows/300mm)** VERY LOOSE ≤ 15 / 0 – 4 LOOSE > 15 and ≤ 35 / 4 – 10 MEDIUM DENSE > 35 and ≤ 65 / 10 – 30 DENSE > 65 and ≤ 85 / 30 – 50 VERY DENSE > 85 / > 50 Bracketed symbol indicates estimated density based on ease of drilling or other assessment.
Hand Penetrometer Readings	300 250	Measures reading in kPa of unconfined compressive strength. Numbers indicate individual test results on representative undisturbed material unless noted otherwise.

Log Column	Symbol	Definition
Remarks	'V' bit	Hardened steel 'V' shaped bit.
	'TC' bit	Twin pronged tungsten carbide bit.
	T_{60}	Penetration of auger string in mm under static load of rig applied by drill head hydraulics without rotation of augers.
	Soil Origin	The geological origin of the soil can generally be described as: RESIDUAL – soil formed directly from insitu weathering of the underlying rock. No visible structure or fabric of the parent rock. EXTREMELY WEATHERED – soil formed directly from insitu weathering of the underlying rock. Material is of soil strength but retains the structure and/or fabric of the parent rock. ALLUVIAL – soil deposited by creeks and rivers. ESTUARINE – soil deposited in coastal estuaries, including sediments caused by inflowing creeks and rivers, and tidal currents. MARINE – soil deposited in a marine environment. AEOLIAN – soil carried and deposited by wind. COLLUVIAL – soil and rock debris transported downslope by gravity, with or without the assistance of flowing water. Colluvium is usually a thick deposit formed from a landslide. The description 'slopewash' is used for thinner surficial deposits. LITTORAL – beach deposited soil.

Classification of Material Weathering

Term		Abbreviation		Definition
Residual Soil		RS		Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.
Extremely Weathered		XW		Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible.
Highly Weathered	Distinctly Weathered (Note 1)	HW	DW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Moderately Weathered		MW		The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable, but shows little or no change of strength from fresh rock.
Slightly Weathered		SW		Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh		FR		Rock shows no sign of decomposition of individual minerals or colour changes.

NOTE 1: The term 'Distinctly Weathered' is used where it is not practicable to distinguish between 'Highly Weathered' and 'Moderately Weathered' rock. 'Distinctly Weathered' is defined as follows: *'Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores'*. There is some change in rock strength.

Rock Material Strength Classification

Term	Abbreviation	Uniaxial Compressive Strength (MPa)	Guide to Strength	
			Point Load Strength Index $Is_{(50)}$ (MPa)	Field Assessment
Very Low Strength	VL	0.6 to 2	0.03 to 0.1	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxial sample by hand. Pieces up to 30mm thick can be broken by finger pressure.
Low Strength	L	2 to 6	0.1 to 0.3	Easily scored with a knife; indentations 1mm to 3mm show in the specimen with firm blows of the pick point; has dull sound under hammer. A piece of core 150mm long by 50mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
Medium Strength	M	6 to 20	0.3 to 1	Scored with a knife; a piece of core 150mm long by 50mm diameter can be broken by hand with difficulty.
High Strength	H	20 to 60	1 to 3	A piece of core 150mm long by 50mm diameter cannot be broken by hand but can be broken by a pick with a single firm blow; rock rings under hammer.
Very High Strength	VH	60 to 200	3 to 10	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
Extremely High Strength	EH	> 200	> 10	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.

Appendix E: Laboratory Report/s & COC Documents

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CERTIFICATE OF ANALYSIS 224849

Client Details

Client	Environmental Investigation Services
Attention	Mitchell Delaney
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E32596BD, Brookvale Oval**
Number of Samples	128 Soil, 1 Water, 4 Material
Date samples received	27/08/2019
Date completed instructions received	28/08/2019

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	03/09/2019
Date of Issue	05/09/2019
Reissue Details	This report replaces R00 created on 03/09/2019 due to: Project ID Amended (Client Request)

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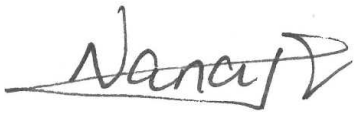

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		224849-1	224849-5	224849-6	224849-7	224849-11
Your Reference	UNITS	BH201	BH203	BH203	BH203	BH205
Depth		0.12-0.2	0.12-0.2	0.4-0.5	0.6-0.95	0.12-0.2
Date Sampled		22/08/2019	23/08/2019	23/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	121	122	126	125	107

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		224849-12	224849-14	224849-18	224849-19	224849-24
Your Reference	UNITS	BH205	BH205	BH207	BH207	BH209
Depth		0.2-0.4	1.2-1.4	0.12-0.2	0.5-0.95	0-0.2
Date Sampled		23/08/2019	23/08/2019	23/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	123	125	117	120	123

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		224849-25	224849-30	224849-31	224849-32	224849-37
Your Reference	UNITS	BH209	BH211	BH211	BH211	BH213
Depth		0.3-0.5	0-0.2	0.5-0.75	1.3-1.5	0-0.2
Date Sampled		23/08/2019	22/08/2019	22/08/2019	22/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	120	114	118	128	129

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		224849-38	224849-39	224849-40	224849-46	224849-49
Your Reference	UNITS	BH213	BH213	BH213	BH215	BH215
Depth		0.3-0.5	1.2-1.4	1.4-1.9	0-0.2	1.5-1.95
Date Sampled		21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	31/08/2019	31/08/2019	31/08/2019	31/08/2019	31/08/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	78	89	100	98	83

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		224849-56	224849-57	224849-64	224849-65	224849-66
Your Reference	UNITS	BH217	BH217	BH219	BH219	BH219
Depth		0-0.2	0.5-0.75	0-0.2	0.5-0.95	1.4-1.6
Date Sampled		23/08/2019	23/08/2019	22/08/2019	22/08/2019	22/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	31/08/2019	31/08/2019	31/08/2019	31/08/2019	31/08/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	96	86	84	90	86

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		224849-69	224849-71	224849-74	224849-75	224849-76
Your Reference	UNITS	BH221	BH221	BH223	BH223	BH223
Depth		0-0.2	0.75-0.95	0-0.2	0.5-0.95	1.5-1.7
Date Sampled		21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	31/08/2019	31/08/2019	31/08/2019	31/08/2019	31/08/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	75	98	94	98	101

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		224849-77	224849-81	224849-82	224849-84	224849-87
Your Reference	UNITS	BH224	BH227	BH227	BH229	BH229
Depth		0-0.2	0-0.2	0.5-0.7	0-0.2	1.1-1.3
Date Sampled		22/08/2019	22/08/2019	22/08/2019	26/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	31/08/2019	31/08/2019	31/08/2019	31/08/2019	31/08/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	109	90	99	89	95

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		224849-88	224849-92	224849-97	224849-98	224849-99
Your Reference	UNITS	BH229	BH232	BH232	BH233	BH233
Depth		1.3-1.5	0-0.2	1.2-1.4	0-0.2	0.3-0.4
Date Sampled		26/08/2019	23/08/2019	23/08/2019	26/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	31/08/2019	31/08/2019	31/08/2019	31/08/2019	31/08/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	103	102	86	81	89

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		224849-107	224849-108	224849-109	224849-110	224849-115
Your Reference	UNITS	BH236	BH236	BH236	BH237	BH240
Depth		0-0.2	0.5-0.7	1.1-1.3	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	22/08/2019	22/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	31/08/2019	31/08/2019	31/08/2019	31/08/2019	31/08/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	101	98	87	86	90

vTRH(C6-C10)/BTEXN in Soil					
Our Reference		224849-116	224849-119	224849-120	224849-133
Your Reference	UNITS	BH240	DUPAM3	DUPAM4	TS1
Depth		0.4-0.6	-	-	-
Date Sampled		26/08/2019	22/08/2019	22/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	31/08/2019	31/08/2019	31/08/2019	31/08/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	[NA]
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	[NA]
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	[NA]
Benzene	mg/kg	<0.2	<0.2	<0.2	101%
Toluene	mg/kg	<0.5	<0.5	<0.5	105%
Ethylbenzene	mg/kg	<1	<1	<1	96%
m+p-xylene	mg/kg	<2	<2	<2	97%
o-Xylene	mg/kg	<1	<1	<1	96%
naphthalene	mg/kg	<1	<1	<1	[NA]
Total +ve Xylenes	mg/kg	<3	<3	<3	[NA]
Surrogate aaa-Trifluorotoluene	%	92	92	84	101

svTRH (C10-C40) in Soil						
Our Reference		224849-1	224849-5	224849-6	224849-7	224849-11
Your Reference	UNITS	BH201	BH203	BH203	BH203	BH205
Depth		0.12-0.2	0.12-0.2	0.4-0.5	0.6-0.95	0.12-0.2
Date Sampled		22/08/2019	23/08/2019	23/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	30/08/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	85	84	82	82	81

svTRH (C10-C40) in Soil						
Our Reference		224849-12	224849-14	224849-18	224849-19	224849-24
Your Reference	UNITS	BH205	BH205	BH207	BH207	BH209
Depth		0.2-0.4	1.2-1.4	0.12-0.2	0.5-0.95	0-0.2
Date Sampled		23/08/2019	23/08/2019	23/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	160
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	130
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	110
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	250
Surrogate o-Terphenyl	%	85	84	82	82	87

svTRH (C10-C40) in Soil						
Our Reference		224849-25	224849-30	224849-31	224849-32	224849-37
Your Reference	UNITS	BH209	BH211	BH211	BH211	BH213
Depth		0.3-0.5	0-0.2	0.5-0.75	1.3-1.5	0-0.2
Date Sampled		23/08/2019	22/08/2019	22/08/2019	22/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	84	84	84	84	84

svTRH (C10-C40) in Soil						
Our Reference		224849-38	224849-39	224849-40	224849-46	224849-49
Your Reference	UNITS	BH213	BH213	BH213	BH215	BH215
Depth		0.3-0.5	1.2-1.4	1.4-1.9	0-0.2	1.5-1.95
Date Sampled		21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	83	84	84	83	82

svTRH (C10-C40) in Soil						
Our Reference		224849-56	224849-57	224849-64	224849-65	224849-66
Your Reference	UNITS	BH217	BH217	BH219	BH219	BH219
Depth		0-0.2	0.5-0.75	0-0.2	0.5-0.95	1.4-1.6
Date Sampled		23/08/2019	23/08/2019	22/08/2019	22/08/2019	22/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	130	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	150	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	150	<50	<50
Surrogate o-Terphenyl	%	83	82	89	83	84

svTRH (C10-C40) in Soil						
Our Reference		224849-69	224849-71	224849-74	224849-75	224849-76
Your Reference	UNITS	BH221	BH221	BH223	BH223	BH223
Depth		0-0.2	0.75-0.95	0-0.2	0.5-0.95	1.5-1.7
Date Sampled		21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
TRH C_{10} - C_{14}	mg/kg	83	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	250	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	350	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	95	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	95	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	460	<100	110	<100	<100
TRH >C_{34} -C_{40}	mg/kg	160	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	720	<50	110	<50	<50
Surrogate o-Terphenyl	%	111	84	85	82	86

svTRH (C10-C40) in Soil						
Our Reference		224849-77	224849-81	224849-82	224849-84	224849-87
Your Reference	UNITS	BH224	BH227	BH227	BH229	BH229
Depth		0-0.2	0-0.2	0.5-0.7	0-0.2	1.1-1.3
Date Sampled		22/08/2019	22/08/2019	22/08/2019	26/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	220	<100	200	<100
TRH C_{29} - C_{36}	mg/kg	<100	260	<100	290	<100
TRH >C_{10} -C_{16}	mg/kg	<50	79	<50	57	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	79	<50	57	<50
TRH >C_{16} -C_{34}	mg/kg	<100	360	<100	370	<100
TRH >C_{34} -C_{40}	mg/kg	<100	130	<100	200	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	570	<50	620	<50
Surrogate o-Terphenyl	%	86	103	83	97	83

svTRH (C10-C40) in Soil						
Our Reference		224849-88	224849-92	224849-97	224849-98	224849-99
Your Reference	UNITS	BH229	BH232	BH232	BH233	BH233
Depth		1.3-1.5	0-0.2	1.2-1.4	0-0.2	0.3-0.4
Date Sampled		26/08/2019	23/08/2019	23/08/2019	26/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	170	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	180	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	64	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	64	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	260	140
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	110	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	440	140
Surrogate o-Terphenyl	%	83	87	84	104	85

svTRH (C10-C40) in Soil						
Our Reference		224849-107	224849-108	224849-109	224849-110	224849-115
Your Reference	UNITS	BH236	BH236	BH236	BH237	BH240
Depth		0-0.2	0.5-0.7	1.1-1.3	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	22/08/2019	22/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	59	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	120	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	57	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	57	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	150	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	210	<50
Surrogate o-Terphenyl	%	86	86	84	89	84

svTRH (C10-C40) in Soil				
Our Reference		224849-116	224849-119	224849-120
Your Reference	UNITS	BH240	DUPAM3	DUPAM4
Depth		0.4-0.6	-	-
Date Sampled		26/08/2019	22/08/2019	22/08/2019
Type of sample		Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	73
TRH C_{15} - C_{28}	mg/kg	<100	<100	390
TRH C_{29} - C_{36}	mg/kg	<100	<100	460
TRH >C_{10} -C_{16}	mg/kg	<50	<50	130
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	130
TRH >C_{16} -C_{34}	mg/kg	<100	<100	650
TRH >C_{34} -C_{40}	mg/kg	<100	<100	220
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	1,000
Surrogate o-Terphenyl	%	85	84	114

PAHs in Soil						
Our Reference		224849-1	224849-5	224849-6	224849-7	224849-11
Your Reference	UNITS	BH201	BH203	BH203	BH203	BH205
Depth		0.12-0.2	0.12-0.2	0.4-0.5	0.6-0.95	0.12-0.2
Date Sampled		22/08/2019	23/08/2019	23/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.1	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.66	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	112	75	81	75	74

PAHs in Soil						
Our Reference		224849-12	224849-14	224849-18	224849-19	224849-24
Your Reference	UNITS	BH205	BH205	BH207	BH207	BH209
Depth		0.2-0.4	1.2-1.4	0.12-0.2	0.5-0.95	0-0.2
Date Sampled		23/08/2019	23/08/2019	23/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	0.08
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	0.4
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	76	76	72	97	81

PAHs in Soil						
Our Reference		224849-25	224849-30	224849-31	224849-32	224849-37
Your Reference	UNITS	BH209	BH211	BH211	BH211	BH213
Depth		0.3-0.5	0-0.2	0.5-0.75	1.3-1.5	0-0.2
Date Sampled		23/08/2019	22/08/2019	22/08/2019	22/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	83	86	86	76	83

PAHs in Soil						
Our Reference		224849-38	224849-39	224849-40	224849-46	224849-49
Your Reference	UNITS	BH213	BH213	BH213	BH215	BH215
Depth		0.3-0.5	1.2-1.4	1.4-1.9	0-0.2	1.5-1.95
Date Sampled		21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.2	1.6	<0.1	0.1	<0.1
Anthracene	mg/kg	<0.1	0.6	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.5	3.4	<0.1	0.3	<0.1
Pyrene	mg/kg	0.5	3.2	<0.1	0.3	<0.1
Benzo(a)anthracene	mg/kg	0.2	1.3	<0.1	0.1	<0.1
Chrysene	mg/kg	0.3	1.1	<0.1	0.2	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.4	2.4	<0.2	0.3	<0.2
Benzo(a)pyrene	mg/kg	0.3	1.6	<0.05	0.2	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2	0.8	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2	1.2	<0.1	0.1	<0.1
Total +ve PAH's	mg/kg	2.6	18	<0.05	1.5	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	2.0	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	2.1	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	2.1	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	74	83	104	74	78

PAHs in Soil						
Our Reference		224849-56	224849-57	224849-64	224849-65	224849-66
Your Reference	UNITS	BH217	BH217	BH219	BH219	BH219
Depth		0-0.2	0.5-0.75	0-0.2	0.5-0.95	1.4-1.6
Date Sampled		23/08/2019	23/08/2019	22/08/2019	22/08/2019	22/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.4	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.2	1.1	<0.1	0.4	<0.1
Pyrene	mg/kg	0.1	1.0	<0.1	0.4	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.5	<0.1	0.4	<0.1
Chrysene	mg/kg	0.1	0.5	<0.1	0.4	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	1	<0.2	0.8	<0.2
Benzo(a)pyrene	mg/kg	0.08	0.63	<0.05	0.4	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.4	<0.1	0.3	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.6	<0.1	0.3	<0.1
Total +ve PAH's	mg/kg	0.5	6.3	<0.05	3.5	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	0.8	<0.5	0.6	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	0.9	<0.5	0.7	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	0.9	<0.5	0.7	<0.5
Surrogate p-Terphenyl-d14	%	76	82	80	76	67

PAHs in Soil						
Our Reference		224849-69	224849-71	224849-74	224849-75	224849-76
Your Reference	UNITS	BH221	BH221	BH223	BH223	BH223
Depth		0-0.2	0.75-0.95	0-0.2	0.5-0.95	1.5-1.7
Date Sampled		21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.2	0.3	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.8	0.4	<0.1
Pyrene	mg/kg	<0.1	<0.1	0.8	0.4	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.4	0.2	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.4	0.2	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	0.8	0.5	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.5	0.3	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.3	0.2	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.5	0.2	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	4.8	2.8	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	0.7	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	0.7	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	0.8	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	89	72	84	80	74

PAHs in Soil						
Our Reference		224849-77	224849-81	224849-82	224849-84	224849-87
Your Reference	UNITS	BH224	BH227	BH227	BH229	BH229
Depth		0-0.2	0-0.2	0.5-0.7	0-0.2	1.1-1.3
Date Sampled		22/08/2019	22/08/2019	22/08/2019	26/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.2	<0.1	<0.1	<0.1	0.8
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Fluoranthene	mg/kg	0.4	<0.1	<0.1	0.3	1.3
Pyrene	mg/kg	0.4	<0.1	<0.1	0.3	1.1
Benzo(a)anthracene	mg/kg	0.2	<0.1	<0.1	0.2	0.6
Chrysene	mg/kg	0.2	<0.1	<0.1	0.2	0.7
Benzo(b,j+k)fluoranthene	mg/kg	0.4	<0.2	<0.2	0.4	1
Benzo(a)pyrene	mg/kg	0.2	<0.05	<0.05	0.2	0.58
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.1	<0.1	0.2	0.3
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2	<0.1	<0.1	0.3	0.4
Total +ve PAH's	mg/kg	2.2	<0.05	<0.05	2.0	7.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	0.8
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	0.8
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	0.9
Surrogate p-Terphenyl-d14	%	75	89	71	81	77

PAHs in Soil						
Our Reference		224849-88	224849-92	224849-97	224849-98	224849-99
Your Reference	UNITS	BH229	BH232	BH232	BH233	BH233
Depth		1.3-1.5	0-0.2	1.2-1.4	0-0.2	0.3-0.4
Date Sampled		26/08/2019	23/08/2019	23/08/2019	26/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.9
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	2.6
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	2.3
Phenanthrene	mg/kg	0.2	<0.1	<0.1	0.2	12
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	4.4
Fluoranthene	mg/kg	0.4	<0.1	<0.1	0.4	7.6
Pyrene	mg/kg	0.4	<0.1	<0.1	0.4	9.7
Benzo(a)anthracene	mg/kg	0.2	<0.1	<0.1	0.2	4.0
Chrysene	mg/kg	0.2	<0.1	<0.1	0.2	4.6
Benzo(b,j+k)fluoranthene	mg/kg	0.3	<0.2	<0.2	0.4	5.5
Benzo(a)pyrene	mg/kg	0.2	<0.05	<0.05	0.2	3.8
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.2	1.5
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.1	<0.1	<0.1	0.2	2.2
Total +ve PAH's	mg/kg	2.1	<0.05	<0.05	2.3	62
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	5.0
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	5.0
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	5.1
Surrogate p-Terphenyl-d14	%	74	80	73	86	78

PAHs in Soil						
Our Reference		224849-107	224849-108	224849-109	224849-110	224849-115
Your Reference	UNITS	BH236	BH236	BH236	BH237	BH240
Depth		0-0.2	0.5-0.7	1.1-1.3	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	22/08/2019	22/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.2	<0.1	<0.1	0.1
Pyrene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.06	0.1	<0.05	<0.05	0.06
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.06	0.58	<0.05	<0.05	0.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	80	77	77	72	90

PAHs in Soil					
Our Reference		224849-116	224849-119	224849-120	224849-135
Your Reference	UNITS	BH240	DUPAM3	DUPAM4	BH217 - [TRIPLICATE]
Depth		0.4-0.6	-	-	0-0.2
Date Sampled		26/08/2019	22/08/2019	22/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	0.2
Pyrene	mg/kg	<0.1	<0.1	<0.1	0.2
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.1
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	0.65
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	72	76	80	113

Organochlorine Pesticides in soil						
Our Reference		224849-1	224849-5	224849-11	224849-12	224849-19
Your Reference	UNITS	BH201	BH203	BH205	BH205	BH207
Depth		0.12-0.2	0.12-0.2	0.12-0.2	0.2-0.4	0.5-0.95
Date Sampled		22/08/2019	23/08/2019	23/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	129	85	91	85	87

Organochlorine Pesticides in soil						
Our Reference		224849-24	224849-25	224849-30	224849-31	224849-37
Your Reference	UNITS	BH209	BH209	BH211	BH211	BH213
Depth		0-0.2	0.3-0.5	0-0.2	0.5-0.75	0-0.2
Date Sampled		23/08/2019	23/08/2019	22/08/2019	22/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Surrogate TCMX	%	80	72	78	83	95

Organochlorine Pesticides in soil						
Our Reference		224849-38	224849-46	224849-49	224849-56	224849-57
Your Reference	UNITS	BH213	BH215	BH215	BH217	BH217
Depth		0.3-0.5	0-0.2	1.5-1.95	0-0.2	0.5-0.75
Date Sampled		21/08/2019	21/08/2019	21/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	80	83	93	84	88

Organochlorine Pesticides in soil						
Our Reference		224849-64	224849-65	224849-69	224849-74	224849-77
Your Reference	UNITS	BH219	BH219	BH221	BH223	BH224
Depth		0-0.2	0.5-0.95	0-0.2	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	21/08/2019	21/08/2019	22/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	86	98	84	89

Organochlorine Pesticides in soil						
Our Reference		224849-81	224849-82	224849-84	224849-92	224849-98
Your Reference	UNITS	BH227	BH227	BH229	BH232	BH233
Depth		0-0.2	0.5-0.7	0-0.2	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	26/08/2019	23/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	88	86	89	90	99

Organochlorine Pesticides in soil						
Our Reference		224849-107	224849-108	224849-109	224849-110	224849-115
Your Reference	UNITS	BH236	BH236	BH236	BH237	BH240
Depth		0-0.2	0.5-0.7	1.1-1.3	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	22/08/2019	22/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	94	95	82	101

Organochlorine Pesticides in soil				
Our Reference		224849-116	224849-119	224849-120
Your Reference	UNITS	BH240	DUPAM3	DUPAM4
Depth		0.4-0.6	-	-
Date Sampled		26/08/2019	22/08/2019	22/08/2019
Type of sample		Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019
HCB	mg/kg	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	87	93	101

Organophosphorus Pesticides						
Our Reference		224849-1	224849-5	224849-11	224849-12	224849-19
Your Reference	UNITS	BH201	BH203	BH205	BH205	BH207
Depth		0.12-0.2	0.12-0.2	0.12-0.2	0.2-0.4	0.5-0.95
Date Sampled		22/08/2019	23/08/2019	23/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	129	85	91	85	87

Organophosphorus Pesticides						
Our Reference		224849-24	224849-25	224849-30	224849-31	224849-37
Your Reference	UNITS	BH209	BH209	BH211	BH211	BH213
Depth		0-0.2	0.3-0.5	0-0.2	0.5-0.75	0-0.2
Date Sampled		23/08/2019	23/08/2019	22/08/2019	22/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	80	72	78	83	95

Organophosphorus Pesticides						
Our Reference		224849-38	224849-46	224849-49	224849-56	224849-57
Your Reference	UNITS	BH213	BH215	BH215	BH217	BH217
Depth		0.3-0.5	0-0.2	1.5-1.95	0-0.2	0.5-0.75
Date Sampled		21/08/2019	21/08/2019	21/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	80	83	93	84	88

Organophosphorus Pesticides						
Our Reference		224849-64	224849-65	224849-69	224849-74	224849-77
Your Reference	UNITS	BH219	BH219	BH221	BH223	BH224
Depth		0-0.2	0.5-0.95	0-0.2	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	21/08/2019	21/08/2019	22/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	86	98	84	89

Organophosphorus Pesticides						
Our Reference		224849-81	224849-82	224849-84	224849-92	224849-98
Your Reference	UNITS	BH227	BH227	BH229	BH232	BH233
Depth		0-0.2	0.5-0.7	0-0.2	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	26/08/2019	23/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	88	86	89	90	99

Organophosphorus Pesticides						
Our Reference		224849-107	224849-108	224849-109	224849-110	224849-115
Your Reference	UNITS	BH236	BH236	BH236	BH237	BH240
Depth		0-0.2	0.5-0.7	1.1-1.3	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	22/08/2019	22/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	94	95	82	101

Organophosphorus Pesticides				
Our Reference		224849-116	224849-119	224849-120
Your Reference	UNITS	BH240	DUPAM3	DUPAM4
Depth		0.4-0.6	-	-
Date Sampled		26/08/2019	22/08/2019	22/08/2019
Type of sample		Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	87	93	101

PCBs in Soil						
Our Reference		224849-1	224849-5	224849-11	224849-12	224849-19
Your Reference	UNITS	BH201	BH203	BH205	BH205	BH207
Depth		0.12-0.2	0.12-0.2	0.12-0.2	0.2-0.4	0.5-0.95
Date Sampled		22/08/2019	23/08/2019	23/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	129	85	91	85	87

PCBs in Soil						
Our Reference		224849-24	224849-25	224849-30	224849-31	224849-37
Your Reference	UNITS	BH209	BH209	BH211	BH211	BH213
Depth		0-0.2	0.3-0.5	0-0.2	0.5-0.75	0-0.2
Date Sampled		23/08/2019	23/08/2019	22/08/2019	22/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	80	72	78	83	95

PCBs in Soil						
Our Reference		224849-38	224849-46	224849-49	224849-56	224849-57
Your Reference	UNITS	BH213	BH215	BH215	BH217	BH217
Depth		0.3-0.5	0-0.2	1.5-1.95	0-0.2	0.5-0.75
Date Sampled		21/08/2019	21/08/2019	21/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	80	83	93	84	88

PCBs in Soil						
Our Reference		224849-64	224849-65	224849-69	224849-74	224849-77
Your Reference	UNITS	BH219	BH219	BH221	BH223	BH224
Depth		0-0.2	0.5-0.95	0-0.2	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	21/08/2019	21/08/2019	22/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	86	98	84	89

PCBs in Soil						
Our Reference		224849-81	224849-82	224849-84	224849-92	224849-98
Your Reference	UNITS	BH227	BH227	BH229	BH232	BH233
Depth		0-0.2	0.5-0.7	0-0.2	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	26/08/2019	23/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	88	86	89	90	99

PCBs in Soil						
Our Reference		224849-107	224849-108	224849-109	224849-110	224849-115
Your Reference	UNITS	BH236	BH236	BH236	BH237	BH240
Depth		0-0.2	0.5-0.7	1.1-1.3	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	22/08/2019	22/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	94	95	82	101

PCBs in Soil				
Our Reference		224849-116	224849-119	224849-120
Your Reference	UNITS	BH240	DUPAM3	DUPAM4
Depth		0.4-0.6	-	-
Date Sampled		26/08/2019	22/08/2019	22/08/2019
Type of sample		Soil	Soil	Soil
Date extracted	-	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	87	93	101

Acid Extractable metals in soil						
Our Reference		224849-1	224849-5	224849-6	224849-7	224849-11
Your Reference	UNITS	BH201	BH203	BH203	BH203	BH205
Depth		0.12-0.2	0.12-0.2	0.4-0.5	0.6-0.95	0.12-0.2
Date Sampled		22/08/2019	23/08/2019	23/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Arsenic	mg/kg	<4	<4	9	<4	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	20	8	27	8	4
Copper	mg/kg	36	6	1	<1	8
Lead	mg/kg	29	4	10	3	1
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	15	2	2	2	1
Zinc	mg/kg	68	4	4	<1	4

Acid Extractable metals in soil						
Our Reference		224849-12	224849-14	224849-18	224849-19	224849-24
Your Reference	UNITS	BH205	BH205	BH207	BH207	BH209
Depth		0.2-0.4	1.2-1.4	0.12-0.2	0.5-0.95	0-0.2
Date Sampled		23/08/2019	23/08/2019	23/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	11	11	4	11	12
Copper	mg/kg	2	<1	12	<1	9
Lead	mg/kg	10	6	1	9	28
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	2	1	<1	4
Zinc	mg/kg	3	3	4	2	28

Acid Extractable metals in soil						
Our Reference		224849-25	224849-30	224849-31	224849-32	224849-37
Your Reference	UNITS	BH209	BH211	BH211	BH211	BH213
Depth		0.3-0.5	0-0.2	0.5-0.75	1.3-1.5	0-0.2
Date Sampled		23/08/2019	22/08/2019	22/08/2019	22/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Arsenic	mg/kg	6	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	15	11	17	7	6
Copper	mg/kg	3	6	2	1	5
Lead	mg/kg	15	18	9	3	11
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	0.5
Nickel	mg/kg	2	2	2	<1	3
Zinc	mg/kg	10	20	10	5	21

Acid Extractable metals in soil						
Our Reference		224849-38	224849-39	224849-40	224849-46	224849-49
Your Reference	UNITS	BH213	BH213	BH213	BH215	BH215
Depth		0.3-0.5	1.2-1.4	1.4-1.9	0-0.2	1.5-1.95
Date Sampled		21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	6	6	33	5	21
Copper	mg/kg	3	5	<1	6	<1
Lead	mg/kg	26	32	2	26	12
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	3	<1	3	1
Zinc	mg/kg	23	29	5	31	3

Acid Extractable metals in soil						
Our Reference		224849-56	224849-57	224849-64	224849-65	224849-66
Your Reference	UNITS	BH217	BH217	BH219	BH219	BH219
Depth		0-0.2	0.5-0.75	0-0.2	0.5-0.95	1.4-1.6
Date Sampled		23/08/2019	23/08/2019	22/08/2019	22/08/2019	22/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	3	12	7	11	<1
Copper	mg/kg	4	8	12	13	<1
Lead	mg/kg	29	32	7	21	<1
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	10	5	7	1
Zinc	mg/kg	24	34	50	55	1

Acid Extractable metals in soil						
Our Reference		224849-69	224849-71	224849-74	224849-75	224849-76
Your Reference	UNITS	BH221	BH221	BH223	BH223	BH223
Depth		0-0.2	0.75-0.95	0-0.2	0.5-0.95	1.5-1.7
Date Sampled		21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	1	1	7	10	<1
Copper	mg/kg	6	4	14	16	<1
Lead	mg/kg	2	4	21	52	<1
Mercury	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Nickel	mg/kg	1	<1	4	11	<1
Zinc	mg/kg	31	7	46	200	<1

Acid Extractable metals in soil						
Our Reference		224849-77	224849-81	224849-82	224849-84	224849-87
Your Reference	UNITS	BH224	BH227	BH227	BH229	BH229
Depth		0-0.2	0-0.2	0.5-0.7	0-0.2	1.1-1.3
Date Sampled		22/08/2019	22/08/2019	22/08/2019	26/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Arsenic	mg/kg	<4	<4	<4	4	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	5	16	<1	12	12
Copper	mg/kg	8	9	<1	19	3
Lead	mg/kg	26	9	<1	22	16
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	2	<1	3	3
Zinc	mg/kg	62	69	2	86	38

Acid Extractable metals in soil						
Our Reference		224849-88	224849-92	224849-97	224849-98	224849-99
Your Reference	UNITS	BH229	BH232	BH232	BH233	BH233
Depth		1.3-1.5	0-0.2	1.2-1.4	0-0.2	0.3-0.4
Date Sampled		26/08/2019	23/08/2019	23/08/2019	26/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	6	7	7	11
Copper	mg/kg	1	11	<1	16	16
Lead	mg/kg	8	7	4	42	61
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	4	4	4	5
Zinc	mg/kg	25	44	4	88	97

Acid Extractable metals in soil						
Our Reference		224849-107	224849-108	224849-109	224849-110	224849-115
Your Reference	UNITS	BH236	BH236	BH236	BH237	BH240
Depth		0-0.2	0.5-0.7	1.1-1.3	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	22/08/2019	22/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Arsenic	mg/kg	<4	<4	<4	6	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	7	2	48	5
Copper	mg/kg	11	18	<1	2	3
Lead	mg/kg	10	22	3	6	13
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	2	<1	<1	2
Zinc	mg/kg	45	110	8	13	18

Acid Extractable metals in soil						
Our Reference		224849-116	224849-119	224849-120	224849-125	224849-126
Your Reference	UNITS	BH240	DUPAM3	DUPAM4	TB1	TB2
Depth		0.4-0.6	-	-	-	-
Date Sampled		26/08/2019	22/08/2019	22/08/2019	21/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Arsenic	mg/kg	<4	<4	<4	<4	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	9	3	2	2
Copper	mg/kg	<1	6	10	<1	<1
Lead	mg/kg	7	16	8	<1	<1
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	2	1	<1	<1
Zinc	mg/kg	17	22	65	1	1

Acid Extractable metals in soil		
Our Reference		224849-134
Your Reference	UNITS	BH201 - [TRIPLICATE]
Depth		0.12-0.2
Date Sampled		22/08/2019
Type of sample		Soil
Date prepared	-	29/08/2019
Date analysed	-	29/08/2019
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	16
Copper	mg/kg	20
Lead	mg/kg	28
Mercury	mg/kg	<0.1
Nickel	mg/kg	9
Zinc	mg/kg	60

Moisture						
Our Reference		224849-1	224849-5	224849-6	224849-7	224849-11
Your Reference	UNITS	BH201	BH203	BH203	BH203	BH205
Depth		0.12-0.2	0.12-0.2	0.4-0.5	0.6-0.95	0.12-0.2
Date Sampled		22/08/2019	23/08/2019	23/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
Moisture	%	9.3	12	15	16	14

Moisture						
Our Reference		224849-12	224849-14	224849-18	224849-19	224849-24
Your Reference	UNITS	BH205	BH205	BH207	BH207	BH209
Depth		0.2-0.4	1.2-1.4	0.12-0.2	0.5-0.95	0-0.2
Date Sampled		23/08/2019	23/08/2019	23/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
Moisture	%	16	10	10	16	10

Moisture						
Our Reference		224849-25	224849-30	224849-31	224849-32	224849-37
Your Reference	UNITS	BH209	BH211	BH211	BH211	BH213
Depth		0.3-0.5	0-0.2	0.5-0.75	1.3-1.5	0-0.2
Date Sampled		23/08/2019	22/08/2019	22/08/2019	22/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
Moisture	%	11	9.2	12	6.4	8.1

Moisture						
Our Reference		224849-38	224849-39	224849-40	224849-46	224849-49
Your Reference	UNITS	BH213	BH213	BH213	BH215	BH215
Depth		0.3-0.5	1.2-1.4	1.4-1.9	0-0.2	1.5-1.95
Date Sampled		21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
Moisture	%	13	9.5	8.5	12	16

Moisture						
Our Reference		224849-56	224849-57	224849-64	224849-65	224849-66
Your Reference	UNITS	BH217	BH217	BH219	BH219	BH219
Depth		0-0.2	0.5-0.75	0-0.2	0.5-0.95	1.4-1.6
Date Sampled		23/08/2019	23/08/2019	22/08/2019	22/08/2019	22/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
Moisture	%	6.5	11	16	8.5	2.7

Moisture						
Our Reference		224849-69	224849-71	224849-74	224849-75	224849-76
Your Reference	UNITS	BH221	BH221	BH223	BH223	BH223
Depth		0-0.2	0.75-0.95	0-0.2	0.5-0.95	1.5-1.7
Date Sampled		21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
Moisture	%	37	3.7	8.3	8.9	4.3

Moisture						
Our Reference		224849-77	224849-81	224849-82	224849-84	224849-87
Your Reference	UNITS	BH224	BH227	BH227	BH229	BH229
Depth		0-0.2	0-0.2	0.5-0.7	0-0.2	1.1-1.3
Date Sampled		22/08/2019	22/08/2019	22/08/2019	26/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
Moisture	%	3.6	25	2.5	25	6.1

Moisture						
Our Reference		224849-88	224849-92	224849-97	224849-98	224849-99
Your Reference	UNITS	BH229	BH232	BH232	BH233	BH233
Depth		1.3-1.5	0-0.2	1.2-1.4	0-0.2	0.3-0.4
Date Sampled		26/08/2019	23/08/2019	23/08/2019	26/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
Moisture	%	3.8	10	7.1	21	13

Moisture						
Our Reference		224849-107	224849-108	224849-109	224849-110	224849-115
Your Reference	UNITS	BH236	BH236	BH236	BH237	BH240
Depth		0-0.2	0.5-0.7	1.1-1.3	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	22/08/2019	22/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
Moisture	%	7.6	5.9	7.8	15	8.9

Moisture						
Our Reference		224849-116	224849-119	224849-120	224849-125	224849-126
Your Reference	UNITS	BH240	DUPAM3	DUPAM4	TB1	TB2
Depth		0.4-0.6	-	-	-	-
Date Sampled		26/08/2019	22/08/2019	22/08/2019	21/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019	30/08/2019	30/08/2019
Moisture	%	5.1	9.5	34	0.1	5.8

Asbestos ID - soils NEPM - ASB-001						
Our Reference		224849-1	224849-4	224849-5	224849-8	224849-12
Your Reference	UNITS	BH201	BH202	BH203	BH204	BH205
Depth		0.12-0.2	0.12-0.2	0.12-0.2	0.12-0.2	0.2-0.4
Date Sampled		22/08/2019	23/08/2019	23/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	02/09/2019	02/09/2019	02/09/2019	02/09/2019	02/09/2019
Sample mass tested	g	788.23	653.34	680.83	526.36	503.13
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Beige clayey soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		224849-16	224849-19	224849-22	224849-24	224849-29
Your Reference	UNITS	BH206	BH207	BH208	BH209	BH210
Depth		0.15-0.5	0.5-0.95	0.3-0.5	0-0.2	0.3-0.5
Date Sampled		23/08/2019	23/08/2019	23/08/2019	23/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	02/09/2019	02/09/2019	02/09/2019	02/09/2019	02/09/2019
Sample mass tested	g	489.78	586.98	688.4	635.02	731.6
Sample Description	-	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		224849-30	224849-31	224849-33	224849-34	224849-37
Your Reference	UNITS	BH211	BH211	BH212	BH212	BH213
Depth		0-0.2	0.5-0.75	0-0.2	0.3-0.5	0-0.2
Date Sampled		22/08/2019	22/08/2019	21/08/2019	21/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	02/09/2019	02/09/2019	02/09/2019	02/09/2019	02/09/2019
Sample mass tested	g	554.72	741.53	768.34	573.57	698.34
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown clayey soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	Chrysotile	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	0.0134	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	0.0018	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		224849-38	224849-39	224849-42	224849-43	224849-44
Your Reference	UNITS	BH213	BH213	BH214	BH214	BH214
Depth		0.3-0.5	1.2-1.4	0-0.2	0.5-0.95	1.5-1.95
Date Sampled		21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	02/09/2019	02/09/2019	02/09/2019	02/09/2019	02/09/2019
Sample mass tested	g	652.55	725.46	470.1	646.84	555.36
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	Chrysotile asbestos detected Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	0.1143	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	See Above	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	0.0829	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	0.0114	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		224849-46	224849-49	224849-51	224849-52	224849-56
Your Reference	UNITS	BH215	BH215	BH216	BH216	BH217
Depth		0-0.2	1.5-1.95	0-0.2	0.3-0.5	0-0.2
Date Sampled		21/08/2019	21/08/2019	21/08/2019	21/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	02/09/2019	02/09/2019	02/09/2019	02/09/2019	02/09/2019
Sample mass tested	g	535.27	638.39	626.27	604.4	610.49
Sample Description	-	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	1.7103
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	See Above
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	1.0441
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	0.1710

Asbestos ID - soils NEPM - ASB-001						
Our Reference		224849-57	224849-60	224849-63	224849-64	224849-65
Your Reference	UNITS	BH217	BH218	BH218	BH219	BH219
Depth		0.5-0.75	0-0.2	1.5-1.95	0-0.2	0.5-0.95
Date Sampled		23/08/2019	23/08/2019	23/08/2019	22/08/2019	22/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	02/09/2019	02/09/2019	02/09/2019	02/09/2019	02/09/2019
Sample mass tested	g	536.67	715.01	515.42	590.54	661.82
Sample Description	-	Brown sandy soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		224849-67	224849-69	224849-72	224849-74	224849-75
Your Reference	UNITS	BH220	BH221	BH222	BH223	BH223
Depth		0-0.1	0-0.2	0-0.2	0-0.2	0.5-0.95
Date Sampled		21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	02/09/2019	02/09/2019	02/09/2019	02/09/2019	02/09/2019
Sample mass tested	g	106.95	139.18	549.37	661.92	722.25
Sample Description	-	Brown fibrous mulch	Brown fibrous mulch	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		224849-77	224849-78	224849-80	224849-81	224849-83
Your Reference	UNITS	BH224	BH225	BH226	BH227	BH228
Depth		0-0.2	0.03-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	02/09/2019	02/09/2019	02/09/2019	02/09/2019	02/09/2019
Sample mass tested	g	622.53	725.03	230.11	181.26	195.5
Sample Description	-	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		224849-84	224849-87	224849-89	224849-90	224849-91
Your Reference	UNITS	BH229	BH229	BH230	BH230	BH231
Depth		0-0.2	1.1-1.3	0-0.2	0.2-0.4	0-0.2
Date Sampled		26/08/2019	26/08/2019	23/08/2019	23/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	02/09/2019	02/09/2019	02/09/2019	02/09/2019	02/09/2019
Sample mass tested	g	236.22	552.55	722.17	695.65	207.49
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		224849-92	224849-98	224849-99	224849-101	224849-102
Your Reference	UNITS	BH232	BH233	BH233	BH234	BH234
Depth		0-0.2	0-0.2	0.3-0.4	0-0.2	0.2-0.4
Date Sampled		23/08/2019	26/08/2019	26/08/2019	23/08/2019	23/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	02/09/2019	02/09/2019	02/09/2019	02/09/2019	02/09/2019
Sample mass tested	g	720.9	150.14	450.91	620.91	704.3
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		224849-105	224849-107	224849-108	224849-110	224849-112
Your Reference	UNITS	BH235	BH236	BH236	BH237	BH238
Depth		0-0.2	0-0.2	0.5-0.7	0-0.2	0-0.2
Date Sampled		26/08/2019	22/08/2019	22/08/2019	22/08/2019	22/08/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	02/09/2019	02/09/2019	02/09/2019	02/09/2019	02/09/2019
Sample mass tested	g	285.19	413.7	535.54	603.29	585.04
Sample Description	-	Brown fine-grained soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001			
Our Reference		224849-113	224849-115
Your Reference	UNITS	BH239	BH240
Depth		0-0.2	0-0.2
Date Sampled		26/08/2019	26/08/2019
Type of sample		Soil	Soil
Date analysed	-	02/09/2019	02/09/2019
Sample mass tested	g	317.36	1,034.78
Sample Description	-	Brown fine-grained soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–
FA and AF Estimation*	g	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001

Asbestos ID - materials					
Our Reference		224849-128	224849-129	224849-130	224849-131
Your Reference	UNITS	AMF1	AMF2	AMF3	AMF4
Depth		0.3-1.4	0-0.2	-	0.4-1.2
Date Sampled		21/08/2019	21/08/2019	22/08/2019	22/08/2019
Type of sample		Material	Material	Material	Material
Date analysed	-	29/08/2019	29/08/2019	29/08/2019	29/08/2019
Mass / Dimension of Sample	-	30x13x5mm	58x40x5mm	40x23x5mm	33x10x4mm
Sample Description	-	Grey fibre cement material	Grey fibrous matted material	Grey fibre cement material	Grey fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Crocidolite asbestos detected	Chrysotile asbestos detected Crocidolite asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected

Misc Inorg - Soil				
Our Reference		224849-30	224849-81	224849-115
Your Reference	UNITS	BH211	BH227	BH240
Depth		0-0.2	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil
Date prepared	-	29/08/2019	29/08/2019	29/08/2019
Date analysed	-	29/08/2019	29/08/2019	29/08/2019
pH 1:5 soil:water	pH Units	5.8	7.0	8.0

CEC				
Our Reference		224849-30	224849-81	224849-115
Your Reference	UNITS	BH211	BH227	BH240
Depth		0-0.2	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil
Date prepared	-	30/08/2019	30/08/2019	30/08/2019
Date analysed	-	30/08/2019	30/08/2019	30/08/2019
Exchangeable Ca	meq/100g	2.6	23	5.5
Exchangeable K	meq/100g	0.1	2.6	<0.1
Exchangeable Mg	meq/100g	0.48	5.3	0.35
Exchangeable Na	meq/100g	<0.1	0.46	<0.1
Cation Exchange Capacity	meq/100g	3.2	31	5.9

Clay 50-120g				
Our Reference		224849-30	224849-81	224849-115
Your Reference	UNITS	BH211	BH227	BH240
Depth		0-0.2	0-0.2	0-0.2
Date Sampled		22/08/2019	22/08/2019	26/08/2019
Type of sample		Soil	Soil	Soil
Date prepared	-	30/08/2019	30/08/2019	30/08/2019
Date analysed	-	02/09/2019	02/09/2019	02/09/2019
Clay in soils <2µm	% (w/w)	11	10	8

BTEX in Water		
Our Reference		224849-127
Your Reference	UNITS	FRAM1
Depth		-
Date Sampled		23/08/2019
Type of sample		Water
Date extracted	-	30/08/2019
Date analysed	-	31/08/2019
Benzene	µg/L	<1
Toluene	µg/L	1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Surrogate Dibromofluoromethane	%	101
Surrogate toluene-d8	%	95
Surrogate 4-BFB	%	96

Method ID	Methodology Summary
AS1289.3.6.3	Determination Particle Size Analysis using AS1289.3.6.3 and AS1289.3.6.1 and in house method INORG-107. Clay fraction at <2µm reported.
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-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-009	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.
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-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
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-7	224849-5
Date extracted	-			29/08/2019	1	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			29/08/2019	1	29/08/2019	29/08/2019		29/08/2019	29/08/2019
TRH C_6 - C_9	mg/kg	25	Org-016	<25	1	<25	<25	0	107	111
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	1	<25	<25	0	107	111
Benzene	mg/kg	0.2	Org-016	<0.2	1	<0.2	<0.2	0	93	91
Toluene	mg/kg	0.5	Org-016	<0.5	1	<0.5	<0.5	0	102	110
Ethylbenzene	mg/kg	1	Org-016	<1	1	<1	<1	0	116	121
m+p-xylene	mg/kg	2	Org-016	<2	1	<2	<2	0	112	116
o-Xylene	mg/kg	1	Org-016	<1	1	<1	<1	0	108	112
naphthalene	mg/kg	1	Org-014	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	87	1	121	128	6	112	99

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	224849-57
Date extracted	-			[NT]	25	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			[NT]	25	29/08/2019	29/08/2019		31/08/2019	31/08/2019
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	25	<25	<25	0	108	94
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	25	<25	<25	0	108	94
Benzene	mg/kg	0.2	Org-016	[NT]	25	<0.2	<0.2	0	72	69
Toluene	mg/kg	0.5	Org-016	[NT]	25	<0.5	<0.5	0	94	83
Ethylbenzene	mg/kg	1	Org-016	[NT]	25	<1	<1	0	125	106
m+p-xylene	mg/kg	2	Org-016	[NT]	25	<2	<2	0	125	106
o-Xylene	mg/kg	1	Org-016	[NT]	25	<1	<1	0	121	103
naphthalene	mg/kg	1	Org-014	[NT]	25	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	25	120	122	2	92	83

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	224849-108
Date extracted	-			[NT]	56	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			[NT]	56	31/08/2019	31/08/2019		31/08/2019	31/08/2019
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	56	<25	<25	0	96	94
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	56	<25	<25	0	96	94
Benzene	mg/kg	0.2	Org-016	[NT]	56	<0.2	<0.2	0	70	71
Toluene	mg/kg	0.5	Org-016	[NT]	56	<0.5	<0.5	0	82	81
Ethylbenzene	mg/kg	1	Org-016	[NT]	56	<1	<1	0	109	106
m+p-xylene	mg/kg	2	Org-016	[NT]	56	<2	<2	0	109	105
o-Xylene	mg/kg	1	Org-016	[NT]	56	<1	<1	0	105	101
naphthalene	mg/kg	1	Org-014	[NT]	56	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	56	96	86	11	83	82

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	74	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	74	31/08/2019	31/08/2019		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	74	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	74	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-016	[NT]	74	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-016	[NT]	74	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-016	[NT]	74	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-016	[NT]	74	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-016	[NT]	74	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-014	[NT]	74	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	74	94	86	9	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	92	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	92	31/08/2019	31/08/2019		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	92	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	92	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-016	[NT]	92	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-016	[NT]	92	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-016	[NT]	92	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-016	[NT]	92	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-016	[NT]	92	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-014	[NT]	92	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	92	102	99	3	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	107	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	107	31/08/2019	31/08/2019		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	107	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	107	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-016	[NT]	107	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-016	[NT]	107	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-016	[NT]	107	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-016	[NT]	107	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-016	[NT]	107	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-014	[NT]	107	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	107	101	102	1	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	224849-5
Date extracted	-			29/08/2019	1	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			29/08/2019	1	29/08/2019	29/08/2019		29/08/2019	29/08/2019
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	1	<50	<50	0	119	95
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	1	<100	<100	0	128	106
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	1	<100	<100	0	108	88
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	1	<50	<50	0	119	95
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	1	<100	<100	0	128	106
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	1	<100	<100	0	108	88
Surrogate o-Terphenyl	%		Org-003	83	1	85	85	0	130	84

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	224849-57
Date extracted	-			[NT]	25	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			[NT]	25	30/08/2019	30/08/2019		30/08/2019	30/08/2019
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	25	<50	<50	0	93	91
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	25	<100	<100	0	99	106
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	25	<100	<100	0	92	130
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	25	<50	<50	0	93	91
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	25	<100	<100	0	99	106
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	25	<100	<100	0	92	130
Surrogate o-Terphenyl	%		Org-003	[NT]	25	84	86	2	102	89

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	224849-108
Date extracted	-			[NT]	56	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			[NT]	56	30/08/2019	30/08/2019		30/08/2019	30/08/2019
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	56	<50	<50	0	86	78
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	56	<100	<100	0	76	96
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	56	<100	<100	0	78	78
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	56	<50	<50	0	86	78
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	56	<100	<100	0	76	96
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	56	<100	<100	0	78	78
Surrogate o-Terphenyl	%		Org-003	[NT]	56	83	83	0	104	100

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	74	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	74	30/08/2019	30/08/2019		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	74	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	74	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	74	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	74	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	74	110	110	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	74	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	74	85	85	0	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	92	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	92	30/08/2019	30/08/2019		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	92	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	92	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	92	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	92	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	92	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	92	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	92	87	86	1	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	107	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	107	30/08/2019	30/08/2019		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	107	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	107	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	107	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	107	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	107	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	107	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	107	86	87	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	224849-5
Date extracted	-			29/08/2019	1	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			29/08/2019	1	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Naphthalene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	104	109
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	116	112
Phenanthrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	106	118
Anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	108	114
Pyrene	mg/kg	0.1	Org-012	<0.1	1	0.1	0.1	0	110	108
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	98	104
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	1	0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	1	0.1	0.09	11	98	99
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	1	0.2	0.2	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	90	1	112	107	5	82	80

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	224849-57
Date extracted	-			[NT]	25	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			[NT]	25	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Naphthalene	mg/kg	0.1	Org-012	[NT]	25	<0.1	<0.1	0	112	110
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	25	<0.1	<0.1	0	118	110
Phenanthrene	mg/kg	0.1	Org-012	[NT]	25	<0.1	<0.1	0	116	102
Anthracene	mg/kg	0.1	Org-012	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	25	<0.1	<0.1	0	114	88
Pyrene	mg/kg	0.1	Org-012	[NT]	25	<0.1	<0.1	0	110	73
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	25	<0.1	<0.1	0	108	98
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	[NT]	25	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	25	<0.05	<0.05	0	102	89
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	25	83	90	8	80	78

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	224849-108
Date extracted	-			[NT]	56	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			[NT]	56	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Naphthalene	mg/kg	0.1	Org-012	[NT]	56	<0.1	<0.1	0	114	99
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	56	<0.1	0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	56	<0.1	<0.1	0	120	108
Phenanthrene	mg/kg	0.1	Org-012	[NT]	56	<0.1	0.3	100	134	134
Anthracene	mg/kg	0.1	Org-012	[NT]	56	<0.1	0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	56	0.2	1.1	138	106	98
Pyrene	mg/kg	0.1	Org-012	[NT]	56	0.1	1.2	169	96	87
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	56	<0.1	0.8	156	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	56	0.1	0.7	150	108	99
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	[NT]	56	<0.2	1	133	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	56	0.08	0.69	158	104	92
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	56	<0.1	0.3	100	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	56	<0.1	0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	56	<0.1	0.4	120	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	56	76	87	13	73	77

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	74	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	74	29/08/2019	29/08/2019		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012	[NT]	74	0.2	0.1	67	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	74	0.8	0.6	29	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012	[NT]	74	0.8	0.5	46	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	74	0.4	0.2	67	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	74	0.4	0.3	29	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	[NT]	74	0.8	0.6	29	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	74	0.5	0.4	22	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	74	0.3	0.2	40	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	74	0.5	0.4	22	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	74	84	77	9	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	92	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	92	29/08/2019	29/08/2019		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	[NT]	92	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	92	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	92	80	90	12	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	107	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	107	29/08/2019	29/08/2019		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	[NT]	107	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	107	0.06	0.06	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	107	80	73	9	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	224849-5
Date extracted	-			29/08/2019	1	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			29/08/2019	1	29/08/2019	29/08/2019		29/08/2019	29/08/2019
HCB	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	124	124
gamma-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	116	114
Heptachlor	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	112	132
delta-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	130	119
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	128	124
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	108	108
Dieldrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	122	102
Endrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	78	92
pp-DDD	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	102	105
Endosulfan II	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	106	94
Methoxychlor	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	95	1	129	87	39	85	85

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	224849-57
Date extracted	-			[NT]	25	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			[NT]	25	29/08/2019	29/08/2019		29/08/2019	29/08/2019
HCB	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	126	125
gamma-BHC	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	130	129
Heptachlor	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	116	110
delta-BHC	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	116	135
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	124	118
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	110	97
Dieldrin	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	120	97
Endrin	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	96	83
pp-DDD	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	106	100
Endosulfan II	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	70	79
Methoxychlor	mg/kg	0.1	Org-005	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	25	72	80	11	89	82

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	224849-108
Date extracted	-			[NT]	56	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			[NT]	56	29/08/2019	29/08/2019		29/08/2019	29/08/2019
HCB	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	116	103
gamma-BHC	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	128	108
Heptachlor	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	94	72
delta-BHC	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	136	122
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	116	108
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	96	95
Dieldrin	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	98	93
Endrin	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	78	64
pp-DDD	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	92	83
Endosulfan II	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	112	92
Methoxychlor	mg/kg	0.1	Org-005	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	56	84	82	2	92	83

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	74	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	74	29/08/2019	29/08/2019		[NT]	[NT]
HCB	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-005	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	74	84	84	0	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	92	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	92	29/08/2019	29/08/2019		[NT]	[NT]
HCB	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-005	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	92	90	98	9	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	107	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	107	29/08/2019	29/08/2019		[NT]	[NT]
HCB	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-005	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	107	98	94	4	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	224849-5
Date extracted	-			29/08/2019	1	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			29/08/2019	1	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	108	112
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	122	112
Dimethoate	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	72	76
Fenitrothion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	80	73
Malathion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	116	115
Parathion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	110	128
Ronnel	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	88	98
Surrogate TCMX	%		Org-008	95	1	129	87	39	85	85

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	224849-57
Date extracted	-			[NT]	25	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			[NT]	25	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	25	<0.1	<0.1	0	116	108
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	25	<0.1	<0.1	0	122	122
Dimethoate	mg/kg	0.1	Org-008	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	25	<0.1	<0.1	0	82	72
Fenitrothion	mg/kg	0.1	Org-008	[NT]	25	<0.1	<0.1	0	84	85
Malathion	mg/kg	0.1	Org-008	[NT]	25	<0.1	<0.1	0	92	118
Parathion	mg/kg	0.1	Org-008	[NT]	25	<0.1	<0.1	0	103	120
Ronnel	mg/kg	0.1	Org-008	[NT]	25	<0.1	<0.1	0	96	95
Surrogate TCMX	%		Org-008	[NT]	25	72	80	11	89	82

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	224849-108
Date extracted	-			[NT]	56	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			[NT]	56	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	56	<0.1	<0.1	0	96	89
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	56	<0.1	<0.1	0	100	83
Dimethoate	mg/kg	0.1	Org-008	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	56	<0.1	<0.1	0	74	64
Fenitrothion	mg/kg	0.1	Org-008	[NT]	56	<0.1	<0.1	0	78	66
Malathion	mg/kg	0.1	Org-008	[NT]	56	<0.1	<0.1	0	76	60
Parathion	mg/kg	0.1	Org-008	[NT]	56	<0.1	<0.1	0	118	92
Ronnel	mg/kg	0.1	Org-008	[NT]	56	<0.1	<0.1	0	86	79
Surrogate TCMX	%		Org-008	[NT]	56	84	82	2	92	83

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	74	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	74	29/08/2019	29/08/2019		[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-008	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-008	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-008	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-008	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-008	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-008	[NT]	74	84	84	0	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	92	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	92	29/08/2019	29/08/2019		[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-008	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-008	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-008	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-008	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-008	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-008	[NT]	92	90	98	9	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	107	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	107	29/08/2019	29/08/2019		[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-008	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-008	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-008	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-008	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-008	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-008	[NT]	107	98	94	4	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	224849-5
Date extracted	-			29/08/2019	1	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			29/08/2019	1	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	104	111
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	95	1	129	87	39	85	85

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	224849-57
Date extracted	-			[NT]	25	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			[NT]	25	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	25	<0.1	<0.1	0	118	106
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	25	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	25	72	80	11	89	82

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	224849-108
Date extracted	-			[NT]	56	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			[NT]	56	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	56	<0.1	<0.1	0	75	125
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	56	84	82	2	92	83

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	74	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	74	29/08/2019	29/08/2019		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	74	84	84	0	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	92	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	92	29/08/2019	29/08/2019		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	92	90	98	9	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	107	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	107	29/08/2019	29/08/2019		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	107	98	94	4	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	224849-5
Date prepared	-			29/08/2019	1	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			29/08/2019	1	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	105	107
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	104	106
Chromium	mg/kg	1	Metals-020	<1	1	20	13	42	104	105
Copper	mg/kg	1	Metals-020	<1	1	36	6	143	103	107
Lead	mg/kg	1	Metals-020	<1	1	29	16	58	108	104
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	84	92
Nickel	mg/kg	1	Metals-020	<1	1	15	3	133	99	103
Zinc	mg/kg	1	Metals-020	<1	1	68	21	106	104	100

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	224849-57
Date prepared	-			[NT]	25	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			[NT]	25	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Arsenic	mg/kg	4	Metals-020	[NT]	25	6	5	18	103	102
Cadmium	mg/kg	0.4	Metals-020	[NT]	25	<0.4	<0.4	0	103	102
Chromium	mg/kg	1	Metals-020	[NT]	25	15	14	7	104	94
Copper	mg/kg	1	Metals-020	[NT]	25	3	3	0	103	101
Lead	mg/kg	1	Metals-020	[NT]	25	15	14	7	107	141
Mercury	mg/kg	0.1	Metals-021	[NT]	25	<0.1	<0.1	0	93	87
Nickel	mg/kg	1	Metals-020	[NT]	25	2	2	0	99	93
Zinc	mg/kg	1	Metals-020	[NT]	25	10	9	11	103	98

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	224849-108
Date prepared	-			[NT]	56	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Date analysed	-			[NT]	56	29/08/2019	29/08/2019		29/08/2019	29/08/2019
Arsenic	mg/kg	4	Metals-020	[NT]	56	<4	<4	0	105	106
Cadmium	mg/kg	0.4	Metals-020	[NT]	56	<0.4	<0.4	0	104	103
Chromium	mg/kg	1	Metals-020	[NT]	56	3	6	67	103	98
Copper	mg/kg	1	Metals-020	[NT]	56	4	5	22	102	81
Lead	mg/kg	1	Metals-020	[NT]	56	29	29	0	106	106
Mercury	mg/kg	0.1	Metals-021	[NT]	56	<0.1	<0.1	0	79	92
Nickel	mg/kg	1	Metals-020	[NT]	56	<1	1	0	98	100
Zinc	mg/kg	1	Metals-020	[NT]	56	24	24	0	102	110

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	74	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	74	29/08/2019	29/08/2019		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	74	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	74	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	74	7	11	44	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	74	14	15	7	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	74	21	18	15	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	74	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	74	4	6	40	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	74	46	47	2	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	92	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	92	29/08/2019	29/08/2019		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	92	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	92	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	92	6	6	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	92	11	9	20	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	92	7	7	0	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	92	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	92	4	4	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	92	44	34	26	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	107	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	107	29/08/2019	29/08/2019		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	107	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	107	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	107	7	7	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	107	11	12	9	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	107	10	11	10	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	107	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	107	4	4	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	107	45	51	12	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	125	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	125	29/08/2019	29/08/2019		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	125	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	125	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	125	2	2	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	125	<1	<1	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	125	<1	<1	0	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	125	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	125	<1	<1	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	125	1	1	0	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	126	29/08/2019	29/08/2019		[NT]	[NT]
Date analysed	-			[NT]	126	29/08/2019	29/08/2019		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	126	4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	126	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	126	2	2	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	126	<1	<1	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	126	<1	<1	0	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	126	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	126	<1	<1	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	126	1	1	0	[NT]	[NT]

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date prepared	-			29/08/2019	[NT]	[NT]	[NT]	[NT]	29/08/2019	[NT]
Date analysed	-			[NT]	[NT]	[NT]	[NT]	[NT]	29/08/2019	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date prepared	-			30/08/2019	115	30/08/2019	30/08/2019		30/08/2019	[NT]
Date analysed	-			30/08/2019	115	30/08/2019	30/08/2019		30/08/2019	[NT]
Exchangeable Ca	meq/100g	0.1	Metals-009	<0.1	115	5.5	5.6	2	98	[NT]
Exchangeable K	meq/100g	0.1	Metals-009	<0.1	115	<0.1	<0.1	0	102	[NT]
Exchangeable Mg	meq/100g	0.1	Metals-009	<0.1	115	0.35	0.36	3	97	[NT]
Exchangeable Na	meq/100g	0.1	Metals-009	<0.1	115	<0.1	<0.1	0	93	[NT]

QUALITY CONTROL: BTEX in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			30/08/2019	[NT]	[NT]	[NT]	[NT]	30/08/2019	[NT]
Date analysed	-			31/08/2019	[NT]	[NT]	[NT]	[NT]	31/08/2019	[NT]
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	104	[NT]
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Surrogate Dibromofluoromethane	%		Org-016	99	[NT]	[NT]	[NT]	[NT]	103	[NT]
Surrogate toluene-d8	%		Org-016	97	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate 4-BFB	%		Org-016	104	[NT]	[NT]	[NT]	[NT]	102	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

Report Comments

Acid Extractable Metals in Soil:
-The laboratory RPD acceptance criteria has been exceeded for 224849-1 for Cu, Pb, Ni and Zn. Therefore a triplicate result has been issued as laboratory sample number 224849-134.
- Spike recovery for Pb in sample 224849-57 at 141% which is outside lab acceptance criteria (70-130%), however, the LCS recovery is acceptable at 102%. Sample heterogeneity suspected.

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Note: All samples analysed as received. However, samples 224849-16, 42, 67, 69, 98, 107, 108, 113 are below the minimum 500mL sample volume as per National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013.

PAHs in Soil - The laboratory RPD acceptance criteria has been exceeded for s224849-56. Therefore a triplicate result has been issued as laboratory sample number s224849-135.

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD	EIS Job Number: E3596BD	JKEnvironments
12 ASHLEY STREET		REAR OF 115 WICKS ROAD
CHATSWOOD NSW 2067		MACQUARIE PARK, NSW 2113
P: (02) 99106200	Date Results Required: STANDARD	P: 02-9888 5000 F: 02-9888 5001
F: (02) 99106201		Attention: Mitchell Delaney
Attention: Aileen	Page: 1 /6	

Location:	Brookvale Oval	Sample Preserved in Esky on Ice
Sampler:	AM	Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6	Combo 3	Asbestos (Detection)	Asbestos (WA 500ml method)	pH, CEC and clay content	BTEX	Heavy Metals					
22.8.19	1	BH201	0.12-0.2	G, A	0	Fill:Gravelly Sand	X			X								
22.8.19	2	BH201	0.2-0.6	G, A	0	Fill:Clayey Sand												
22.8.19	3	BH201	0.6-0.95	G, A	0	Silty Sand												
23.8.19	4	BH202	0.12-0.2	A	—	Fill: Silty Sand				X								
23.8.19	5	BH203	0.12-0.2	G, A	0.1	Fill: Silty Sand	X			X								
23.8.19	6	BH203	0.4-0.5	G, A	0.1	Fill:Silty Clay		X										
23.8.19	7	BH203	0.6-0.95	G, A	0	Sandy Clay		X										
23.8.19	8	BH204	0.12-0.2	A	—	Fill: Silty Sand				X								
23.8.19	9	BH204	0.2-0.4	A	—	Fill:Silty Clay												
23.8.19	10	BH204	0.9-1.0	A	—	Fill:Sandy Clay												
23.8.19	11	BH205	0.12-0.2	G, A	0.1	Fill: Silty Sand	X			X								
23.8.19	12	BH205	0.2-0.4	G, A	0	Fill:Silty Clay	X											
23.8.19	13	BH205	0.8-1.0	G, A	0.1	Fill:Sandy Clay												
23.8.19	14	BH205	1.2-1.4	G, A	0	Sandy Clay		X										
23.8.19	15	BH206	0.09-0.15	A	—	Fill: Silty Sand												
23.8.19	16	BH206	0.15-0.5	A	—	Fill:Silty Clay				X								
23.8.19	17	BH206	0.9-1.1	A	—	Fill:Silty Clay												
23.8.19	18	BH207	0.12-0.2	G, A	0	Fill: Silty Sand		X										
23.8.19	19	BH207	0.5-0.95	G, A	0	Fill:Silty Clay	X			X								
23.8.19	20	BH207	1.5-1.7	G, A	0	Sandy Clay												
23.8.19	21	BH208	0.09-0.3	A	—	Fill: Silty Sand												
23.8.19	22	BH208	0.3-0.5	A	—	Fill:Silty Clayey Sand				X								
23.8.19	23	BH208	1.2-1.5	A	—	Fill: Silty Sandy Clay												
23.8.19	24	BH209	0-0.2	G, A	0	Fill: Silty Clay	X			X								
23.8.19	25	BH209	0.3-0.5	G, A	0.1	Fill: Silty Clay	X											

ENVIROLAB

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

Job No: 224849

Date Received: 27/8/19
Time Received: 1649
Received by: EWS
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Remarks (comments/detection limits required):

Sample Containers:
G - 250mg Glass Jar
A - Ziplock Asbestos Bag
P - Plastic Bag

Relinquished By:	Date:	Time:	Received By:	Date:
MD	27/8/19		Ellen WS EWS	270819 1649

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	EIS Job Number: E3596BD Date Results Required: STANDARD Page: 2/6	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Mitchell Delaney

Location:	Brookvale Oval	Sample Preserved in Esky on Ice
Sampler:	AM	Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6	Combo 3	Asbestos (Detection)	Asbestos (WA 500ml method)	pH, CEC and clay content	BTEX							
23.8.19	26	BH209	0.5-0.7	G, A	0.1	Fill: Clayey Sand													
23.8.19	27	BH209	0.7-0.8	G, A	0	Fill: Silty Clayey Sand													
21.8.19	28	BH210	0-0.1	A	—	Fill: Sandy Silt													
21.8.19	29	BH210	0.3-0.5	A	—	Fill: Silty Sandy Clay				X									
22.8.19	30	BH211	0-0.2	G, A	0	Fill:Silty Sand	X			X	X								
22.8.19	31	BH211	0.5-0.95	G, A	0	Fill: Clayey Sand	X			X									
22.8.19	32	BH211	1.3-1.5	G, A	0	Silty Sand		X											
21.8.19	33	BH212	0-0.2	A	—	Fill:Silty Sand				X									
21.8.19	34	BH212	0.3-0.5	A	—	Fill:Silty Clay				X									
21.8.19	35	BH212	1.0-1.2	A	—	Fill:Silty Sand													
21.8.19	36	BH212	1.3-1.5	A	—	Fill:Silty Sand													
21.8.19	37	BH213	0-0.2	G, A	0	Fill:Silty Sand	X			X									
21.8.19	38	BH213	0.3-0.5	G, A	0	Fill:Silty Sand	X			X									
21.8.19	39	BH213	1.2-1.4	G, A	0	Fill:Silty Sand		X		X									
21.8.19	40	BH213	1.4-1.9	G, A	0	Fill:Clayey Sand		X											
21.8.19	41	BH213	1.9-2.1	G, A	0	Silty Sand													
21.8.19	42	BH214	0-0.2	A	—	Fill:Silty Sand				X									
21.8.19	43	BH214	0.5-0.95	A	—	Fill:Silty Sand				X									
21.8.19	44	BH214	1.5-1.95	A	—	Fill:Silty Clay				X									
21.8.19	45	BH214	2.4-2.7	A	—	Fill:Silty Clay													
21.8.19	46	BH215	0-0.2	G, A	0	Fill:Silty Sand	X			X									
21.8.19	47	BH215	0.3-0.5	G, A	0	Fill:Silty Sand													
21.8.19	48	BH215	0.5-0.95	G, A	0	Fill:Silty Clay													
21.8.19	49	BH215	1.5-1.95	G, A	0.1	Fill:Silty Clay	X			X									
21.8.19	50	BH215	2.7-2.9	G, A	0	Silty Sand													

Remarks (comments/detection limits required):	Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag

Relinquished By:	Date:	Time:	Received By:	Date:
MD	27/8/19		Ellen wh ELS	270819 1649

#224849

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	EIS Job Number: E3596BD Date Results Required: STANDARD Page: 3/6	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Mitchell Delaney

Location:	Brookvale Oval	Sample Preserved in Esky on Ice
Sampler:	AM	Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6	Combo 3	Asbestos (Detection)	Asbestos (WA 500ml method)	pH, CEC and clay content	BTEX						
21.8.19	51	BH216	0-0.2	A	—	Fill: Silty Sand				X								
21.8.19	52	BH216	0.3-0.5	A	—	Fill: Silty Sand				X								
21.8.19	53	BH216	0.5-0.95	A	—	Fill: Silty Clay												
21.8.19	54	BH216	1.5-1.95	A	—	Fill: Silty Clay												
21.8.19	55	BH216	2.3-2.5	A	—	Fill:Clayey Sand												
23.8.19	56	BH217	0-0.2	G, A	0	Fill: Silty Sand	X			X								
23.8.19	57	BH217	0.5-0.75	G, A	0	Fill: Silty Sand	X			X								
23.8.19	58	BH217	0.75-0.95	G, A	0	Fill: Silty Clay												
23.8.19	59	BH217	1.4-1.45	G, A	0	Fill: Silty Clay												
23.8.19	60	BH218	0-0.2	A	—	Fill: Silty Sand				X								
23.8.19	61	BH218	0.3-0.6	A	—	Fill: Silty Clay												
23.8.19	62	BH218	1.3-1.5	A	—	Fill: Silty Clay												
23.8.19	63	BH218	1.5-1.95	A	—	Fill: Silty Clay				X								
22.8.19	64	BH219	0-0.2	G, A	0	Fill: Silty Sand	X			X								
22.8.19	65	BH219	0.5-0.95	G, A	0	Fill:Clayey Sand	X			X								
22.8.19	66	BH219	1.4-1.6	G, A	0	Silty Sand		X										
21.8.19	67	BH220	0-0.1	A	—	Fill:Sandy Silt				X								
21.8.19	68	BH220	0.3-0.5	A	—	Fill:Clayey Sand												
21.8.19	69	BH221	0-0.2	G, A	0	Fill:Sandy Silt	X			X								
21.8.19	70	BH221	0.3-0.5	G, A	0	Fill:Silty Sandy Clay												
21.8.19	71	BH221	0.75-0.95	G, A	0.7	Silty Sand		X										
21.8.19	72	BH222	0-0.2	A	—	Fill: Silty Sand				X								
21.8.19	73	BH222	0.4-0.5	A	—	Fill:Clayey Sand												
21.8.19	74	BH223	0-0.2	G, A	0	Fill: Silty Sand	X			X								
21.8.19	75	BH223	0.5-0.95	G, A	0	Fill: Silty Sand		X		X								

Remarks (comments/detection limits required):	Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag

Relinquished By:	Date:	Time:	Received By:	Date:
MD	27/8/19		Taken via EIS.	270819 1640

#224849

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	EIS Job Number: E3596BD Date Results Required: STANDARD Page: 4/6	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Mitchell Delaney

Location:	Brookvale Oval	Sample Preserved in Esky on Ice
Sampler:	AM	Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6	Combo 3	Asbestos (Detection)	Asbestos (WA 500ml method)	pH, CEC and clay content	BTEX							
21.8.19	76	BH223	1.5-1.7	G, A	0	Silty Sand		X											
22.8.19	77	BH224	0-0.2	G, A	0	Fill: Silty Sand	X			X									
22.8.19	78	BH225	0.03-0.2	A	—	Fill: Silty Sand				X									
22.8.19	79	BH225	0.6-0.8	A	—	Fill: Silty Sand													
22.8.19	80	BH226	0-0.2	A	—	Fill: Sandy Silt				X									
22.8.19	81	BH227	0-0.2	G, A	0	Fill: Sandy Silt	X			X	X								
22.8.19	82	BH227	0.5-0.7	G, A	0	Silty Sand	X												
22.8.19	83	BH228	0-0.2	A	—	Fill: Sandy Silt				X									
26.8.19	84	BH229	0-0.2	G, A	0	Fill: Sandy Silt	X			X									
26.8.19	85	BH229	0.2-0.4	G, A	0	Fill: Sandy clay													
26.8.19	86	BH229	0.6-0.9	G, A	0	Fill: Sandy clay													
26.8.19	87	BH229	1.1-1.3	G, A	0	Fill: Clayey Sand		X		X									
26.8.19	88	BH229	1.3-1.5	G, A	0	Clayey Sand		X											
23.8.19	89	BH230	0-0.2	A	—	Fill: Silty Sand				X									
23.8.19	90	BH230	0.2-0.4	A	—	Fill: Silty Clayey Sand				X									
26..8.19	91	BH231	0-0.2	A	—	Fill: Sandy Silt				X									
23.8.19	92	BH232	0-0.2	G, A	0	Fill: Silty Sand	X			X									
23.8.19	93	BH232	0.2-0.4	G, A	0	Fill: Silty Clayey Sand													
23.8.19	94	BH232	0.4-0.6	G, A	0	Fill: Sandy Clay													
23.8.19	95	BH232	0.65-0.9	G, A	0	Fill: Sandy Clay													
23.8.19	96	BH232	0.9-1.1	G, A	0	Fill: Clayey Sand													
23.8.19	97	BH232	1.2-1.4 ~~1.1-1.3~~	G, A	0	~~Fill:~~ Clayey Sand		X											
26.8.19	98	BH233	0-0.2	G, A	0	Fill: Sandy Silt	X			X									
26.8.19	99	BH233	0.3-0.4	G, A	0	Fill: Clayey Sand		X		X									
26.8.19	100	BH233	0.4-0.6	G, A	0	Silty Sand													

Remarks (comments/detection limits required):	Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag

Relinquished By:	Date:	Time:	Received By:	Date:
AM	27/8/19		Elaine ELS	270819 1640

#224849

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	EIS Job Number: E3596BD Date Results Required: STANDARD Page: 5/6	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Mitchell Delaney

Location:	Brookvale Oval	Sample Preserved In Esky on Ice
Sampler:	AM	Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6	Combo 3	Asbestos (Detection)	Asbestos (WA 500ml method)	pH, CEC and clay content	BTEX	Heavy Metals					
23.8.19	101	BH234	0-0.2	A	1	Fill: Silty Sand				X								
23.8.19	102	BH234	0.2-0.4	A	1	Fill: Silty Clayey Sand				X								
23.8.19	103	BH234	0.4-0.6	A	1	Fill: Clayey Sand												
23.8.19	104	BH234	0.6-0.9	A	1	Fill: Silty Clayey Sand												
26.8.19	105	BH235	0-0.2	A	1	Fill: Sandy Silt				X								
26.8.19	106	BH235	0.2-0.3	A	1	Fill:Sandy Clay												
22.8.19	107	BH236	0-0.2	G, A	0	Fill: Silty Sand	X			X								
22.8.19	108	BH236	0.5-0.7	G, A	0	Fill: Silty Sand	X			X								
22.8.19	109	BH236	1.1-1.3	G, A	0	Silty Sand	X											
22.8.19	110	BH237	0-0.2	G, A	0	Fill: Silty Sand	X			X								
22.8.19	111	BH237	0.3-0.5	G, A	0	Silty Sand												
22.8.19	112	BH238	0-0.2	A	1	Fill: Silty Sand				X								
26.8.19	113	BH239	0-0.2	A	1	Fill: Clayey Sand				X								
26.8.19	114	BH239	1.1-1.3	A	1	Fill: Silty Sand												
26.8.19	115	BH240	0-0.2	G, A	0	Fill: Clayey Sand	X			X	X							
26.8.19	116	BH240	0.4-0.6	G, A	0	Silty Sand	X											
21.8.19	117	DUPAM1	-	G	1	DUP Soil												
21.8.19	118	DUPAM2	-	G	1	DUP Soil												
22.8.19	119	DUPAM3	-	G	1	DUP Soil	X											
22.8.19	120	DUPAM4	-	G	1	DUP Soil	X											
121 23.8.19	—	DUPAM5	-	G	1	DUP Soil	X							Please send DUPAM5 to Envirolab VIC				
122 23.8.19	~~121~~	DUPAM6	-	G	1	DUP Soil												
123 26.8.19	—	DUPAM7	-	G	1	DUP Soil	X							Please send DUPAM7 to Envirolab VIC				
124 26.8.19	~~122~~	DUPAM8	-	G	1	DUP Soil												
125 21.8.19	~~123~~	TB1	-	G	1	Trip Blank Soil							X					

Remarks (comments/detection limits required):	Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag

Relinquished By:	Date:	Time:	Received By:	Date:
	27/8/19		Elevnh EIS.	270819 1649

224849

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	EIS Job Number: E3596BD Date Results Required: STANDARD Page: 6/6	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Mitchell Delaney

Location: Brookvale Oval

Sampler: AM

Sample Preserved in Esky on Ice

Tests Required

	Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6	Combo 3	Asbestos	Asbestos (500mL WA)	BTEX	Heavy Metals
126	21/8.8.19	~~124~~	TB2	-	G	-	Trip Blank Soil						X
127	23.8.19	~~125~~	FRAM1	-	V	-	Field Rinsate					X	
128	21.8.19	~~126~~	AMF1	0.3-1.4	A	-	Fragment			X			
129	21.8.19	~~127~~	AMF2	0-0.2	A	-	Fragment			X			
130	22.8.19	~~128~~	AMF3	surface	A	-	Fragment			X			
131	22.8.19	~~129~~	AMF4	0.4-1.2	A	-	↓			X			
132	26.8.19	~~130~~	BH239	0.6-0.8	A	-	Fill: clayey Sand						
133	23-26/8/19	~~131~~	TS1	-	Vial	-	Soil					X	
	[redacted]	[redacted]	[redacted]										

Remarks (comments/detection limits required):

Sample Containers:
G - 250mg Glass Jar
A - Ziplock Asbestos Bag
P - Plastic Bag

Relinquished By:	Date:	Time:	Received By:	Date:
MD	27/8/19		Elenita ECS.	270819 1649

224849

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SAMPLE RECEIPT ADVICE

Client Details

Client	Environmental Investigation Services
Attention	Mitchell Delaney

Sample Login Details

Your reference	E32596BD, Brookvale Oval
Envirolab Reference	224849
Date Sample Received	27/08/2019
Date Instructions Received	28/08/2019
Date Results Expected to be Reported	03/09/2019

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	128 Soil, 1 Water, 4 Material
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	5.6
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticidesin soil	Organophosphorus Pesticides	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	Asbestos ID - materials	Misc Inorg - Soil	CEC	Clay 50-120g	BTEX in Water	On Hold
BH201-0.12-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH201-0.2-0.6														✓
BH201-0.6-0.95														✓
BH202-0.12-0.2								✓						
BH203-0.12-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH203-0.4-0.5	✓	✓	✓				✓							
BH203-0.6-0.95	✓	✓	✓				✓							
BH204-0.12-0.2								✓						
BH204-0.2-0.4														✓
BH204-0.9-1.0														✓
BH205-0.12-0.2	✓	✓	✓	✓	✓	✓	✓							
BH205-0.2-0.4	✓	✓	✓	✓	✓	✓	✓	✓						
BH205-0.8-1.0														✓
BH205-1.2-1.4	✓	✓	✓				✓							
BH206-0.09-0.15														✓
BH206-0.15-0.5								✓						
BH206-0.9-1.1														✓
BH207-0.12-0.2	✓	✓	✓				✓							
BH207-0.5-0.95	✓	✓	✓	✓	✓	✓	✓	✓						
BH207-1.5-1.7														✓

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticidesin soil	Organophosphorus Pesticides	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	Asbestos ID - materials	Misc Inorg - Soil	CEC	Clay 50-120g	BTEX in Water	On Hold
BH208-0.09-0.3														✓
BH208-0.3-0.5								✓						
BH208-1.2-1.5														✓
BH209-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH209-0.3-0.5	✓	✓	✓	✓	✓	✓	✓							
BH209-0.5-0.7														✓
BH209-0.7-0.8														✓
BH210-0-0.1														✓
BH210-0.3-0.5								✓						
BH211-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		
BH211-0.5-0.75	✓	✓	✓	✓	✓	✓	✓	✓						
BH211-1.3-1.5	✓	✓	✓				✓							
BH212-0-0.2								✓						
BH212-0.3-0.5								✓						
BH212-1.0-1.2														✓
BH212-1.3-1.5														✓
BH213-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH213-0.3-0.5	✓	✓	✓	✓	✓	✓	✓	✓						
BH213-1.2-1.4	✓	✓	✓				✓	✓						
BH213-1.4-1.9	✓	✓	✓				✓							

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticidesin soil	Organophosphorus Pesticides	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	Asbestos ID - materials	Misc Inorg - Soil	CEC	Clay 50-120g	BTEX in Water	On Hold
BH213-1.9-2.1														✓
BH214-0-0.2								✓						
BH214-0.5-0.95								✓						
BH214-1.5-1.95								✓						
BH214-2.4-2.7														✓
BH215-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH215-0.3-0.5														✓
BH215-0.5-0.95														✓
BH215-1.5-1.95	✓	✓	✓	✓	✓	✓	✓	✓						
BH215-2.7-2.9														✓
BH216-0-0.2								✓						
BH216-0.3-0.5								✓						
BH216-0.5-0.95														✓
BH216-1.5-1.95														✓
BH216-2.3-2.5														✓
BH217-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH217-0.5-0.75	✓	✓	✓	✓	✓	✓	✓	✓						
BH217-0.75-0.95														✓
BH217-1.4-1.45														✓
BH218-0-0.2								✓						

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticidesin soil	Organophosphorus Pesticides	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	Asbestos ID - materials	Misc Inorg - Soil	CEC	Clay 50-120g	BTEX in Water	On Hold
BH218-0.3-0.6														✓
BH218-1.3-1.5														✓
BH218-1.5-1.95								✓						
BH219-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH219-0.5-0.95	✓	✓	✓	✓	✓	✓	✓	✓						
BH219-1.4-1.6	✓	✓	✓				✓							
BH220-0-0.1								✓						
BH220-0.3-0.5														✓
BH221-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH221-0.3-0.5														✓
BH221-0.75-0.95	✓	✓	✓				✓							
BH222-0-0.2								✓						
BH222-0.4-0.5														✓
BH223-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH223-0.5-0.95	✓	✓	✓				✓	✓						
BH223-1.5-1.7	✓	✓	✓				✓							
BH224-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH225-0.03-0.2								✓						
BH225-0.6-0.8														✓
BH226-0-0.2								✓						

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticidesin soil	Organophosphorus Pesticides	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	Asbestos ID - materials	Misc Inorg - Soil	CEC	Clay 50-120g	BTEX in Water	On Hold
BH227-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		
BH227-0.5-0.7	✓	✓	✓	✓	✓	✓	✓							
BH228-0-0.2								✓						
BH229-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH229-0.2-0.4														✓
BH229-0.6-0.9														✓
BH229-1.1-1.3	✓	✓	✓				✓	✓						
BH229-1.3-1.5	✓	✓	✓				✓							
BH230-0-0.2								✓						
BH230-0.2-0.4								✓						
BH231-0-0.2								✓						
BH232-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH232-0.2-0.4														✓
BH232-0.4-0.6														✓
BH232-0.65-0.9														✓
BH232-0.9-1.1														✓
BH232-1.2-1.4	✓	✓	✓				✓							
BH233-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH233-0.3-0.4	✓	✓	✓				✓	✓						
BH233-0.4-0.6														✓

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticidesin soil	Organophosphorus Pesticides	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	Asbestos ID - materials	Misc Inorg - Soil	CEC	Clay 50-120g	BTEX in Water	On Hold
BH234-0-0.2								✓						
BH234-0.2-0.4								✓						
BH234-0.4-0.6														✓
BH234-0.6-0.9														✓
BH235-0-0.2								✓						
BH235-0.2-0.3														✓
BH236-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH236-0.5-0.7	✓	✓	✓	✓	✓	✓	✓	✓						
BH236-1.1-1.3	✓	✓	✓	✓	✓	✓	✓							
BH237-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓						
BH237-0.3-0.5														✓
BH238-0-0.2								✓						
BH239-0-0.2								✓						
BH239-1.1-1.3														✓
BH240-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		
BH240-0.4-0.6	✓	✓	✓	✓	✓	✓	✓							
DUPAM1														✓
DUPAM2														✓
DUPAM3	✓	✓	✓	✓	✓	✓	✓							
DUPAM4	✓	✓	✓	✓	✓	✓	✓							

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticidesin soil	Organophosphorus Pesticides	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	Asbestos ID - materials	Misc Inorg - Soil	CEC	Clay 50-120g	BTEX in Water	On Hold
DUPAM5														✓
DUPAM6														✓
DUPAM7														✓
DUPAM8														✓
TB1							✓							
TB2							✓							
FRAM1													✓	
AMF1-0.3-1.4									✓					
AMF2-0-0.2									✓					
AMF3									✓					
AMF4-0.4-1.2									✓					
BH239-0.6-0.8														✓
TS1	✓													
BH201 - [TRIPLICATE]-0.12-0.2							✓							
BH217 - [TRIPLICATE]-0-0.2			✓											

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

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Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt. Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

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CERTIFICATE OF ANALYSIS 224846

Client Details

Client	Environmental Investigation Services
Attention	Mitchell Delaney
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E32596BD, Brookvale Oval**
Number of Samples	34 soil
Date samples received	27/08/2019
Date completed instructions received	27/08/2019

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	04/09/2019
Date of Issue	04/09/2019

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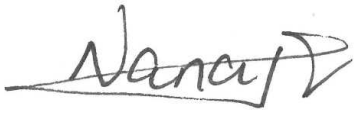
Results Approved By
Matt Mansfield, HSE manager

Authorised By



Nancy Zhang, Laboratory Manager

sPOCAS + %S w/w						
Our Reference		224846-1	224846-4	224846-7	224846-10	224846-14
Your Reference	UNITS	BH206	BH206	BH206	BH206	BH210
Depth		1.2-1.5	3.3-3.45	5.4-5.6	7.7-7.95	2.9-3.15
Date Sampled		23/08/2019	23/08/2019	23/08/2019	23/08/2019	21/08/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	02/09/2019	02/09/2019	02/09/2019	02/09/2019	02/09/2019
Date analysed	-	02/09/2019	02/09/2019	02/09/2019	02/09/2019	02/09/2019
pH $_{kcl}$	pH units	5.5	4.2	4.2	4.2	4.7
TAA pH 6.5	moles H^+ /t	6	39	59	49	11
s-TAA pH 6.5	%w/w S	0.01	0.06	0.09	0.08	0.02
pH $_{Ox}$	pH units	5.2	4.6	4.5	4.5	4.8
TPA pH 6.5	moles H^+ /t	5	45	58	38	19
s-TPA pH 6.5	%w/w S	<0.01	0.07	0.09	0.06	0.03
TSA pH 6.5	moles H^+ /t	<5	6	<5	<5	8
s-TSA pH 6.5	%w/w S	<0.01	0.01	<0.01	<0.01	0.01
ANC_E	% $CaCO_3$	<0.05	<0.05	<0.05	<0.05	<0.05
a-ANC_E	moles H^+ /t	<5	<5	<5	<5	<5
s-ANC_E	%w/w S	<0.05	<0.05	<0.05	<0.05	<0.05
S_{KCl}	%w/w S	<0.005	0.03	0.02	0.02	0.009
S_P	%w/w	0.006	0.03	0.02	0.02	0.007
S_{POS}	%w/w	<0.005	<0.005	<0.005	<0.005	<0.005
a-S_{POS}	moles H^+ /t	<5	<5	<5	<5	<5
Ca_{KCl}	%w/w	0.07	0.008	0.008	<0.005	0.008
Ca_P	%w/w	0.07	0.008	0.01	<0.005	0.008
Ca_A	%w/w	<0.005	<0.005	<0.005	<0.005	<0.005
Mg_{KCl}	%w/w	0.009	0.006	0.007	<0.005	0.006
Mg_P	%w/w	0.010	0.006	0.007	<0.005	<0.005
Mg_A	%w/w	<0.005	<0.005	<0.005	<0.005	<0.005
S_{HCl}	%w/w S	<0.005	0.028	0.022	0.018	<0.005
S_{NAS}	%w/w S	<0.005	<0.005	<0.005	<0.005	<0.005
a-S_{NAS}	moles H^+ /t	<5	<5	<5	<5	<5
s-S_{NAS}	%w/w S	<0.01	<0.01	<0.01	<0.01	<0.01
Fineness Factor	-	1.5	1.5	1.5	1.5	1.5
a-Net Acidity	moles H^+ /t	7	39	59	49	11
s-Net Acidity	%w/w S	0.01	0.06	0.09	0.08	0.02
Liming rate	kg $CaCO_3$ /t	<0.75	2.9	4.4	3.7	0.85
s-Net Acidity without -ANCE	%w/w S	0.011	0.062	0.094	0.078	0.018
a-Net Acidity without ANCE	moles H^+ /t	7.1	39	59	49	11
Liming rate without ANCE	kg $CaCO_3$ /t	<0.75	2.9	4.4	3.7	0.85

sPOCAS + %S w/w						
Our Reference		224846-18	224846-20	224846-24	224846-26	224846-30
Your Reference	UNITS	BH210	BH210	BH228	BH228	BH228
Depth		5.9-6.15	7.3-7.65	3.0-3.45	4.5-4.95	7.5-7.95
Date Sampled		21/08/2019	21/08/2019	22/08/2019	22/08/2019	22/08/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	02/09/2019	02/09/2019	02/09/2019	02/09/2019	02/09/2019
Date analysed	-	02/09/2019	02/09/2019	02/09/2019	02/09/2019	02/09/2019
pH $_{kcl}$	pH units	4.3	4.2	4.3	4.3	4.3
TAA pH 6.5	moles H^+ /t	31	71	36	51	26
s-TAA pH 6.5	%w/w S	0.05	0.11	0.06	0.08	0.04
pH $_{Ox}$	pH units	4.7	4.5	4.7	4.5	4.5
TPA pH 6.5	moles H^+ /t	32	62	40	31	28
s-TPA pH 6.5	%w/w S	0.05	0.10	0.06	0.05	0.04
TSA pH 6.5	moles H^+ /t	<5	<5	<5	<5	<5
s-TSA pH 6.5	%w/w S	<0.01	<0.01	<0.01	<0.01	<0.01
ANC_E	% $CaCO_3$	<0.05	<0.05	<0.05	<0.05	<0.05
a-ANC_E	moles H^+ /t	<5	<5	<5	<5	<5
s-ANC_E	%w/w S	<0.05	<0.05	<0.05	<0.05	<0.05
S_{KCl}	%w/w S	0.01	0.02	0.01	0.006	0.009
S_P	%w/w	0.007	0.02	0.01	0.007	0.009
S_{POS}	%w/w	<0.005	<0.005	<0.005	<0.005	<0.005
a-S_{POS}	moles H^+ /t	<5	<5	<5	<5	<5
Ca_{KCl}	%w/w	<0.005	<0.005	0.005	0.006	<0.005
Ca_P	%w/w	<0.005	0.005	0.005	0.006	<0.005
Ca_A	%w/w	<0.005	<0.005	<0.005	<0.005	<0.005
Mg_{KCl}	%w/w	0.009	0.006	0.022	0.016	0.006
Mg_P	%w/w	0.007	0.006	0.020	0.016	0.005
Mg_A	%w/w	<0.005	<0.005	<0.005	<0.005	<0.005
S_{HCl}	%w/w S	0.007	0.016	0.013	0.006	0.010
S_{NAS}	%w/w S	<0.005	<0.005	<0.005	<0.005	<0.005
a-S_{NAS}	moles H^+ /t	<5	<5	<5	<5	<5
s-S_{NAS}	%w/w S	<0.01	<0.01	<0.01	<0.01	<0.01
Fineness Factor	-	1.5	1.5	1.5	1.5	1.5
a-Net Acidity	moles H^+ /t	31	71	36	53	27
s-Net Acidity	%w/w S	0.05	0.11	0.06	0.08	0.04
Liming rate	kg $CaCO_3$ /t	2.4	5.4	2.7	3.9	2.0
s-Net Acidity without -ANCE	%w/w S	0.050	0.11	0.058	0.084	0.043
a-Net Acidity without ANCE	moles H^+ /t	31	71	36	53	27
Liming rate without ANCE	kg $CaCO_3$ /t	2.4	5.4	2.7	3.9	2.0

sPOCAS + %S w/w		
Our Reference		224846-34
Your Reference	UNITS	BH239
Depth		1.3-1.6
Date Sampled		26/08/2019
Type of sample		soil
Date prepared	-	02/09/2019
Date analysed	-	02/09/2019
pH $_{kcl}$	pH units	7.0
TAA pH 6.5	moles H^+ /t	<5
s-TAA pH 6.5	%w/w S	<0.01
pH $_{Ox}$	pH units	6.6
TPA pH 6.5	moles H^+ /t	<5
s-TPA pH 6.5	%w/w S	<0.01
TSA pH 6.5	moles H^+ /t	<5
s-TSA pH 6.5	%w/w S	<0.01
ANC_E	% $CaCO_3$	0.12
a-ANC_E	moles H^+ /t	25
s-ANC_E	%w/w S	<0.05
S_{KCl}	%w/w S	<0.005
S_P	%w/w	0.005
S_{POS}	%w/w	0.005
a-S_{POS}	moles H^+ /t	<5
Ca_{KCl}	%w/w	0.05
Ca_P	%w/w	0.04
Ca_A	%w/w	<0.005
Mg_{KCl}	%w/w	0.005
Mg_P	%w/w	0.005
Mg_A	%w/w	<0.005
S_{HCl}	%w/w S	<0.005
S_{NAS}	%w/w S	<0.005
a-S_{NAS}	moles H^+ /t	<5
s-S_{NAS}	%w/w S	<0.01
Fineness Factor	-	1.5
a-Net Acidity	moles H^+ /t	<5
s-Net Acidity	%w/w S	<0.01
Liming rate	kg $CaCO_3$ /t	<0.75
s-Net Acidity without -ANCE	%w/w S	<0.01
a-Net Acidity without ANCE	moles H^+ /t	<5
Liming rate without ANCE	kg $CaCO_3$ /t	<0.75

Method ID	Methodology Summary
Inorg-064	sPOCAS determined using titrimetric and ICP-AES techniques. Based on Acid Sulfate Soils Laboratory Methods Guidelines, Version 2.1 - June 2004.

QUALITY CONTROL: sPOCAS + %S w/w						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			02/09/2019	1	02/09/2019	02/09/2019		02/09/2019	[NT]
Date analysed	-			02/09/2019	1	02/09/2019	02/09/2019		02/09/2019	[NT]
pH $_{kcl}$	pH units		Inorg-064	[NT]	1	5.5	5.5	0	88	[NT]
TAA pH 6.5	moles H^+ /t	5	Inorg-064	<5	1	6	6	0	85	[NT]
s-TAA pH 6.5	%w/w S	0.01	Inorg-064	<0.01	1	0.01	0.01	0	[NT]	[NT]
pH $_{Ox}$	pH units		Inorg-064	[NT]	1	5.2	5.3	2	102	[NT]
TPA pH 6.5	moles H^+ /t	5	Inorg-064	<5	1	5	5	0	104	[NT]
s-TPA pH 6.5	%w/w S	0.01	Inorg-064	<0.01	1	<0.01	<0.01	0	[NT]	[NT]
TSA pH 6.5	moles H^+ /t	5	Inorg-064	<5	1	<5	<5	0	[NT]	[NT]
s-TSA pH 6.5	%w/w S	0.01	Inorg-064	<0.01	1	<0.01	<0.01	0	[NT]	[NT]
ANC_E	% $CaCO_3$	0.05	Inorg-064	<0.05	1	<0.05	<0.05	0	[NT]	[NT]
a-ANC_E	moles H^+ /t	5	Inorg-064	<5	1	<5	<5	0	[NT]	[NT]
s-ANC_E	%w/w S	0.05	Inorg-064	<0.05	1	<0.05	<0.05	0	[NT]	[NT]
S_{KCl}	%w/w S	0.005	Inorg-064	<0.005	1	<0.005	0.005	0	[NT]	[NT]
S_P	%w/w	0.005	Inorg-064	<0.005	1	0.006	0.005	18	[NT]	[NT]
S_{POS}	%w/w	0.005	Inorg-064	<0.005	1	<0.005	<0.005	0	[NT]	[NT]
a-S_{POS}	moles H^+ /t	5	Inorg-064	<5	1	<5	<5	0	[NT]	[NT]
Ca_{KCl}	%w/w	0.005	Inorg-064	<0.005	1	0.07	0.06	15	[NT]	[NT]
Ca_P	%w/w	0.005	Inorg-064	<0.005	1	0.07	0.06	15	[NT]	[NT]
Ca_A	%w/w	0.005	Inorg-064	<0.005	1	<0.005	<0.005	0	[NT]	[NT]
Mg_{KCl}	%w/w	0.005	Inorg-064	<0.005	1	0.009	0.009	0	[NT]	[NT]
Mg_P	%w/w	0.005	Inorg-064	<0.005	1	0.010	0.009	11	[NT]	[NT]
Mg_A	%w/w	0.005	Inorg-064	<0.005	1	<0.005	<0.005	0	[NT]	[NT]
S_{HCl}	%w/w S	0.005	Inorg-064	<0.005	1	<0.005	<0.005	0	[NT]	[NT]
S_{NAS}	%w/w S	0.005	Inorg-064	<0.005	1	<0.005	<0.005	0	[NT]	[NT]
a-S_{NAS}	moles H^+ /t	5	Inorg-064	<5	1	<5	<5	0	[NT]	[NT]
s-S_{NAS}	%w/w S	0.01	Inorg-064	<0.01	1	<0.01	<0.01	0	[NT]	[NT]
Fineness Factor	-	1.5	Inorg-064	<1.5	1	1.5	1.5	0	[NT]	[NT]
a-Net Acidity	moles H^+ /t	5	Inorg-064	<5	1	7	7	0	[NT]	[NT]
s-Net Acidity	%w/w S	0.01	Inorg-064	<0.01	1	0.01	0.01	0	[NT]	[NT]
Liming rate	kg $CaCO_3$ /t	0.75	Inorg-064	<0.75	1	<0.75	<0.75	0	[NT]	[NT]
s-Net Acidity without -ANCE	%w/w S	0.01	Inorg-064	<0.01	1	0.011	0.011	0	[NT]	[NT]

QUALITY CONTROL: sPOCAS + %S w/w						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
a-Net Acidity without ANCE	moles H^+ /t	5	Inorg-064	<5	1	7.1	6.7	6	[NT]	[NT]
Liming rate without ANCE	kg $CaCO_3$ /t	0.75	Inorg-064	<0.75	1	<0.75	<0.75	0	[NT]	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

SAMPLE AND CHAIN OF CUSTODY FORM

TO:
ENVIROLAB SERVICES PTY LTD
12 ASHLEY STREET
CHATSWOOD NSW 2067
P: (02) 99106200
F: (02) 99106201

Attention: Aileen

EIS Job Number: E32596BD

Date Results Required: STANDARD

Page: 1

FROM:
JKEnvironments
REAR OF 115 WICKS ROAD
MACQUARIE PARK, NSW 2113
P: 02-9888 5000 F: 02-9888 5001
Attention: Mitchell Delaney

Location: Brookvale Oval
Sampler: AM

Sample Preserved in Esky on Ice

Tests Required

	Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	Sample Description	sPOCAS	pH (1:5 water)										
1	23.8.19	1	BH206	1.2-1.5	P	Sandy Clay	X											
2	23.8.19	2	BH206	1.75-1.95	P	Sandy Clay												
	23.8.19	3 DUP	BH206	2.5-2.8	P	Clayey Sand												
3	23.8.19	4	BH206	2.5-2.8	P	Clayey Sand												
4	23.8.19	5	BH206	3.3-3.45	P	Clayey Sand	X											
5	23.8.19	6	BH206	3.9-4.2	P	Sandy Clay												
6	23.8.19	7	BH206	4.75-4.95	P	Sandy Clay												
7	23.8.19	8	BH206	5.4-5.6	P	Sandy Clay	X											
8	23.8.19	9	BH206	6.25-6.45	P	Sandy Clay												
9	23.8.19	10	BH206	7.0-7.2	P	Sandy Clay												
10	23.8.19	11	BH206	7.7-7.95	P	Clayey Sand	X											
11	21.8.19	12	BH210	0.65-0.95	P	Silty Sand												
12	21.8.19	13	BH210	1.5-1.7	P	Silty Clayey Sand												
13	21.8.19	14	BH210	1.7-1.95	P	Silty Clayey Sand												
14	21.8.19	15	BH210	2.9-3.15	P	Silty Clayey Sand	X											
15	21.8.19	16	BH210	3.7-4.0	P	Silty Clayey Sand												
16	21.8.19	17	BH210	4.5-4.65	P	Silty Sand												
17	21.8.19	18	BH210	5.3-5.5	P	Silty Clayey Sand												
18	21.8.19	19	BH210	5.9-6.15	P	Silty Clayey Sand	X											
19	21.8.19	20	BH210	6.9-7.1	P	Silty Clayey Sand												
20	21.8.19	21	BH210	7.3-7.65	P	Clayey Sand	X											
21	22.8.19	22	BH228	0.5-0.95	P	Silty Sand												
22	22.8.19	23	BH228	1.5-1.95	P	Silty Sand												
23	22.8.19	24	BH228	2.4-2.6	P	Clayey Sand												
24	22.8.19	25	BH228	3.0-3.45	P	Clayey Sand	X											

Remarks (comments/detection limits required):
SO 27/8

Sample Containers:
G - 250mg Glass Jar
A - Ziplock Asbestos Bag
P - Plastic Bag

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

Job No: 224866
Date Received: 27/8/19
Time Received: 16:49
Received by: SO
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished By:	Date:	Time:	Received By:	Date:
MD	27/8/19	16:49	Scott Day EIS Sydney	27/8/19

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	EIS Job Number: E32596BD Date Results Required: STANDARD Page: 1	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Mitchell Delaney

Location:	Brookvale Oval					Sample Preserved in Esky on Ice											
Sampler:	AM					Tests Required											
Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	Sample Description	sPOCAS	pH (1:5 water)										
22.8.19	26	BH228	4.0-4.2	P	Sandy Clay												
22.8.19	27	BH228	4.5-4.95	P	Sandy Clay	X											
22.8.19	28	BH228	5.4-5.6	P	Sandy Clay												
22.8.19	29	BH228	6.1-6.45	P	Sandy Clay												
22.8.19	30	BH228	7.0-7.2	P	Sandy Clay												
22.8.19	31	BH228	7.5-7.95	P	Clayey Sand	X											
26.8.19	32	BH239	0-0.2	P	Fill:Clayey Sand												
26.8.19	33	BH239	0.8-1.1	P	Fill:Silty Sand												
26.8.19	34	BH239	1.1-1.3	P	Fill:Silty Sand												
26.8.19	35	BH239	1.3-1.6	P	Silty Sand	X											
	TD																
	27/8																

Remarks (comments/detection limits required):

Sample Containers:
G - 250mg Glass Jar
A - Ziplock Asbestos Bag
P - Plastic Bag

224846

Relinquished By:	Date:	Time:	Received By:	Date:
MD	27/8/19	16:49	Saban Das ELS Sydney	27/8/19

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Environmental Investigation Services
Attention	Mitchell Delaney

Sample Login Details

Your reference	E32596BD, Brookvale Oval
Envirolab Reference	224846
Date Sample Received	27/08/2019
Date Instructions Received	27/08/2019
Date Results Expected to be Reported	04/09/2019

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	34 soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	6.4
Cooling Method	None
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	sPOCAS + %S w/w	On Hold
BH206-1.2-1.5	✓	
BH206-1.75-1.95		✓
BH206-2.5-2.8		✓
BH206-3.3-3.45	✓	
BH206-3.9-4.2		✓
BH206-4.75-4.95		✓
BH206-5.4-5.6	✓	
BH206-6.25-6.45		✓
BH206-7.0-7.2		✓
BH206-7.7-7.95	✓	
BH210-0.65-0.95		✓
BH210-1.5-1.7		✓
BH210-1.7-1.95		✓
BH210-2.9-3.15	✓	
BH210-3.7-4.0		✓
BH210-4.5-4.65		✓
BH210-5.3-5.5		✓
BH210-5.9-6.15	✓	
BH210-6.9-7.1		✓
BH210-7.3-7.65	✓	
BH228-0.5-0.95		✓
BH228-1.5-1.95		✓
BH228-2.4-2.6		✓
BH228-3.0-3.45	✓	
BH228-4.0-4.2		✓
BH228-4.5-4.95	✓	
BH228-5.4-5.6		✓
BH228-6.1-6.45		✓
BH228-7.0-7.2		✓
BH228-7.5-7.95	✓	
BH239-0-0.2		✓
BH239-0.8-1.1		✓

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	sPOCAS + %S w/w	On Hold
BH239-1.1-1.3		✓
BH239-1.3-1.6	✓	

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph 03 9763 2500 fax 03 9763 2633
melbourne@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 17925

Client Details

Client	Environmental Investigation Services
Attention	Mitch Delaney
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E3596BD**
Number of Samples	2 Soil
Date samples received	30/08/2019
Date completed instructions received	30/08/2019

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	05/09/2019
Date of Issue	04/09/2019

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Chris De Luca, Operations Manager

Authorised By

Pamela Adams, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		17925-1	17925-2
Your Reference	UNITS	DUPAM5	DUPAM7
Date Sampled		23/08/2019	26/08/2019
Type of sample		Soil	Soil
Date extracted	-	30/08/2019	30/08/2019
Date analysed	-	02/09/2019	02/09/2019
vTRH C_6 - C_9	mg/kg	<25	<25
vTRH C_6 - C_{10}	mg/kg	<25	<25
TRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	108	95

TRH Soil C10-C40 NEPM			
Our Reference	UNITS	17925-1	17925-2
Your Reference		DUPAM5	DUPAM7
Date Sampled		23/08/2019	26/08/2019
Type of sample		Soil	Soil
Date extracted	-	30/08/2019	30/08/2019
Date analysed	-	02/09/2019	02/09/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	310
TRH C_{29} - C_{36}	mg/kg	<100	500
Total +ve TRH (C10-C36)	mg/kg	<50	810
TRH >C_{10} -C_{16}	mg/kg	<50	56
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	56
TRH >C_{16} -C_{34}	mg/kg	<100	640
TRH >C_{34} -C_{40}	mg/kg	<100	310
Total +ve TRH (>C10-C40)	mg/kg	<50	1,000
Surrogate o-Terphenyl	%	81	107

PAHs in Soil			
Our Reference	UNITS	17925-1	17925-2
Your Reference		DUPAM5	DUPAM7
Date Sampled		23/08/2019	26/08/2019
Type of sample		Soil	Soil
Date extracted	-	30/08/2019	30/08/2019
Date analysed	-	02/09/2019	02/09/2019
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	0.2
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	0.2	0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	0.4	0.3
Pyrene	mg/kg	0.3	0.4
Benzo(a)anthracene	mg/kg	0.2	0.2
Chrysene	mg/kg	0.1	0.2
Benzo(b,j&k)fluoranthene	mg/kg	0.4	0.6
Benzo(a)pyrene	mg/kg	0.16	0.23
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2	0.3
Total +ve PAH's	mg/kg	2.0	2.9
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc (Half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc (PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d_{14}	%	92	92

OCP in Soil			
Our Reference	UNITS	17925-1	17925-2
Your Reference		DUPAM5	DUPAM7
Date Sampled		23/08/2019	26/08/2019
Type of sample		Soil	Soil
Date extracted	-	30/08/2019	30/08/2019
Date analysed	-	02/09/2019	02/09/2019
alpha-BHC	mg/kg	<0.1	<0.1
Hexachlorobenzene	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Total +ve reported DDT+DDD+DDE	mg/kg	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	92	92

OP in Soil			
Our Reference	UNITS	17925-1	17925-2
Your Reference		DUPAM5	DUPAM7
Date Sampled		23/08/2019	26/08/2019
Type of sample		Soil	Soil
Date extracted	-	30/08/2019	30/08/2019
Date analysed	-	02/09/2019	02/09/2019
Azinphos-methyl	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Dichlorovos	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	92	92

PCBs in Soil			
Our Reference	UNITS	17925-1	17925-2
Your Reference		DUPAM5	DUPAM7
Date Sampled		23/08/2019	26/08/2019
Type of sample		Soil	Soil
Date extracted	-	30/08/2019	30/08/2019
Date analysed	-	02/09/2019	02/09/2019
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	92	92

Acid Extractable metals in soil			
Our Reference	UNITS	17925-1	17925-2
Your Reference		DUPAM5	DUPAM7
Date Sampled		23/08/2019	26/08/2019
Type of sample		Soil	Soil
Date digested	-	02/09/2019	02/09/2019
Date analysed	-	02/09/2019	02/09/2019
Arsenic	mg/kg	<4	5
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	3	14
Copper	mg/kg	5	20
Lead	mg/kg	31	25
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	1	4
Zinc	mg/kg	24	89

Moisture			
Our Reference		17925-1	17925-2
Your Reference	UNITS	DUPAM5	DUPAM7
Date Sampled		23/08/2019	26/08/2019
Type of sample		Soil	Soil
Date prepared	-	30/08/2019	30/08/2019
Date analysed	-	02/09/2019	02/09/2019
Moisture	%	5.9	28

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 12 hours.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
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-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Note, For OCs 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-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-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.

Method ID	Methodology Summary
Org-012	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD or GC-MS. 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-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. 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-1	[NT]
Date extracted	-			30/08/2019	[NT]	[NT]	[NT]	[NT]	30/08/2019	[NT]
Date analysed	-			02/09/2019	[NT]	[NT]	[NT]	[NT]	02/09/2019	[NT]
vTRH C_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	111	[NT]
vTRH C_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	112	[NT]
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	[NT]	[NT]	106	[NT]
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	[NT]	[NT]	114	[NT]
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	110	[NT]
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	113	[NT]
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	126	[NT]	[NT]	[NT]	[NT]	116	[NT]

QUALITY CONTROL: TRH Soil C10-C40 NEPM					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			30/08/2019	[NT]	[NT]	[NT]	[NT]	30/08/2019	[NT]
Date analysed	-			02/09/2019	[NT]	[NT]	[NT]	[NT]	02/09/2019	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	93	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	93	[NT]
Surrogate o-Terphenyl	%		Org-003	88	[NT]	[NT]	[NT]	[NT]	82	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			30/08/2019	[NT]	[NT]	[NT]	[NT]	30/08/2019	[NT]
Date analysed	-			02/09/2019	[NT]	[NT]	[NT]	[NT]	02/09/2019	[NT]
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	92	[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]	90	[NT]
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	88	[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]	88	[NT]
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	90	[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]	90	[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]	76	[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-d_{14}	%		Org-012	88	[NT]	[NT]	[NT]	[NT]	94	[NT]

QUALITY CONTROL: OCP in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			30/08/2019	[NT]	[NT]	[NT]	[NT]	30/08/2019	[NT]
Date analysed	-			02/09/2019	[NT]	[NT]	[NT]	[NT]	02/09/2019	[NT]
alpha-BHC	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	80	[NT]
Hexachlorobenzene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
gamma-BHC	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
delta-BHC	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	76	[NT]
gamma-Chlordane	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
alpha-chlordane	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Dieldrin	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Endrin	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Methoxychlor	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d_{14}	%		Org-012	88	[NT]	[NT]	[NT]	[NT]	94	[NT]

QUALITY CONTROL: OP in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	17925-2
Date extracted	-			30/08/2019	1	30/08/2019	30/08/2019		30/08/2019	30/08/2019
Date analysed	-			02/09/2019	1	02/09/2019	02/09/2019		02/09/2019	02/09/2019
Azinphos-methyl	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	78	116
Chlorpyrifos-methyl	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dichlorovos	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	100	#
Fenitrothion	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	80	#
Malathion	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d_{14}	%		Org-012	88	1	92	92	0	94	92

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			30/08/2019	[NT]	[NT]	[NT]	[NT]	30/08/2019	[NT]
Date analysed	-			02/09/2019	[NT]	[NT]	[NT]	[NT]	02/09/2019	[NT]
Aroclor 1016	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Aroclor 1260	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d_{14}	%		Org-012	88	[NT]	[NT]	[NT]	[NT]	94	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date digested	-			02/09/2019	[NT]	[NT]	[NT]	[NT]	02/09/2019	[NT]
Date analysed	-			02/09/2019	[NT]	[NT]	[NT]	[NT]	02/09/2019	[NT]
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	[NT]	[NT]	107	[NT]
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	[NT]	[NT]	106	[NT]
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

Report Comments

SVOC: # Percent recovery not available due to sample matrix interference.

SAMPLE AND CHAIN OF CUSTODY FORM

TO:
ENVIROLAB SERVICES PTY LTD
12 ASHLEY STREET
CHATSWOOD NSW 2067
P: (02) 99106200
F: (02) 99106201

Attention: Aileen

EIS Job Number: E3596BD

Date Results Required: STANDARD

Page: 5/6

FROM:
JKEnvironments
REAR OF 115 WICKS ROAD
MACQUARIE PARK, NSW 2113
P: 02-9888 5000 F: 02-9888 5001
Attention: Mitchell Delaney

Location: Brookvale Oval
Sampler: AM

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6	Combo 3	Asbestos (Detection)	Asbestos (WA 500ml method)	pH, CEC and clay content	BTEX	Heavy Metals
23.8.19	101	BH234	0-0.2	A	1	Fill: Silty Sand				X			
23.8.19	102	BH234	0.2-0.4	A	1	Fill: Silty Clayey Sand				X			
23.8.19	103	BH234	0.4-0.6	A	1	Fill: Clayey Sand							
23.8.19	104	BH234	0.6-0.9	A	1	Fill: Silty Clayey Sand							
26.8.19	105	BH235	0-0.2	A	1	Fill: Sandy Silt							
26.8.19	106	BH235	0.2-0.3	A	1	Fill: Sandy Clay			X				
22.8.19	107	BH236	0-0.2	G, A	0	Fill: Silty Sand	X						
22.8.19	108	BH236	0.5-0.7	G, A	0	Fill: Silty Sand	X		X				
22.8.19	109	BH236	1.1-1.3	G, A	0	Silty Sand	X		X				
22.8.19	110	BH237	0-0.2	G, A	0	Fill: Silty Sand	X						
22.8.19	111	BH237	0.3-0.5	G, A	0	Silty Sand			X				
22.8.19	112	BH238	0-0.2	A	1	Fill: Silty Sand							
26.8.19	113	BH239	0-0.2	A	1	Fill: Clayey Sand			X				
26.8.19	114	BH239	1.1-1.3	A	1	Fill: Silty Sand			X				
26.8.19	115	BH240	0-0.2	G, A	0	Fill: Clayey Sand	X						
26.8.19	116	BH240	0.4-0.6	G, A	0	Silty Sand	X		X	X			
21.8.19	117	DUPAM1	-	G	1	DUP Soil							
21.8.19	118	DUPAM2	-	G	1	DUP Soil							
22.8.19	119	DUPAM3	-	G	1	DUP Soil							
22.8.19	120	DUPAM4	-	G	1	DUP Soil	X						
121 23.8.19	—	DUPAM5	- 1	G	1	DUP Soil	X						
122 23.8.19	~~121~~	DUPAM6	-	G	1	DUP Soil	X						
123 26.8.19	—	DUPAM7	- 2	G	1	DUP Soil							
124 26.8.19	~~122~~	DUPAM8	-	G	1	DUP Soil	X						
125 21.8.19	~~123~~	TB1	-	G	1	Trip Blank Soil					X		

Please send DUPAM5 to Envirolab VIC

Please send DUPAM7 to Envirolab VIC

ENVIROLAB
Envirolab Services
25 Research Drive
Croydon South VIC 3136
Ph: (03) 9763 2500

Job No: 17925
Date Received: 30/8/19
Time Received: 11:55
Received By: GS
Temp: Cool/Ambient 11.6°C
Cooling: Ice/Icepack
Security: Intact/Broken/None

Remarks (comments/detection limits required):

Sample Containers:
G - 250mg Glass Jar
A - Ziplock Asbestos Bag
P - Plastic Bag

Relinquished By:	Date:	Time:	Received By:	Date:
	27/8/19		Ellen Wh ELS.	270819 1649

ELS Syd K-Core 29.8.19

224849

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph 03 9763 2500 fax 03 9763 2633
melbourne@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Environmental Investigation Services
Attention	Mitch Delaney

Sample Login Details

Your reference	E3596BD
Envirolab Reference	17925
Date Sample Received	30/08/2019
Date Instructions Received	30/08/2019
Date Results Expected to be Reported	06/09/2019

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	2 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	11.6
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Pamela Adams	Analisa Mathrick
Phone: 03 9763 2500	**Phone: 03 9763 2500**
Fax: 03 9763 2633	**Fax: 03 9763 2633**
Email: padams@envirolab.com.au	**Email: amathrick@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph 03 9763 2500 fax 03 9763 2633
melbourne@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	TRH Soil C10-C40 NEPM	PAHs in Soil	OCP in Soil	OP in Soil	PCBsin Soil	Acid Extractable metalsin soil
DUPAM5	✓	✓	✓	✓	✓	✓	✓
DUPAM7	✓	✓	✓	✓	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 224849-A

Client Details

Client	Environmental Investigation Services
Attention	Mitchell Delaney
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E32596BD, Brookvale Oval**
Number of Samples	128 Soil, 1 Water, 4 Material
Date samples received	27/08/2019
Date completed instructions received	05/09/2019

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	12/09/2019
Date of Issue	11/09/2019

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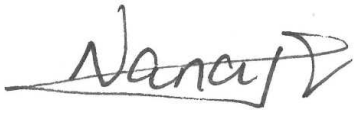
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Josh Williams, Chemist
Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

sTPH in Soil (C10-C40)-Silica		
Our Reference		224849-A-120
Your Reference	UNITS	DUPAM4
Depth		-
Date Sampled		22/08/2019
Type of sample		Soil
Date extracted	-	06/09/2019
Date analysed	-	07/09/2019
TPH C_{10} - C_{14}	mg/kg	<50
TPH C_{15} - C_{28}	mg/kg	<100
TPH C_{29} - C_{36}	mg/kg	110
TPH >C_{10} -C_{16}	mg/kg	50
TPH >C_{16} -C_{34}	mg/kg	140
TPH >C_{34} -C_{40}	mg/kg	<100
Surrogate o-Terphenyl	%	77

PAHs in Soil		
Our Reference		224849-A-100
Your Reference	UNITS	BH233
Depth		0.4-0.6
Date Sampled		26/08/2019
Type of sample		Soil
Date extracted	-	06/09/2019
Date analysed	-	06/09/2019
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	98

Moisture		
Our Reference		224849-A-100
Your Reference	UNITS	BH233
Depth		0.4-0.6
Date Sampled		26/08/2019
Type of sample		Soil
Date prepared	-	06/09/2019
Date analysed	-	09/09/2019
Moisture	%	7.3

PAHs in TCLP (USEPA 1311)			
Our Reference		224849-A-39	224849-A-99
Your Reference	UNITS	BH213	BH233
Depth		1.2-1.4	0.3-0.4
Date Sampled		21/08/2019	26/08/2019
Type of sample		Soil	Soil
pH of soil for fluid# determ.	pH units	8.5	8.2
pH of soil TCLP (after HCl)	pH units	1.7	1.7
Extraction fluid used	-	1	1
pH of final Leachate	pH units	5.0	5.0
Date extracted	-	09/09/2019	09/09/2019
Date analysed	-	10/09/2019	10/09/2019
Naphthalene in TCLP	mg/L	<0.001	<0.001
Acenaphthylene in TCLP	mg/L	<0.001	<0.001
Acenaphthene in TCLP	mg/L	<0.001	<0.001
Fluorene in TCLP	mg/L	<0.001	<0.001
Phenanthrene in TCLP	mg/L	<0.001	<0.001
Anthracene in TCLP	mg/L	<0.001	<0.001
Fluoranthene in TCLP	mg/L	<0.001	<0.001
Pyrene in TCLP	mg/L	<0.001	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001	<0.001
Chrysene in TCLP	mg/L	<0.001	<0.001
Benzo(bjk)fluoranthene in TCLP	mg/L	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001
Total +ve PAH's	mg/L	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	86	96

Method ID	Methodology Summary
EXTRACT.7	Toxicity Characteristic Leaching Procedure (TCLP) using Zero Headspace Extraction (zHE) using AS4439 and USEPA 1311.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using in house method INORG-004. Please note that the mass used may be scaled down from the default based on sample mass available.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
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.
Org-012	Leachates are extracted with Dichloromethane and analysed by GC-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.

QUALITY CONTROL: sTPH in Soil (C10-C40)-Silica						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			06/09/2019	120	06/09/2019	06/09/2019		06/09/2019	[NT]
Date analysed	-			07/09/2019	120	07/09/2019	07/09/2019		07/09/2019	[NT]
TPH C_{10} - C_{14}	mg/kg	50	Org-003	<50	120	<50	<50	0	73	[NT]
TPH C_{15} - C_{28}	mg/kg	100	Org-003	<100	120	<100	110	10	77	[NT]
TPH C_{29} - C_{36}	mg/kg	100	Org-003	<100	120	110	120	9	75	[NT]
TPH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	120	50	52	4	73	[NT]
TPH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	120	140	150	7	77	[NT]
TPH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	120	<100	<100	0	75	[NT]
Surrogate o-Terphenyl	%		Org-003	70	120	77	77	0	76	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	[NT]
Date extracted	-			06/09/2019	[NT]	[NT]	[NT]	[NT]	06/09/2019	[NT]
Date analysed	-			06/09/2019	[NT]	[NT]	[NT]	[NT]	06/09/2019	[NT]
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	126	[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]	110	[NT]
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	106	[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]	106	[NT]
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	108	[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]	108	[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]	100	[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	100	[NT]	[NT]	[NT]	[NT]	101	[NT]

QUALITY CONTROL: PAHs in TCLP (USEPA 1311)						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date extracted	-			09/09/2019	39	09/09/2019	09/09/2019		09/09/2019	[NT]
Date analysed	-			10/09/2019	39	10/09/2019	10/09/2019		10/09/2019	[NT]
Naphthalene in TCLP	mg/L	0.001	Org-012	<0.001	39	<0.001	<0.001	0	128	[NT]
Acenaphthylene in TCLP	mg/L	0.001	Org-012	<0.001	39	<0.001	<0.001	0	[NT]	[NT]
Acenaphthene in TCLP	mg/L	0.001	Org-012	<0.001	39	<0.001	<0.001	0	[NT]	[NT]
Fluorene in TCLP	mg/L	0.001	Org-012	<0.001	39	<0.001	<0.001	0	112	[NT]
Phenanthrene in TCLP	mg/L	0.001	Org-012	<0.001	39	<0.001	<0.001	0	96	[NT]
Anthracene in TCLP	mg/L	0.001	Org-012	<0.001	39	<0.001	<0.001	0	[NT]	[NT]
Fluoranthene in TCLP	mg/L	0.001	Org-012	<0.001	39	<0.001	<0.001	0	92	[NT]
Pyrene in TCLP	mg/L	0.001	Org-012	<0.001	39	<0.001	<0.001	0	100	[NT]
Benzo(a)anthracene in TCLP	mg/L	0.001	Org-012	<0.001	39	<0.001	<0.001	0	[NT]	[NT]
Chrysene in TCLP	mg/L	0.001	Org-012	<0.001	39	<0.001	<0.001	0	98	[NT]
Benzo(bjk)fluoranthene in TCLP	mg/L	0.002	Org-012	<0.002	39	<0.002	<0.002	0	[NT]	[NT]
Benzo(a)pyrene in TCLP	mg/L	0.001	Org-012	<0.001	39	<0.001	<0.001	0	94	[NT]
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	0.001	Org-012	<0.001	39	<0.001	<0.001	0	[NT]	[NT]
Dibenzo(a,h)anthracene in TCLP	mg/L	0.001	Org-012	<0.001	39	<0.001	<0.001	0	[NT]	[NT]
Benzo(g,h,i)perylene in TCLP	mg/L	0.001	Org-012	<0.001	39	<0.001	<0.001	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	130	39	86	78	10	101	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

Jessica Hie

From: Mitchell Delaney <MDelaney@jkenvironments.com.au>
Sent: Thursday, 5 September 2019 4:44 PM
To: Samplereceipt
Subject: Additional analysis request - 224849 Brookvale

Hi,

I refer to the lab report 224849. Apologies we left a number (No.2) out of our job number, can we please revise the report changing our job number from E3596BD to E32596BD.

Additionally can we please schedule the following analysis:

- BH233 (0.4-0.6m) for PAHs; – 100.
- DUPAM4 (silica gel clean up); – 120.
- BH233 (0.3-0.4m) TCLP for PAHs; – 99.
- BH213 (1.2-1.4m) TCLP for PAHs. – 39.

224849 - A
Due: 12/9/19
Std TAT.

Standard turnaround is fine.

Many thanks.

Regards
Mitchell Delaney
Senior Associate | Environmental Scientist

T: +612 9888 5000
E: MDelaney@jkenvironments.com.au
www.jkenvironments.com.au

PO Box 976
NORTH RYDE BC NSW 1670
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JKEnvironments

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Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Environmental Investigation Services
Attention	Mitchell Delaney

Sample Login Details

Your reference	E32596BD, Brookvale Oval
Envirolab Reference	224849-A
Date Sample Received	27/08/2019
Date Instructions Received	05/09/2019
Date Results Expected to be Reported	12/09/2019

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	128 Soil, 1 Water, 4 Material
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	5.6
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

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Sample ID	sTPH in Soil (C10-C40)-Silica	PAHs in Soil	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	On Hold
BH201-0.12-0.2																								✓
BH201-0.2-0.6																								✓
BH201-0.6-0.95																								✓
BH202-0.12-0.2																								✓
BH203-0.12-0.2																								✓
BH203-0.4-0.5																								✓
BH203-0.6-0.95																								✓
BH204-0.12-0.2																								✓
BH204-0.2-0.4																								✓
BH204-0.9-1.0																								✓
BH205-0.12-0.2																								✓
BH205-0.2-0.4																								✓
BH205-0.8-1.0																								✓
BH205-1.2-1.4																								✓
BH206-0.09-0.15																								✓
BH206-0.15-0.5																								✓
BH206-0.9-1.1																								✓
BH207-0.12-0.2																								✓
BH207-0.5-0.95																								✓
BH207-1.5-1.7																								✓

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Sample ID	sTPH in Soil (C10-C40)-Silica	PAHs in Soil	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	On Hold
BH208-0.09-0.3																								✓
BH208-0.3-0.5																								✓
BH208-1.2-1.5																								✓
BH209-0-0.2																								✓
BH209-0.3-0.5																								✓
BH209-0.5-0.7																								✓
BH209-0.7-0.8																								✓
BH210-0-0.1																								✓
BH210-0.3-0.5																								✓
BH211-0-0.2																								✓
BH211-0.5-0.75																								✓
BH211-1.3-1.5																								✓
BH212-0-0.2																								✓
BH212-0.3-0.5																								✓
BH212-1.0-1.2																								✓
BH212-1.3-1.5																								✓
BH213-0-0.2																								✓
BH213-0.3-0.5																								✓
BH213-1.2-1.4			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH213-1.4-1.9																								✓

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BH213-1.9-2.1																								✓
BH214-0-0.2																								✓
BH214-0.5-0.95																								✓
BH214-1.5-1.95																								✓
BH214-2.4-2.7																								✓
BH215-0-0.2																								✓
BH215-0.3-0.5																								✓
BH215-0.5-0.95																								✓
BH215-1.5-1.95																								✓
BH215-2.7-2.9																								✓
BH216-0-0.2																								✓
BH216-0.3-0.5																								✓
BH216-0.5-0.95																								✓
BH216-1.5-1.95																								✓
BH216-2.3-2.5																								✓
BH217-0-0.2																								✓
BH217-0.5-0.75																								✓
BH217-0.75-0.95																								✓
BH217-1.4-1.45																								✓
BH218-0-0.2																								✓

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BH218-0.3-0.6																								✓
BH218-1.3-1.5																								✓
BH218-1.5-1.95																								✓
BH219-0-0.2																								✓
BH219-0.5-0.95																								✓
BH219-1.4-1.6																								✓
BH220-0-0.1																								✓
BH220-0.3-0.5																								✓
BH221-0-0.2																								✓
BH221-0.3-0.5																								✓
BH221-0.75-0.95																								✓
BH222-0-0.2																								✓
BH222-0.4-0.5																								✓
BH223-0-0.2																								✓
BH223-0.5-0.95																								✓
BH223-1.5-1.7																								✓
BH224-0-0.2																								✓
BH225-0.03-0.2																								✓
BH225-0.6-0.8																								✓
BH226-0-0.2																								✓

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BH227-0-0.2																								✓
BH227-0.5-0.7																								✓
BH228-0-0.2																								✓
BH229-0-0.2																								✓
BH229-0.2-0.4																								✓
BH229-0.6-0.9																								✓
BH229-1.1-1.3																								✓
BH229-1.3-1.5																								✓
BH230-0-0.2																								✓
BH230-0.2-0.4																								✓
BH231-0-0.2																								✓
BH232-0-0.2																								✓
BH232-0.2-0.4																								✓
BH232-0.4-0.6																								✓
BH232-0.65-0.9																								✓
BH232-0.9-1.1																								✓
BH232-1.2-1.4																								✓
BH233-0-0.2																								✓
BH233-0.3-0.4			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH233-0.4-0.6		✓																						

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BH234-0-0.2																								✓
BH234-0.2-0.4																								✓
BH234-0.4-0.6																								✓
BH234-0.6-0.9																								✓
BH235-0-0.2																								✓
BH235-0.2-0.3																								✓
BH236-0-0.2																								✓
BH236-0.5-0.7																								✓
BH236-1.1-1.3																								✓
BH237-0-0.2																								✓
BH237-0.3-0.5																								✓
BH238-0-0.2																								✓
BH239-0-0.2																								✓
BH239-1.1-1.3																								✓
BH240-0-0.2																								✓
BH240-0.4-0.6																								✓
DUPAM1																								✓
DUPAM2																								✓
DUPAM3																								✓
DUPAM4	✓																							

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DUPAM5																								✓
DUPAM6																								✓
DUPAM7																								✓
DUPAM8																								✓
TB1																								✓
TB2																								✓
FRAM1																								✓
AMF1-0.3-1.4																								✓
AMF2-0-0.2																								✓
AMF3																								✓
AMF4-0.4-1.2																								✓
BH239-0.6-0.8																								✓
TS1																								✓
BH201 - [TRIPLICATE]-0.12-0.2																								✓
BH217 - [TRIPLICATE]-0-0.2																								✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

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Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt. Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

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CERTIFICATE OF ANALYSIS 225518

Client Details

Client	Environmental Investigation Services
Attention	Mitchell Delaney
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E32596BD, Brookvale**
Number of Samples	5 Water
Date samples received	05/09/2019
Date completed instructions received	05/09/2019

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	12/09/2019
Date of Issue	10/09/2019

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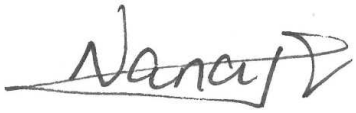
Results Approved By
Jaimie Loa-Kum-Cheung, Metals Supervisor
Josh Williams, Chemist
Priya Samarawickrama, Senior Chemist
Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

VOCs in water				
Our Reference	UNITS	225518-1	225518-2	225518-3
Your Reference		MW206	MW210	MW228
Date Sampled		04/09/2019	04/09/2019	04/09/2019
Type of sample		Water	Water	Water
Date extracted	-	06/09/2019	06/09/2019	06/09/2019
Date analysed	-	07/09/2019	07/09/2019	07/09/2019
Dichlorodifluoromethane	µg/L	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1
Chloroform	µg/L	10	<1	<1
2,2-dichloropropane	µg/L	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1
Benzene	µg/L	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1
Bromodichloromethane	µg/L	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1
Toluene	µg/L	<1	<1	<1
1,3-dichloropropane	µg/L	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1

VOCs in water				
Our Reference	UNITS	225518-1	225518-2	225518-3
Your Reference		MW206	MW210	MW228
Date Sampled		04/09/2019	04/09/2019	04/09/2019
Type of sample		Water	Water	Water
Bromoform	µg/L	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2
Styrene	µg/L	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1
o-xylene	µg/L	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1
Surrogate Dibromofluoromethane	%	108	100	99
Surrogate toluene-d8	%	98	96	99
Surrogate 4-BFB	%	107	107	109

vTRH(C6-C10)/BTEXN in Water						
Our Reference	UNITS	225518-1	225518-2	225518-3	225518-4	225518-5
Your Reference		MW206	MW210	MW228	DUPAM1	TSW1
Date Sampled		04/09/2019	04/09/2019	04/09/2019	04/09/2019	04/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	06/09/2019	06/09/2019	06/09/2019	06/09/2019	06/09/2019
Date analysed	-	07/09/2019	07/09/2019	07/09/2019	07/09/2019	07/09/2019
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	[NA]
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	[NA]
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	[NA]
Benzene	µg/L	<1	<1	<1	<1	112%
Toluene	µg/L	<1	<1	<1	<1	105%
Ethylbenzene	µg/L	<1	<1	<1	<1	104%
m+p-xylene	µg/L	<2	<2	<2	<2	101%
o-xylene	µg/L	<1	<1	<1	<1	104%
Naphthalene	µg/L	<1	<1	<1	<1	[NA]
Surrogate Dibromofluoromethane	%	108	100	99	100	101
Surrogate toluene-d8	%	98	96	99	99	101
Surrogate 4-BFB	%	107	107	109	104	102

svTRH (C10-C40) in Water					
Our Reference		225518-1	225518-2	225518-3	225518-4
Your Reference	UNITS	MW206	MW210	MW228	DUPAM1
Date Sampled		04/09/2019	04/09/2019	04/09/2019	04/09/2019
Type of sample		Water	Water	Water	Water
Date extracted	-	06/09/2019	06/09/2019	06/09/2019	06/09/2019
Date analysed	-	07/09/2019	07/09/2019	07/09/2019	07/09/2019
TRH C_{10} - C_{14}	µg/L	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100
Surrogate o-Terphenyl	%	94	89	70	85

PAHs in Water - Low Level					
Our Reference	UNITS	225518-1	225518-2	225518-3	225518-4
Your Reference		MW206	MW210	MW228	DUPAM1
Date Sampled		04/09/2019	04/09/2019	04/09/2019	04/09/2019
Type of sample		Water	Water	Water	Water
Date extracted	-	06/09/2019	06/09/2019	06/09/2019	06/09/2019
Date analysed	-	06/09/2019	06/09/2019	06/09/2019	06/09/2019
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	92	96	70	79

HM in water - dissolved					
Our Reference	UNITS	225518-1	225518-2	225518-3	225518-4
Your Reference		MW206	MW210	MW228	DUPAM1
Date Sampled		04/09/2019	04/09/2019	04/09/2019	04/09/2019
Type of sample		Water	Water	Water	Water
Date prepared	-	06/09/2019	06/09/2019	06/09/2019	06/09/2019
Date analysed	-	06/09/2019	06/09/2019	06/09/2019	06/09/2019
Arsenic-Dissolved	µg/L	<1	<1	<1	<1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	<1	<1	<1
Copper-Dissolved	µg/L	<1	<1	<1	<1
Lead-Dissolved	µg/L	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	2	<1	3	<1
Zinc-Dissolved	µg/L	22	8	20	8

Miscellaneous Inorganics				
Our Reference	UNITS	225518-1	225518-2	225518-3
Your Reference		MW206	MW210	MW228
Date Sampled		04/09/2019	04/09/2019	04/09/2019
Type of sample		Water	Water	Water
Date prepared	-	05/09/2019	05/09/2019	05/09/2019
Date analysed	-	05/09/2019	05/09/2019	05/09/2019
pH	pH Units	6.3	4.9	5.9
Electrical Conductivity	µS/cm	450	340	380

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
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	-			06/09/2019	1	06/09/2019	09/09/2019		06/09/2019	[NT]
Date analysed	-			07/09/2019	1	07/09/2019	10/09/2019		07/09/2019	[NT]
Dichlorodifluoromethane	µg/L	10	Org-013	<10	1	<10	<10	0	[NT]	[NT]
Chloromethane	µg/L	10	Org-013	<10	1	<10	<10	0	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-013	<10	1	<10	<10	0	[NT]	[NT]
Bromomethane	µg/L	10	Org-013	<10	1	<10	<10	0	[NT]	[NT]
Chloroethane	µg/L	10	Org-013	<10	1	<10	<10	0	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-013	<10	1	<10	<10	0	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-013	<1	1	<1	<1	0	89	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Chloroform	µg/L	1	Org-013	<1	1	10	9	11	91	[NT]
2,2-dichloropropane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-013	<1	1	<1	<1	0	82	[NT]
1,1,1-trichloroethane	µg/L	1	Org-013	<1	1	<1	<1	0	88	[NT]
1,1-dichloropropene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Cyclohexane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Benzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Dibromomethane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Trichloroethene	µg/L	1	Org-013	<1	1	<1	<1	0	93	[NT]
Bromodichloromethane	µg/L	1	Org-013	<1	1	<1	<1	0	89	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Toluene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,3-dichloropropane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-013	<1	1	<1	<1	0	87	[NT]
1,2-dibromoethane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-013	<1	1	<1	<1	0	90	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Bromoform	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
m+p-xylene	µg/L	2	Org-013	<2	1	<2	<2	0	[NT]	[NT]
Styrene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
o-xylene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,2,3-trichloropropane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Bromobenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-013	99	1	108	99	9	100	[NT]
Surrogate toluene-d8	%		Org-013	98	1	98	99	1	98	[NT]
Surrogate 4-BFB	%		Org-013	105	1	107	109	2	108	[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	-			06/09/2019	1	06/09/2019	09/09/2019		06/09/2019	[NT]
Date analysed	-			07/09/2019	1	07/09/2019	10/09/2019		07/09/2019	[NT]
TRH C_6 - C_9	µg/L	10	Org-016	<10	1	<10	<10	0	98	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	1	<10	<10	0	98	[NT]
Benzene	µg/L	1	Org-016	<1	1	<1	<1	0	90	[NT]
Toluene	µg/L	1	Org-016	<1	1	<1	<1	0	90	[NT]
Ethylbenzene	µg/L	1	Org-016	<1	1	<1	<1	0	102	[NT]
m+p-xylene	µg/L	2	Org-016	<2	1	<2	<2	0	103	[NT]
o-xylene	µg/L	1	Org-016	<1	1	<1	<1	0	101	[NT]
Naphthalene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-016	99	1	108	99	9	100	[NT]
Surrogate toluene-d8	%		Org-016	98	1	98	99	1	98	[NT]
Surrogate 4-BFB	%		Org-016	105	1	107	109	2	108	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	225518-2
Date extracted	-			06/09/2019	4	06/09/2019	06/09/2019		06/09/2019	06/09/2019
Date analysed	-			07/09/2019	4	07/09/2019	07/09/2019		07/09/2019	07/09/2019
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	4	<50	<50	0	127	90
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	4	<100	<100	0	102	73
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	4	<100	<100	0	118	77
TRH >C_{10} - C_{16}	µg/L	50	Org-003	<50	4	<50	<50	0	127	90
TRH >C_{16} - C_{34}	µg/L	100	Org-003	<100	4	<100	<100	0	102	73
TRH >C_{34} - C_{40}	µg/L	100	Org-003	<100	4	<100	<100	0	118	77
Surrogate o-Terphenyl	%		Org-003	102	4	85	89	5	130	89

QUALITY CONTROL: PAHs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	225518-2
Date extracted	-			06/09/2019	4	06/09/2019	06/09/2019		06/09/2019	06/09/2019
Date analysed	-			06/09/2019	4	06/09/2019	06/09/2019		06/09/2019	06/09/2019
Naphthalene	µg/L	0.2	Org-012	<0.2	4	<0.2	<0.2	0	118	126
Acenaphthylene	µg/L	0.1	Org-012	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-012	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Fluorene	µg/L	0.1	Org-012	<0.1	4	<0.1	<0.1	0	120	108
Phenanthrene	µg/L	0.1	Org-012	<0.1	4	<0.1	<0.1	0	104	94
Anthracene	µg/L	0.1	Org-012	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-012	<0.1	4	<0.1	<0.1	0	102	92
Pyrene	µg/L	0.1	Org-012	<0.1	4	<0.1	<0.1	0	110	98
Benzo(a)anthracene	µg/L	0.1	Org-012	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Chrysene	µg/L	0.1	Org-012	<0.1	4	<0.1	<0.1	0	104	92
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-012	<0.2	4	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-012	<0.1	4	<0.1	<0.1	0	100	88
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-012	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-012	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-012	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	95	4	79	89	12	91	91

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date prepared	-			06/09/2019	1	06/09/2019	06/09/2019		06/09/2019	[NT]
Date analysed	-			06/09/2019	1	06/09/2019	06/09/2019		06/09/2019	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	97	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	1	<0.1	<0.1	0	95	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	99	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	99	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	98	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	1	<0.05	<0.05	0	104	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	1	2	2	0	97	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	1	22	26	17	95	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			05/09/2019	3	05/09/2019	05/09/2019		05/09/2019	[NT]
Date analysed	-			05/09/2019	3	05/09/2019	05/09/2019		05/09/2019	[NT]
pH	pH Units		Inorg-001	[NT]	3	5.9	5.9	0	101	[NT]
Electrical Conductivity	µS/cm	1	Inorg-002	<1	3	380	380	0	102	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	EIS Job Number: E32596BD Date Results Required: STANDARD Page: 1/1	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Mitch Delaney

Location:	Brookvale	Sample Preserved in Esky on Ice
Sampler:	AM	Tests Required

Date Sampled	Lab Ref:	Sample Number	Sample Containers	PID	Sample Description	3L	VOCs	pH/EC	BTEX								
4/09/2019	1	MW206	G1,H, 4xV	2.7	Water	X	X	X									
4/09/2019	2	MW210	G1,H,P,4xV	0.2	Water	X	X	X									
4/09/2019	3	MW228	G1,H,P,4xV	1.1	Water	X	X	X									
4/09/2019	4	DUPAM1	G1,H,2xV	NA	Water	X											
4/09/2019	5	TSW1	1xV	NA	Water				X								

Remarks (comments/detection limits required):	Sample Containers:
	G1 - 500ml Amber Galss bottle V - BTEX vial H - HNO3 Washe PVC P - Plastic PVC bottle

Relinquished By:	Date:	Time:	Received By:	Date:
MJ	5/9/19	1357	Ray	5/9/2019

ENVIROLAB

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

Job No: 225518
Date Received: 5/9/2019
Time Received: 1357
Received by: RL
Temp: Cool/Ambient 6.2
Cooling: Ice/Icepack
Security: Intact/Broken/None

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Environmental Investigation Services
Attention	Mitchell Delaney

Sample Login Details

Your reference	E32596BD, Brookvale
Envirolab Reference	225518
Date Sample Received	05/09/2019
Date Instructions Received	05/09/2019
Date Results Expected to be Reported	12/09/2019

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	5 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	6.2
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	VOCs in water	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water - Low Level	HM in water - dissolved	pH	Electrical Conductivity
MW206	✓	✓	✓	✓	✓	✓	✓
MW210	✓	✓	✓	✓	✓	✓	✓
MW228	✓	✓	✓	✓	✓	✓	✓
DUPAM1		✓	✓	✓	✓		
TSW1		✓					

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Appendix F: Report Explanatory Notes

Standard Sampling Procedure

These protocols specify the basic procedures to be used when sampling soils or groundwater for environmental site assessments undertaken by JKE. The purpose of these protocols is to provide standard methods for: sampling, decontamination procedures for sampling equipment, sample preservation, sample storage and sample handling. Deviations from these procedures must be recorded.

A. Soil Sampling

- Prepare a borehole/test pit log or made a note of the sample description for stockpiles.
- Layout sampling equipment on clean plastic sheeting to prevent direct contact with ground surface. The work area should be at a distance from the drill rig/excavator such that the machine can operate in a safe manner.
- Ensure all sampling equipment has been decontaminated prior to use.
- Remove any surface debris from the immediate area of the sampling location.
- Collect samples and place in glass jar with a Teflon seal. This should be undertaken as quickly as possible to prevent the loss of any volatiles. If possible, fill the glass jars completely.
- Collect samples for asbestos analysis and place in a zip-lock plastic bag.
- Label the sampling containers with the JKE job number, sample location (eg. BH1), sampling depth interval and date. If more than one sample container is used, this should also be indicated (eg. 2 = Sample jar 1 of 2 jars).
- Photoionisation detector (PID) screening of volatile organic compounds (VOCs) should be undertaken on samples using the soil sample headspace method. Headspace measurements are taken following equilibration of the headspace gasses in partly filled zip-lock plastic bags. PID headspace data is recorded on the borehole/test pit log and the chain of custody forms.
- Record the lithology of the sample and sample depth on the borehole/test pit log generally in accordance with AS1726-2017[24].
- Store the sample in a sample container cooled with ice or chill packs. On completion of the sampling the sample container should be delivered to the lab immediately or stored in the refrigerator prior to delivery to the lab. All samples are preserved in accordance with the standards outlined in the report.
- Check for the presence of groundwater after completion of each borehole using an electronic dip metre or water whistle. Boreholes should be left open until the end of fieldwork where it is safe to do so. All groundwater levels in the boreholes should be rechecked on the completion of the fieldwork.
- Backfill the boreholes/test pits with the excavation cuttings or clean sand prior to leaving the site.

B. Decontamination Procedures for Soil Sampling Equipment

- All sampling equipment should be decontaminated between every sampling location. This excludes single use PVC tubing used for push tubes etc. Equipment and materials required for the decontamination include:
  - Phosphate free detergent (Decon 90);
  - Potable water;
  - Stiff brushes; and
  - Plastic sheets.
- Ensure the decontamination materials are clean prior to proceeding with the decontamination.
- Fill both buckets with clean potable water and add phosphate free detergent to one bucket.
- In the bucket containing the detergent, scrub the sampling equipment until all the material attached to the equipment has been removed.
- Rinse sampling equipment in the bucket containing potable water.

[24] Standards Australia, (2017), *Geotechnical Site Investigations.* (AS1726-2017)

- Place cleaned equipment on clean plastic sheets.

If all materials are not removed by this procedure, high-pressure water cleaning is recommended. If any equipment is not completely decontaminated by both these processes, then the equipment should not be used until it has been thoroughly cleaned.

C. Groundwater Sampling

Groundwater samples are more sensitive to contamination than soil samples and therefore adhesion to this protocol is particularly important to obtain reliable, reproducible results. The recommendations detailed in AS/NZS 5667.1:1998 are considered to form a minimum standard.

The basis of this protocol is to maintain the security of the borehole and obtain accurate and representative groundwater samples. The following procedure should be used for collection of groundwater samples from previously installed groundwater monitoring wells.

- After monitoring well installation, at least three bore volumes should be pumped from the monitoring wells (well development) to remove any water introduced during the drilling process and/or the water that is disturbed during installation of the monitoring well. This should be completed prior to purging and sampling.
- Groundwater monitoring wells should then be left to recharge for at least three days before purging and sampling. Prior to purging or sampling, the condition of each well should observed and any anomalies recorded on the field data sheets. The following information should be noted: the condition of the well, noting any signs of damage, tampering or complete destruction; the condition and operation of the well lock; the condition of the protective casing and the cement footing (raised or cracked); and, the presence of water between protective casing and well.
- Measure the groundwater level from the collar of the piezometer/monitoring well using an electronic dip meter. The collar level should be taken (if required) during the site visit using a dumpy level and staff.
- Purging and sampling of piezometers/monitoring wells is done on the same site visit when using micro-purge (or other low flow) techniques.
- Layout and organize all equipment associated with groundwater sampling in a location where they will not interfere with the sampling procedure and will not pose a risk of contaminating samples. Equipment generally required includes:
  - Stericup single-use filters (for heavy metals samples);
  - Bucket with volume increments;
  - Sample containers: teflon bottles with 1 ml nitric acid, 75mL glass vials with 1 mL hydrochloric acid, 1 L amber glass bottles;
  - Bucket with volume increments;
  - Flow cell;
  - pH/EC/Eh/Temperature meters;
  - Plastic drums used for transportation of purged water;
  - Esky and ice;
  - Nitrile gloves;
  - Distilled water (for cleaning);
  - Electronic dip meter;
  - Low flow peristaltic pump and associated tubing; and
  - Groundwater sampling forms.
- Ensure all non-disposable sampling equipment is decontaminated or that new disposable equipment is available prior to any work commencing at a new location. The procedure for decontamination of groundwater equipment is outlined at the end of this section.

- Disposable gloves should be used whenever samples are taken to protect the sampler and to assist in avoidance of contamination.
- Groundwater samples are obtained from the monitoring wells using low flow sampling equipment to reduce the disturbance of the water column and loss of volatiles.
- During pumping to purge the well, the pH, temperature, conductivity, dissolved oxygen, redox potential and groundwater levels are monitored (where possible) using calibrated field instruments to assess the development of steady state conditions. Steady state conditions are generally considered to have been achieved when the difference in the pH measurements is less than 0.2 units, the difference in conductivity is less than 10% and whilst the well is no longer in draw-down.
- All measurements are recorded on specific data sheets.
- Once steady state conditions are considered to have been achieved, groundwater samples are obtained directly from the pump tubing and placed in appropriate glass bottles, BTEX vials or plastic bottles.
- All samples are preserved in accordance with water sampling requirements specified by the laboratory and placed in an insulated container with ice. Groundwater samples are preserved by immediate storage in an insulated sample container with ice.
- At the end of each water sampling complete a chain of custody form for samples being sent to the laboratory.

D. <u>Decontamination Procedures for Groundwater Sampling Equipment</u>

- All equipment associated with the groundwater sampling procedure (other than single-use items) are decontaminated between every sampling location.
- The following equipment and materials are required for the decontamination procedure:
  - Phosphate free detergent;
  - Potable water;
  - Distilled water; and
  - Plastic Sheets or bulk bags (plastic bags).
- Fill one bucket with clean potable water and phosphate free detergent, and one bucket with distilled water.
- Flush potable water and detergent through pump head. Wash sampling equipment and pump head using brushes in the bucket containing detergent until all materials attached to the equipment are removed.
- Flush pump head with distilled water.
- Change water and detergent solution after each sampling location.
- Rinse sampling equipment in the bucket containing distilled water.
- Place cleaned equipment on clean plastic sheets.
- If all materials are not removed by this procedure that equipment should not be used until it has been thoroughly cleaned

QA/QC Definitions

The QA/QC terms used in this report are defined below. The definitions are in accordance with US EPA publication SW-846, entitled *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (1994)[25] methods and those described in *Environmental Sampling and Analysis, A Practical Guide,* (1991)[26]. The NEPM (2013) is consistent with these documents.

A. Practical Quantitation Limit (PQL), Limit of Reporting (LOR) & Estimated Quantitation Limit (EQL)

These terms all refer to the concentration above which results can be expressed with a minimum 95% confidence level. The laboratory reporting limits are generally set at ten times the standard deviation for the Method Detection Limit for each specific analyte. For the purposes of this report the LOR, PQL, and EQL are considered to be equivalent.

When assessing laboratory data it should be borne in mind that values at or near the PQL have two important limitations: *"The uncertainty of the measurement value can approach, and even equal, the reported value. Secondly, confirmation of the analytes reported is virtually impossible unless identification uses highly selective methods. These issues diminish when reliably measurable amounts of analytes are present. Accordingly, legal and regulatory actions should be limited to data at or above the reliable detection limit*" (Keith, 1991).

B. Precision

The degree to which data generated from repeated measurements differ from one another due to random errors. Precision is measured using the standard deviation or Relative Percent Difference (RPD).

C. Accuracy

Accuracy is a measure of the agreement between an experimental result and the true value of the parameter being measured (i.e. the proximity of an averaged result to the true value, where all random errors have been statistically removed). The assessment of accuracy for an analysis can be achieved through the analysis of known reference materials or assessed by the analysis of surrogates, field blanks, trip spikes and matrix spikes. Accuracy is typically reported as percent recovery.

D. Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is primarily dependent upon the design and implementation of the sampling program. Representativeness of the data is partially ensured by the avoidance of contamination, adherence to sample handing and analysis protocols and use of proper chain-of-custody and documentation procedures.

E. Completeness

Completeness is a measure of the number of valid measurements in a data set compared to the total number of measurements made and overall performance against DQIs. The following information is assessed for completeness:

- Chain-of-custody forms;
- Sample receipt form;
- All sample results reported;

[25] US EPA, (1994). *SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* (US EPA SW-846)

[26] Keith., H, (1991). *Environmental Sampling and Analysis, A Practical Guide*

- All blank data reported;
- All laboratory duplicate and RPDs calculated;
- All surrogate spike data reported;
- All matrix spike and lab control spike (LCS) data reported and RPDs calculated;
- Spike recovery acceptable limits reported; and
- NATA stamp on reports.

F. Comparability

Comparability is the evaluation of the similarity of conditions (e.g. sample depth, sample homogeneity) under which separate sets of data are produced. Data comparability checks include a bias assessment that may arise from the following sources:

- Collection and analysis of samples by different personnel; Use of different techniques;
- Collection and analysis by the same personnel using the same methods but at different times; and
- Spatial and temporal changes (due to environmental dynamics).

G. Blanks

The purpose of laboratory and field blanks is to check for artefacts and interferences that may arise during sampling, transport and analysis.

H. Matrix Spikes

Samples are spiked with laboratory grade standards to detect interactive effects between the sample matrix and the analytes being measured. Matrix Spikes are reported as a percent recovery and are prepared for 1 in every 20 samples. Sample batches that contain less than 20 samples may be reported with a Matrix Spike from another batch. The percent recovery is calculated using the formula below. Acceptable recovery limits are 70% to 130%.

$$\frac{\text{(Spike Sample Result – Sample Result) x 100}}{\text{Concentration of Spike Added}}$$

I. Surrogate Spikes

Samples are spiked with a known concentration of compounds that are chemically related to the analyte being investigated but unlikely to be detected in the environment. The purpose of the Surrogate Spikes is to check the accuracy of the analytical technique. Surrogate Spikes are reported as percent recovery.

J. Duplicates

Laboratory duplicates measure precision, expressed as Relative Percent Difference. Duplicates are prepared from a single field sample and analysed as two separate extraction procedures in the laboratory. The RPD is calculated using the formula where D1 is the sample concentration and D2 is the duplicate sample concentration:

$$\frac{\text{(D1 – D2) x 100}}{\{(D1 + D2)/2\}}$$

Appendix G: Data (QA/QC) Evaluation

Data (QA/QC) Evaluation

A. INTRODUCTION

This Data (QA/QC) Evaluation forms part of the validation process for the DQOs documented in Section 6.1 of this report. Checks were made to assess the data in terms of precision, accuracy, representativeness, comparability and completeness. These 'PARCC' parameters are referred to collectively as DQIs and are defined in the Report Explanatory Notes attached in the report appendices.

1. Field and Laboratory Considerations

The quality of the analytical data produced for this project has been considered in relation to the following:

- Sample collection, storage, transport and analysis;
- Laboratory PQLs;
- Field QA/QC results; and
- Laboratory QA/QC results.

2. Field QA/QC Samples and Analysis

A summary of the field QA/QC samples collected and analysed for this assessment is provided in the following table:

Sample Type	Sample Identification	Frequency (of Sample Type)	Analysis Performed
Intra-laboratory duplicate (soil)	DUPAM3 (primary sample BH211 (0-0.2m))	Approximately 3.5% of primary samples	Heavy metals, TRH/BTEX, PAHs, OCPs, OPPs and PCBs
Intra-laboratory duplicate (soil)	DUPAM4 (primary sample BH227 (0-0.2m))	As above	Heavy metals, TRH/BTEX, PAHs, OCPs, OPPs and PCBs
Inter-laboratory duplicate (soil)	DUPAM5 (primary sample BH217 (0-0.2m))	Approximately 3.5% of primary samples	Heavy metals, TRH/BTEX, PAHs, OCPs, OPPs and PCBs
Inter-laboratory duplicate (soil)	DUPAM7 (primary sample BH229 (0-0.2m))	As above	Heavy metals, TRH/BTEX, PAHs, OCPs, OPPs and PCBs
Intra-laboratory duplicate (groundwater)	DUPAMW1 (primary sample MW210)	Approximately 33.3% of primary samples	Heavy metals, TRH/BTEX and PAHs
Trip spike (soil and groundwater)	TS1 (23.8.19) (soil) TSW1 (4.9.19) (groundwater)	One for the assessment to demonstrate adequacy of preservation, storage and transport methods	BTEX
Trip blank (soil)	TB1 (21.8.19) TB2 (22.8.19)	One for the assessment to demonstrate adequacy of storage and transport methods. One to demonstrate potential	Heavy metals

Sample Type	Sample Identification	Frequency (of Sample Type)	Analysis Performed
		interface from atmospheric fall out.	
Rinsate (soil SPT)	FRAM1 (23.8.19)	One for the assessment to demonstrate adequacy of decontamination methods	BTEX

The results for the field QA/QC samples are detailed in the laboratory summary tables (Table M to Table R inclusive) attached to the assessment report and are discussed in the subsequent sections of this Data (QA/QC) Evaluation report.

3. Data Assessment Criteria

JKE adopted the following criteria for assessing the field and laboratory QA/QC analytical results:

Field Duplicates

Acceptable targets for precision of field duplicates in this report will be 30% or less, consistent with NEPM (2013). RPD failures will be considered qualitatively on a case-by-case basis taking into account factors such as the concentrations used to calculate the RPD (i.e. RPD exceedance where concentrations are close to the PQL are typically not as significant as those where concentrations are reported at least five or 10 times the PQL), sample type, collection methods and the specific analyte where the RPD exceedance was reported.

Field/Trip Blanks and Rinsates

Acceptable targets for field blank and rinsate samples in this report will be less than the PQL for organic analytes. Metals will be considered on a case-by-case basis with regards to typical background concentrations in soils and published drinking water guidelines for waters.

Trip Spikes

Acceptable targets for trip spike samples in this report will be 70% to 130%. This is in line with spike recovery limits adopted by the laboratory for organic analysis.

Laboratory QA/QC

The suitability of the laboratory data is assessed against the laboratory QA/QC criteria which is outlined in the laboratory reports. These criteria were developed and implemented in accordance with the laboratory's NATA accreditation and align with the acceptable limits for QA/QC samples as outlined in NEPM (2013) and other relevant guidelines.

A summary of the acceptable limits adopted by the primary laboratory (Envirolab) is provided below:

RPDs

- Results that are <5 times the PQL, any RPD is acceptable; and
- Results >5 times the PQL, RPDs between 0-50% are acceptable.

Laboratory Control Samples (LCS) and Matrix Spikes

- 70-130% recovery acceptable for metals and inorganics;
- 60-140% recovery acceptable for organics; and
- 10-140% recovery acceptable for VOCs.

Surrogate Spikes

- 60-140% recovery acceptable for general organics; and
- 10-140% recovery acceptable for VOCs.

Method Blanks

- All results less than PQL.

B. DATA EVALUATION

1. Sample Collection, Storage, Transport and Analysis

Samples were collected by trained field staff in accordance with the JKE SSP. The SSP was developed to be consistent with relevant guidelines, including NEPM (2013) and other guidelines made under the CLM Act 1997.

Appropriate sample preservation, handling and storage procedures were adopted. Laboratory analysis was undertaken within specified holding times in accordance with Schedule B(3) of NEPM (2013) and the laboratory NATA accredited methodologies.

JKE note that the temperature on receipt of soil samples was reported to be up to 11.6°C. JKE understand that the temperature is measured at the laboratory using an infrared temperature probe by scanning the outside of the sample container (i.e. one sample jar/container at the time of registering the samples). This procedure is not considered to be robust as there is a potential for the outside of the jar to warm to ambient temperature, or at least to increase from that of the internal contents, relatively quickly. On this basis, JKE are of the opinion that the temperatures reported on the Sample Receipts are unlikely to be reliable or representative of the overall batch. This is further supported by the trip spike recovery results (discussed further below) which reported adequate recovery in the range of 96% to 105%.

Envirolab noted that the asbestos results were reported to be consistent with the recommendations in NEPM (2013), however this level of reporting is outside the scope of their NATA accreditation. In the absence of other available analytical methods for asbestos, this was found to be acceptable for the purpose of this assessment.

Review of the project data also indicated that:

- COC documentation was adequately maintained;
- Sample receipt advice documentation was provided for all sample batches;
- All analytical results were reported; and
- Consistent units were used to report the analysis results.

2. Laboratory PQLs

Appropriate PQLs were adopted for the analysis and all PQLs were below the SAC. However, some of the PQLs (anthracene and Vinyl Chloride) were above the groundwater SAC and have been highlighted on the appropriate report tables attached in the appendices. In light of the concentrations reported for soil and groundwater, JKE are of the opinion that this is not significant, and it does not affect the quality of the dataset as a whole or the outcome of the assessment.

3. Field QA/QC Sample Results

Field Duplicates

The results indicated that field precision was acceptable. RPD non-conformances were reported for some analytes as discussed below:

- Elevated RPDs were reported for two individual heavy metals and TRHs (F2, F3 and F4) in DUPAM4/BH227 (0-0.2m);
- Elevated RPDs were reported for nickel and several PAH compounds in DUPAM5/BH217 (0-0.2m); and
- Elevated RPDs were reported for several PAH compounds and TRH (F3 and F4) in DUPAM7/BH229 (0-0.2m).

Values outside the acceptable limits have been attributed to sample heterogeneity and the difficulties associated with obtaining homogenous duplicate samples of heterogeneous matrices. Many of the outliers are due to values detected very close to the PQLs. All results have been assessed against the SAC adopted for the assessment, therefore the RPD exceedances do not impact the data quality.

Field/Trip Blanks

During the investigation, two soil trip blanks were placed in the esky during sampling, transported back to our office and subsequently forwarded to the laboaratory.

The soil trip blank analysis results were all less than the PQLs with the exception of chromium and zinc with reported concentrations of 2mg/kg and 1mg/kg for TB1 and TB2. Additionally, arsenic was reported at a concentration of 4mg/kg in the trip blank TB2. Low level metals concentrations are typical in washed sand which is utilised as blank material. In JKE's experience, the concentrations reported were consistent with background concentrations in a sand matrix and were not indicative of cross-contamination. Elevated concentrations of chromium, zinc or arsenic were noted encountered in the soil samples analysed for the assessment. On this basis, cross contamination between samples that may have significance for data validity did not occur.

Rinsates

The field rinsate tap water samples FRAM1 (23-08-2019) detected a minor concentration of toluene of 1µg/L. This may be a minor cross-contamination artefact associated with the sampling equipment, however this has not been confirmed. Considering the soil analysis results obtained during the assessment, there is considered to be a low potential for cross contamination to have occurred to an extent that may have significance for data validity.

Trip Spikes

The results ranged from 96% to 112% and indicated that field preservation methods were appropriate.

4. Laboratory QA/QC

The analytical methods implemented by the laboratory were performed in accordance with their NATA accreditation and were consistent with Schedule B(3) of NEPM (2013). The frequency of data reported for the laboratory QA/QC (i.e. duplicates, spikes, blanks, LCS) was considered to be acceptable for the purpose of this assessment.

A review of the laboratory QA/QC data identified the following minor non-conformances:

- Lab Report – 224849:
  - Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria exceeded for sample 224849-1 for copper, lead, nickel and zinc. Therefore, triplicate results were issued as laboratory sample number 224849-134. The spike recovery for lead in the sample 224849-57 at 141% was outside of the acceptance criteria (70-130%), however, the LCS recovery was acceptable at 102% and sample heterogeneity was suspected;
  - PAHs in Soil – The laboratory RPD acceptance criteria was exceeded for the sample 224849-56. Therefore, a triplicate was issued as laboratory sample number 224849-135; and
  - Asbestos-ID in soil, NEPM: All samples were analysed as received. However, samples 224849-16, 42, 67, 69, 98, 107, 108 and 113 were below the minimum 500ml sample volume.
- Lab Report – 17925:
  - sVOC in soil - # recovery was not available due to sample matrix interference.

C. DATA QUALITY SUMMARY

JKE are of the opinion that the data are adequately precise, accurate, representative, comparable and complete to serve as a basis for interpretation to achieve the investigation objectives.

Non-conformances were reported for some field QA/QC samples and laboratory QA/QC analysis. These non-conformances were considered to be sporadic and minor, and were not considered to be indicative of systematic sampling or analytical errors. On this basis, these non-conformances are not considered to materially impact the report findings.

There was only one groundwater monitoring event undertaken for the assessment. On this basis there is some uncertainty around the representativeness of the groundwater data, particularly during different climatic conditions and after wet/dry periods. However, given the low contaminant concentrations reported, the site history and the surrounding land uses, this is not considered to alter the conclusions of the assessment.

Appendix H: Field Work Documents

JKEnvironments

Client:	Urbis	**Job No.:**	E32596BD
Project:	Proposed State of the Art of Excellence and Grandstand Development	**Well No.:**	MW206
Location:	Brookvale Oval, BROOKVALE, NSW	**Depth (m):**	9

WELL FINISH DETAILS

	Gatic Cover ☒	Standpipe ☐	Other (describe) ☐

WELL DEVELOPMENT DETAILS

Method:	Development	**SWL – Before (m):**	6.54
Date:	29/8/19	**Time – Before:**	0935
Undertaken By:	AM	**SWL – After (m):**	—
Total Vol. Removed:	5	**Time – After:**	9:55
PID Reading (ppm):	0.9		

Comments:

DEVELOPMENT MEASUREMENTS

Volume Removed (L)	Temp (°C)	DO (mg/L)	EC (µS/m)	pH	Eh (mV)
3	19.6	2.8	424.6	5.6	114.9
4	18.5	2.8	415.9	5.74	112.6
5	18.2	2.8	406.3	5.67	114.8
Well pumped dry					

Comments: Odours (YES / NO), NAPL/PSH (YES / NO), Sheen (YES / NO), Steady State Achieved (YES / NO)

YSI Used: 4 — medium silt load — low recharge

Tested By:	AM/SW
Date Tested:	29/8/19
Checked By:	MJ
Date:	8/9/19

Remarks:
- Steady state conditions
- Difference in the pH less than 0.2 units, difference in the conductiveity less than 10% and SWL stable/not in drawdown
- Minimum 3 monitoring well volumes purged, unless well purged until it is effectively dry

JKEnvironments

Client:	Urbis	**Job No.:**	E32596BD
Project:	Proposed State of the Art of Excellence and Grandstand Development	**Well No.:**	MW210
Location:	Brookvale Oval, BROOKVALE, NSW	**Depth (m):**	10.9m

WELL FINISH DETAILS

	Gatic Cover ☒	**Standpipe** ☐	**Other (describe)** ☐

WELL DEVELOPMENT DETAILS

Method:	Development	**SWL – Before (m):**	8.81
Date:	29/8/19	**Time – Before:**	8:10 am
Undertaken By:	AM ISL	**SWL – After (m):**	–
Total Vol. Removed:	15L	**Time – After:**	8:35am
PID Reading (ppm):	0		

Comments:

DEVELOPMENT MEASUREMENTS

Volume Removed (L)	Temp (°C)	DO (mg/L)	EC (µS/m)	pH	Eh (mV)
5L	15.9	2.0	344 2	4.43	176.1
8	20	1.6	344.4	4.54	171.0
10	21	2.0	391.6	5.35	118.9
15	17.9	2.6	335.0	5.02	114.9
Pumped Dry					

Comments: Odours (YES / NO), NAPL/PSH (YES / NO), Sheen (YES / NO), Steady State Achieved (YES / NO)

YSI Used: 4 Medium silt load Recharge 1L every 10 mins

Tested By:	29/8/19
Date Tested:	AM/SW
Checked By:	MO
Date:	8/9/19

Remarks:

- Steady state conditions
- Difference in the pH less than 0.2 units, difference in the conductiveity less than 10% and SWL stable/not in drawdown
- Minimum 3 monitoring well volumes purged, unless well purged until it is effectively dry

JKEnvironments

Client:	Urbis	**Job No.:**	E32596BD
Project:	Proposed State of the Art of Excellence and Grandstand Development	**Well No.:**	MW 228
Location:	Brookvale Oval, BROOKVALE, NSW	**Depth (m):**	12

WELL FINISH DETAILS

	Gatic Cover ☒	Standpipe ☐	Other (describe) ☐

WELL DEVELOPMENT DETAILS

Method:	development	**SWL – Before (m):**	9.22
Date:	29/8/19	**Time – Before:**	8:50
Undertaken By:	AM / SW	**SWL – After (m):**	—
Total Vol. Removed:	14	**Time – After:**	9:15
PID Reading (ppm):	0.6		

Comments:

DEVELOPMENT MEASUREMENTS

Volume Removed (L)	Temp (°C)	DO (mg/L)	EC (µS/m)	pH	Eh (mV)
5	20	1.6	401.4	5.18	130.4
~~10~~ 9	20.2	0.8	393.3	5.17	120.2
11	18.4	2.4	411.3	5.48	79.0
14	18.9	3.0	410.3	5.43	77.4
Pumped dry					

Comments: Odours (YES / NO), NAPL/PSH (YES / NO), Sheen (YES / NO), Steady State Achieved (YES / NO)

YSI Used: 4 Low silt load Low recharged

Tested By:	AM/SW
Date Tested:	29/8/19
Checked By:	MD
Date:	8/9/19

Remarks:

- Steady state conditions
- Difference in the pH less than 0.2 units, difference in the conductiveity less than 10% and SWL stable/not in drawdown
- Minimum 3 monitoring well volumes purged, unless well purged until it is effectively dry

JOB NO: E32896BD
LOCATION: Brookvale Oval

EIS

FIELD CALIBRATION FORM

PID

Make: MiniRAE	Model: 2000	Unit: Green	Date of last factory calibration: 17/7/19
Date of calibration: 28/8/19		Name of Calibrator: MMP	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: 100 ppm		Error in measured reading: ± 0 ppm	
Measured reading Acceptable (Yes/No):			

DISSOLVED OXYGEN

Make: YSI	Model: ~~Aqua DY~~
Date of calibration: 29/8/19	Name of Calibrator: AM/SW
Span value: 70% to 130%%	
Measured value: 103 %	
Measured reading Acceptable (Yes/No):	

pH METER

Make: ~~Orion~~ YSI	Model: ~~Four star~~	
Date of calibration: 29/8/19	Name of Calibrator: AM/SW	
Buffer 1: Theoretical pH = 7.01± 0.01	Expiry date: 3/20	Lot No: 324986
Buffer 2: Theoretical pH = 4.01± 0.01	Expiry date: 1/20	Lot No: 322843
Measured reading of Buffer 1: 7.03		
Measured reading of Buffer 2: 4.03		
Slope:	Measured reading Acceptable (Yes/No):	

CONDUCTIVITY METER

Make: ~~Orion~~ YSI	Model: ~~Four star~~		
Date: 29/8/19	Name of Calibrator: AM/SW	Temperature: 11.3 °C	
Calibration solution: Conductivity	Expiry date: 9/19	Lot No: 316816	
Theoretical conductivity at temperature (see solution container): 1035 µS/cm			
Measured conductivity: 845 µS/cm	Measured reading Acceptable (Yes/No):		

REDOX METER

Make: ~~Orion~~ YSI	Model: ~~Four star~~	
Date of calibration: 29/8/19	Name of Calibrator: AM/SW	
Calibration solution: ORP Test Solution	Expiry date: 8 11/23	Lot No: 3640
Theoretical redox value: 240mV		
Measured redox reading: 246 mV	Measured reading Acceptable (Yes/No):	

JKEnvironments

Client:	Urbis	Job No.:	E32596BD
Project:	Proposed State of the Art of Excellence and Grandstand Development	Well No.:	206
Location:	Brookvale Oval, BROOKVALE, NSW	Depth (m):	9m

WELL FINISH

X	Gatic Cover		Standpipe		Other (describe)

WELL PURGE DETAILS:

Method:	Peristaltic Pump	SWL – Before:	5.37
Date:	4/9/19	Time – Before:	14:18
Undertaken By:	AM/SW	Total Vol Removed:	~12L
Pump Program No:	106204	PID (ppm):	27

PURGING / SAMPLING MEASUREMENTS

Time (min)	SWL (m)	Vol (L)	Notes	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)
1422	5.47	1		21.3	2.8	295.3	4.97	144.6
1426	5.79	2		21.0	2.7	291.8	4.63	172.6
1429	6.09	3.5		20.8	2.7	289.7	4.62	175.5
14:33	6.52	5		20.8	3.0	285.7	4.56	179.2
14:36	6.93	6		20.8	3.0	284.7	4.56	180.7
14:39	7.20	7		20.8	3.1	282.8	4.53	182.0
14:42	7.50	8		20.8	3.0	282.9	4.55	182.6
14:45	7.81	9		20.8	3.0	281.1	4.54	182.7
14:48	8.11	10		20.8	2.9	279.9	4.54	182.4
14:51	1.41	11						
Started	Sampling							

Comments: Odours (YES / NO), NAPL/PSH (YES / NO), Sheen (YES / NO), Steady State Achieved (YES / NO)

Sampling Containers Used: 1 x glass amber, 4 x BTEX vials, 1 x HNO3 plastic, 0 x H2SO4 plastic, 0 x unpreserved plastic

YSI used: 4

High Silt Coal

Tested By: Alistair Mitchell	**Remarks:**
Date Tested: 4/9/19	- Steady state conditions
Checked By: MO	- difference in the pH less than 0.2 units, difference in conductivity less than 10% 10% and SWL stable/not in drawdown
Date: 8/9/19	

JKEnvironments

Client:	Urbis	**Job No.:**	E32596BD
Project:	Proposed State of the Art of Excellence and Grandstand Development	**Well No.:**	210
Location:	Brookvale Oval, BROOKVALE, NSW	**Depth (m):**	10.9

WELL FINISH

X	Gatic Cover		Standpipe		Other (describe)

WELL PURGE DETAILS:

Method:	Peristaltic	**SWL – Before:**	7.68
Date:	04SEP19	**Time – Before:**	11:04
Undertaken By:	AM/SW	**Total Vol Removed:**	≈ 12
Pump Program No:	106204	**PID (ppm):**	0.2

PURGING / SAMPLING MEASUREMENTS

Time (min)	SWL (m)	Vol (L)	Notes	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)
11:07	7.73	1		20.7	1.0	345.4	5.37	96.0
11:11	7.76	2		20.6	0.5	346.2	5.27	97.4
11:15	7.80	3		20.6	0.9	327.3	4.82	132.2
11:19	7.81	4		20.6	1.1	321.0	4.67	148.3
11:23	7.82	5		20.7	1.4	317.4	4.59	164.8
11:27	7.84	6		20.7	1.5	316.7	4.55	187.0
11:31	7.84	7		20.7	1.6	316.1	4.53	212.7
11:39	7.84	9		20.7	1.7	314.3	4.49	255.0
Started Sampling								

Comments: Odours (YES / (NO)), NAPL/PSH (YES / (NO)), Sheen (YES / (NO)), Steady State Achieved (YES) / NO)

Sampling Containers Used: 2x glass amber, 6 x BTEX vials, 2 x HNO3 plastic, 0x H2SO4 plastic, 1 x unpreserved plastic

YSI used: 4 Medium Silt Load DUPAMW1

Tested By: Alistair Mitchell	**Remarks:**
Date Tested: 4/9/19	- Steady state conditions - difference in the pH less than 0.2 units, difference in conductivity less than 10% 10% and SWL stable/not in drawdown
Checked By: MD	
Date: 8/9/19	

JKEnvironments

Client:	Urbis	Job No.:	E32596BD
Project:	Proposed State of the Art of Excellence and Grandstand Development	Well No.:	228
Location:	Brookvale Oval, BROOKVALE, NSW	Depth (m):	12

WELL FINISH

x	Gatic Cover		Standpipe		Other (describe)

WELL PURGE DETAILS:

Method:	Peristaltic	SWL – Before:	8.60m
Date:	4/9/19	Time – Before:	12:20
Undertaken By:	AM/SW	Total Vol Removed:	~13L
Pump Program No:	106204	PID (ppm):	1.1

PURGING / SAMPLING MEASUREMENTS

Time (min)	SWL (m)	Vol (L)	Notes	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)
12:24	8.79	1		20.5	0.6	426.5	5.35	61.4
12:28	8.94	2		20.4	0.5	386.7	5.23	58.8
12:32	9.13	3		20.4	0.5	369.1	5.13	65.9
12:35	9:18	4		20.3	0.5	366.5	5.12	70.1
12:39	9:30	5		20.3	0.8	369.5	5.12	74.4
12:43	9:40	5.5	Pump struggling	20.4	0.9	372.4	5.14	85.2
12:47	9:47	6	to pump	20.4	1.1	379.5	5.17	88.7
12:51	9:53	6.5	water	20.4	1.1	379.5	5.19	90.2
12:55	9:57	7		20.4	1.1	379.5	5.21	90.3
13 00	9:63	7.5		20.4	1.1	378.1	5.24	90.1
13:05	9:69	8		20.4	1.2	376.4	5.26	90.0
13:10	9:71	8.5		20.4	1.2	386.1	5.31	73.2
13:15	9:72	9		20.5	0.9	380.2	5.31	69.9
13:20	9:75	9.5		20.6	0.9	376.7	5.31	70.2
13:25	9:77	10		20.6	1.0	374.8	5.32	70.9
13:30	9:78	10.5		20.7	1.2	371.9	5.33	72.9
13:35	9:79	11		20.7	1.4	370.6	5.35	74.2
13:42	9:81	11.5		20.7	1.5	367.2	5.36	77.2
Started	Sampling	close	to proximity	to	10m	and	low	levels
water	being	drawn	up.					of

Comments: Odours (YES / (NO)), NAPL/PSH (YES / (NO)), Sheen (YES / (NO)), Steady State Achieved (YES / (NO))

Sampling Containers Used: | x glass amber, 4 x BTEX vials, | x HNO3 plastic, x H2SO4 plastic, x unpreserved plastic

YSI used: 4 Low SA Cond

Tested By: Alistair Mitchell	**Remarks:**
Date Tested: 4/9/19	- Steady state conditions
Checked By: MD	- difference in the pH less than 0.2 units, difference in conductivity less than 10% 10% and SWL stable/not in drawdown
Date: 8/9/19	

JOB NO: E32596 BD
LOCATION: Brookvale Oval

FIELD CALIBRATION FORM

PID

Make: MiniRAE	Model: 2000	Unit: Yellow (1)	Date of last factory calibration: 13/8/19
Date of calibration: 3/9/19		Name of Calibrator: AM/SW	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: 100 ppm		Error in measured reading: ± 0 ppm	
Measured reading Acceptable (Yes/No):			

DISSOLVED OXYGEN

Make: YSI	Model: ~~Aqua DY~~
Date of calibration: 4/9/19	Name of Calibrator: AM/SW
Span value: 70% to 130%%	
Measured value: 100%	
Measured reading Acceptable (Yes/No):	

pH METER

Make: ~~Orion~~ YSI	Model: ~~Four star~~	
Date of calibration: 4/9/19	Name of Calibrator: AM/SW	
Buffer 1: Theoretical pH = 7.01± 0.01	Expiry date: FEB2020	Lot No: 324986
Buffer 2: Theoretical pH = 4.01± 0.01	Expiry date: JAN2020	Lot No: 322843
Measured reading of Buffer 1: 7.02		
Measured reading of Buffer 2: 3.88		
Slope:	Measured reading Acceptable (Yes/No):	

CONDUCTIVITY METER

Make: ~~Orion~~ YSI	Model: ~~Four star~~		
Date: 4/9/19	Name of Calibrator: AM/SW		Temperature: 13 °C
Calibration solution: conductivity Standard	Expiry date: 9/19	Lot No: 316816	
Theoretical conductivity at temperature (see solution container): 1089 µS/cm			
Measured conductivity: 1175 µS/cm	Measured reading Acceptable (Yes/No):		

REDOX METER

Make: ~~Orion~~ YSI	Model: ~~Four star~~	
Date of calibration: 4/9/19	Name of Calibrator: AM/SW	
Calibration solution: ORP test solution	Expiry date: 11/23	Lot No: 3640
Theoretical redox value: 240mV		
Measured redox reading: 245 mV	Measured reading Acceptable (Yes/No):	

Appendix I: Site Photographs

Latitude: -33.759264
Longitude: 151.27388
Elevation: 29.2m
Accuracy: 6.0m
Azimuth: 144° (SE)
Pitch: -3.3° (-5.5°)
Time: 23-08-2019 07:19
Powered by AngleCam

Latitude: -33.760161
Longitude: 151.272337
Elevation: 31.26m
Accuracy: 32.0m
Azimuth: 247° (SW)
Pitch: -3.1°
Time: 26-08-2019 07:16
Powered by AngleCam

Latitude: -33.759254
Longitude: 151.27388
Elevation: 29.2m
Accuracy: 6.0m
Azimuth: 191° (S)
Pitch: -10.3° (-0.9°)
Time: 23-08-2019 07:19
Powered by AngleCam

Latitude: -33.759343
Longitude: 151.274014
Elevation: 32.1m
Accuracy: 6.0m
Azimuth: 38° (NE)
Pitch: -10.2° (1.3°)
Time: 23-08-2019 07:19
Powered by AngleCam

Latitude: -33.760252
Longitude: 151.272373
Elevation: 27.34m
Accuracy: 12.0m
Azimuth: 252° (W)
Pitch: -4.3° (-1.9°)
Time: 26-08-2019 07:16
Powered by AngleCam

Latitude: -33.759493
Longitude: 151.272588
Elevation: 34.23m
Accuracy: 8.0m
Azimuth: 269° (W)
Pitch: -86.1° (-1.2°)
Time: 22-08-2019 08:32
Powered by AngleCam

Latitude: -33.760496
Longitude: 151.272487
Elevation: 27.3m
Accuracy: 21.9m
Azimuth: 247° (SW)
Pitch: -5.4° (-1.5°)
Time: 26-08-2019 07:16
Powered by AngleCam

Latitude: -33.760238
Longitude: 151.272333
Elevation: 29.19m
Accuracy: 12.0m
Azimuth: 253° (W)
Pitch: -3.0°
Time: 26-08-2019 07:16
Powered by AngleCam

Latitude: -33.759167
Longitude: 151.273115
Elevation: 29.33m
Accuracy: 12.0m
Azimuth: 259° (W)
Pitch: -6.7°
Time: 23-08-2019 07:16
Powered by AngleCam

Latitude: -33.75918
Longitude: 151.273334
Elevation: 33.83m
Accuracy: 6.0m
Azimuth: 127° (SE)
Pitch: -2.8° (-1.2°)
Time: 23-08-2019 07:17
Powered by AngleCam

Latitude: -33.759171
Longitude: 151.273083
Elevation: 33.71m
Accuracy: 6.0m
Azimuth: 325° (NW)
Pitch: -4.9° (-0.8°)
Time: 23-08-2019 07:16
Powered by AngleCam

Latitude: -33.759163
Longitude: 151.273135
Elevation: 31.73m
Accuracy: 6.0m
Azimuth: 86° (E)
Pitch: -4.3° (0.7°)
Time: 23-08-2019 07:17
Powered by AngleCam

MITSUBISHI MOTORS
BROOKVALE MITSUBISHI
GOOD TO GO
Latitude: -33.759185
Longitude: 151.273345
Elevation: 33.16m
Accuracy: 4.0m
Azimuth: 56° (NE)
Pitch: -4.3° (-2.0°)
Time: 23-08-2019 07:18
Powered by AngleCam

Latitude: -33.759227
Longitude: 151.273659
Elevation: 30.21m
Accuracy: 6.0m
Azimuth: 29° (NE)
Pitch: -6.9°
Time: 23-08-2019 07:18
Powered by AngleCam

MRS MAC'S
Latitude: -33.759187
Longitude: 151.273338
Elevation: 33.52m
Accuracy: 4.0m
Azimuth: 349° (N)
Pitch: -3.0°
Time: 23-08-2019 07:17
Powered by AngleCam

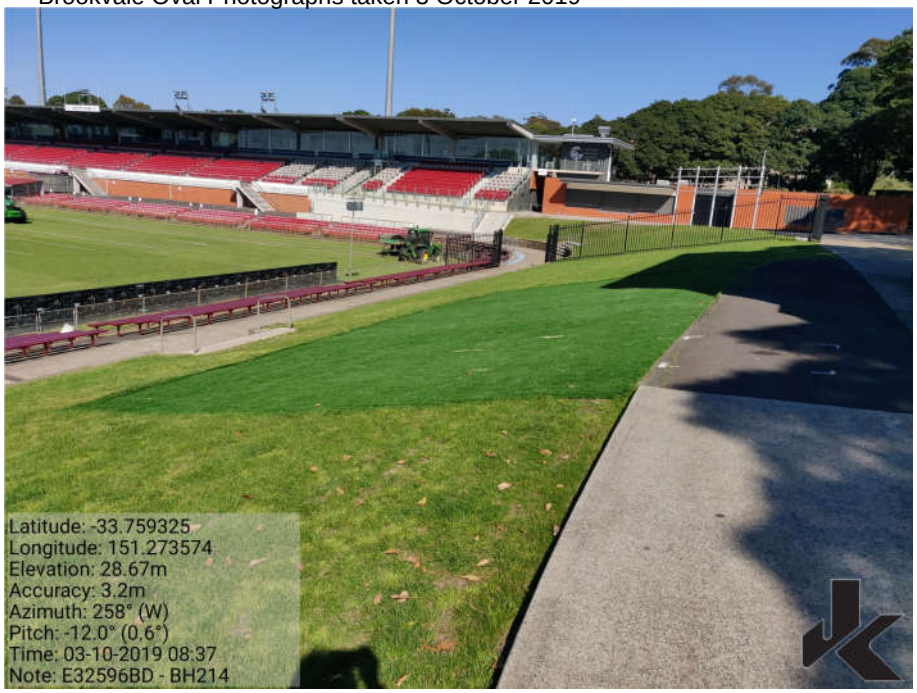
Latitude: -33.759228
Longitude: 151.273659
Elevation: 31.02m
Accuracy: 6.0m
Azimuth: 313° (NW)
Pitch: -5.0° (-2.4°)
Time: 23-08-2019 07:18
Powered by AngleCam

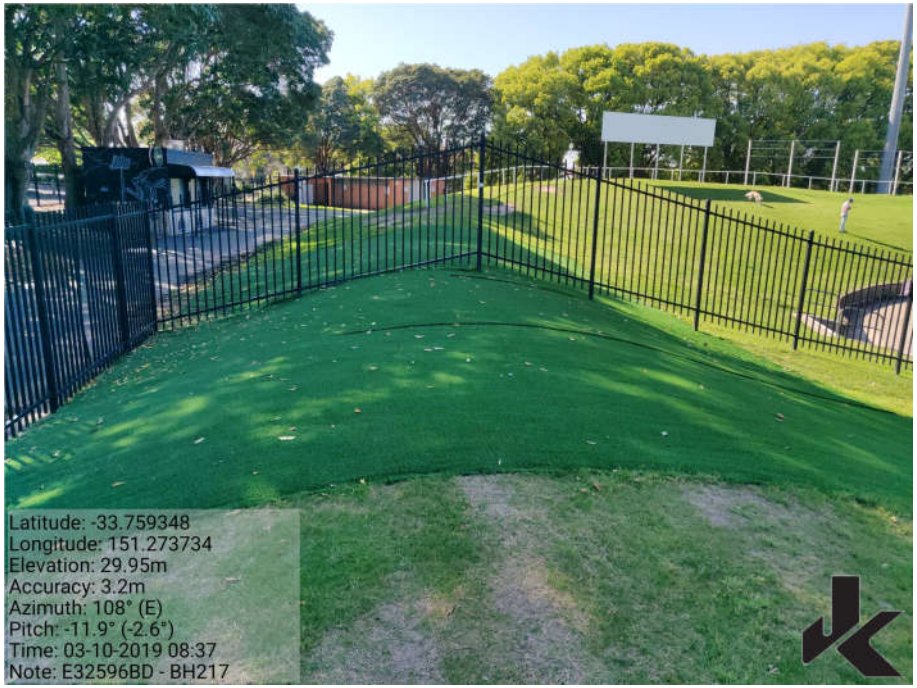
Latitude: -33.759235
Longitude: 151.273668
Elevation: 30.19m
Accuracy: 4.0m
Azimuth: 168° (S)
Pitch: -7.3° (-2.4°)
Time: 23-08-2019 07:18
Powered by AngleCam

Latitude: -33.759213
Longitude: 151.273811
Elevation: 28.8m
Accuracy: 6.0m
Azimuth: 123° (SE)
Pitch: 1.6° (-3.0°)
Time: 23-08-2019 07:19
Powered by AngleCam

Latitude: -33.759229
Longitude: 151.273665
Elevation: 29.98m
Accuracy: 4.0m
Azimuth: 116° (SE)
Pitch: -7.5° (1.2°)
Time: 23-08-2019 07:18
Powered by AngleCam

Latitude: -33.759229
Longitude: 151.273671
Elevation: 29.99m
Accuracy: 3.0m
Azimuth: 255° (W)
Pitch: -6.7° (1.8°)
Time: 23-08-2019 07:18
Powered by AngleCam


Latitude: -33.759325
Longitude: 151.273574
Elevation: 28.67m
Accuracy: 3.2m
Azimuth: 258° (W)
Pitch: -12.0° (0.6°)
Time: 03-10-2019 08:37
Note: E32596BD - BH214


Latitude: -33.759348
Longitude: 151.273734
Elevation: 29.95m
Accuracy: 3.2m
Azimuth: 108° (E)
Pitch: -11.9° (-2.6°)
Time: 03-10-2019 08:37
Note: E32596BD - BH217

Latitude: -33.759281
Longitude: 151.273107
Elevation: 33.99m
Accuracy: 3.2m
Azimuth: 261° (W)
Pitch: -7.1° (-3.4°)
Time: 03-10-2019 08:33
Note: E32596BD inspection

Appendix J: Calculation Sheets

CARCINOGENIC PAHS FILL RESULTS USED FOR UCL CALCULATION			
All data in mg/kg unless stated otherwise			Carcinogenic PAHs
PQL - Envirolab Services			0.05
Site Assessment Criteria (SAC)			3
Sample Reference	**Sample Depth**	**Sample Description**	
BH229	0-0.2	Fill: Sandy Silt	<0.5
BH229	1.1-1.3	Fill: Clayey Sand	0.9
BH232	0-0.2	Fill: Silty Sand	<0.5
BH232 (lab replicate)	0-0.2	Fill: Silty Sand	<0.5
BH233	0-0.2	Fill: Sandy Silt	<0.5
BH233	0.3-0.4	Fill: Clayey Sand	5.1
BH236	0-0.2	Fill: Silty Sand	<0.5
BH236 (lab replicate)	0-0.2	Fill: Silty Sand	<0.5
BH236	0.5-0.7	Fill: Silty Sand	<0.5
BH237	0-0.2	Fill: Silty Sand	<0.5
DUPAM7	-	Fill: Sandy Silt	<0.5
Total Number of Samples			11
Maximum Value			5.1

Copyright JK Environments

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.18/10/2019 10:10:17 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Car PAHs

General Statistics

Total Number of Observations	11	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.5	Mean	0.955
Maximum	5.1	Median	0.5
SD	1.38	Std. Error of Mean	0.416
Coefficient of Variation	1.446	Skewness	3.273

Normal GOF Test

Shapiro Wilk Test Statistic	0.385	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.447	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.251	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.709	95% Adjusted-CLT UCL (Chen-1995)	2.078
		95% Modified-t UCL (Johnson-1978)	1.777

Gamma GOF Test

A-D Test Statistic	3.141	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.743	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.478	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.26	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.453	k star (bias corrected MLE)	1.117
Theta hat (MLE)	0.657	Theta star (bias corrected MLE)	0.854
nu hat (MLE)	31.96	nu star (bias corrected)	24.58
MLE Mean (bias corrected)	0.955	MLE Sd (bias corrected)	0.903
		Approximate Chi Square Value (0.05)	14.29
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	13.03

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	1.642	95% Adjusted Gamma UCL (use when n<50)	1.801

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.45	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.464	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.251	Data Not Lognormal at 5% Significance Level

	A	B	C	D	E	F	G	H	I	J	K	L
56	Data Not Lognormal at 5% Significance Level											
57												
58	Lognormal Statistics											
59	Minimum of Logged Data				-1.386				Mean of logged Data			-0.996
60	Maximum of Logged Data				1.629				SD of logged Data			0.952
61												
62	Assuming Lognormal Distribution											
63	95% H-UCL				1.393				90% Chebyshev (MVUE) UCL			1.051
64	95% Chebyshev (MVUE) UCL				1.277				97.5% Chebyshev (MVUE) UCL			1.592
65	99% Chebyshev (MVUE) UCL				2.21							
66												
67	Nonparametric Distribution Free UCL Statistics											
68	Data do not follow a Discernible Distribution (0.05)											
69												
70	Nonparametric Distribution Free UCLs											
71	95% CLT UCL				1.472				95% Jackknife UCL			1.546
72	95% Standard Bootstrap UCL				N/A				95% Bootstrap-t UCL			N/A
73	95% Hall's Bootstrap UCL				N/A				95% Percentile Bootstrap UCL			N/A
74	95% BCA Bootstrap UCL				N/A							
75	90% Chebyshev(Mean, Sd) UCL				2.067				95% Chebyshev(Mean, Sd) UCL			2.663
76	97.5% Chebyshev(Mean, Sd) UCL				3.491				99% Chebyshev(Mean, Sd) UCL			5.118
77												
78	Suggested UCL to Use											
79	95% Chebyshev (Mean, Sd) UCL				2.663							
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

Appendix K: Information on Acid Sulfate Soils

A. Background

Acid Sulfate Soil (ASS) is formed from iron rich alluvial sediments and sulfate (found in seawater) in the presence of sulfate reducing bacteria and plentiful organic matter. These conditions are generally found in mangroves, salt marsh vegetation or tidal areas and at the bottom of coastal rivers and lakes. These soils include those that are producing acid (termed actual ASS) and those that can become acid producing (termed potential ASS or 'PASS'). PASS are naturally occurring soils and sediment that contain iron sulfides (pyrite) which, when exposed to oxygen generate sulfuric acid.

B. The ASS Management Advisory Committee (ASSMAC)

The NSW government in 1994 formed the ASSMAC to coordinate a response to ASS issues. In 1998 this group released the Acid Sulfate Soil Manual[27] providing best practice advice for planning, assessment, management, laboratory methods, drainage, groundwater and the preparation of ASS management plans (ASSMP).

In 1997 the Department of Land and Soil Conservation (now part of the Office of Environment and Heritage[28]) developed two series of maps with respect to ASS for use by council and technical staff implementing the ASS Manual 1998:

- ASS Planning Maps – issued to councils and government units; and
- ASS Risk Maps – issued to interested parties.

C. The ASS Planning Maps

The ASS planning maps provide an indication of the relative potential for disturbance of ASS to occur at locations within the council area. These maps do not provide an indication of the actual occurrence of ASS at a site or the likely severity of the conditions.

The maps are divided into five classes dependent upon the type of activities/works that if undertaken, may represent an environmental risk through the development of acidic conditions associated with ASS:

Table: Risk Classes

Risk Class	Description
Class 1	All works.
Class 2	All works below existing ground level and works by which the water table is likely to be lowered.
Class 3	Works at depths beyond 1m below existing ground level or works by which the water table is likely to be lowered beyond 1m below existing ground level.
Class 4	Works at depths beyond 2m below existing ground level or works by which the water table is likely to be lowered beyond 2m below existing ground level.

[27] Acid Sulfate Soils Management Advisory Committee (ASSMAC), (1998). *Acid Sulfate Soils Manual* (ASS Manual 1998)

[28] **http://www.environment.nsw.gov.au/acidsulfatesoil/index.htm**

Class 5	Works within 500m of adjacent Class 1,2,3,4 land which are likely to lower the water table below 1m AHD on the adjacent land.

D. The ASS Risk Maps

The ASS risk maps provide an indication of the probability of occurrence of PASS at a particular location based on interpretation from geological and soil landscape maps. The maps provide classes based on high probability, low probability, no known occurrence and areas of disturbed terrain (site specific assessment necessary) and the likely depth at which ASS are likely to be encountered.

E. Investigation and Laboratory Testing for ASS

The ASS Manual 1998 includes information on assessment of the likelihood of PASS, the need for an ASSMP, and the development of mitigation measures for a proposed development located in PASS risk areas.

The ASS Manual 1998 recommends a minimum of four sampling locations for a site with an area up to 1ha. For sites greater than 4ha, the manual recommends the use of a reduced density of two locations per hectare subject to the proposed development. For lineal investigations, the manual recommends sampling every 50-100m.

The sampling locations should include all areas where significant disturbance of soils will occur and/or areas with a high environmental sensitivity. In some instances a varied sampling plan may be more suitable, particularly for sites less than 1,000m^2 in area.

The depth of investigation should extend to at least 1m beyond the depth of proposed excavation/disturbance or estimated drop in water table height, or to a minimum of 2m below existing ground level, whichever is greatest.

Standard methods for the laboratory analysis of samples are presented in the Australian Standard AS4969-2008/09[29] (part 1 to 14). The principal analytical method is suspension Peroxide Oxidation Combined Acidity and Sulfur (sPOCAS).

The sPOCAS method specified in AS4969-2008/09 supersedes the POCAS method specified in the ASS Manual 1998. When S_{POS} (peroxide oxidisable sulfur) values are close to the action criteria confirmation of the result can be undertaken by the chromium reducible sulfur (S_{CR}) method.

The endpoint for the pH titration in AS4969-2008/09 is pH6.5 as opposed to pH5.5 adopted in the ASS Manual. Therefore the values for Total Actual Acidity (TAA), Total Sulfide Acidity (TSA) and Total Potential Acidity (TPA) will more conservative when analysed using the sPOCAS method specified in AS4969-2008/09.

[29] Standards Australia, (2008/2009). *Analysis of acid sulfate soil – Dried samples – Methods of test, Parts 1 to 14.* (AS4969-2008/09)

Appendix L: Guidelines and Reference Documents

Acid Sulfate Soils Management Advisory Committee (ASSMAC), (1998). Acid Sulfate Soils Manual

Australian and New Zealand Environment Conservation Council (ANZECC), (2000). Australian and New Zealand Guidelines for Fresh and Marine Water Quality

Canadian Council of Ministers of the Environment, (1999). Canadian soil quality guidelines for the protection of environmental and human health: Benzo(a)Pyrene (1997)

CRC Care, (2011). Technical Report No. 10 – Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document

Contaminated Land Management Act 1997 (NSW)

Department of Land and Water Conservation, (1997). 1:25,000 Acid Sulfate Soil Risk Map Series

Managing Land Contamination, Planning Guidelines SEPP55 – Remediation of Land (1998)

National Health and Medical Research Council (NHMRC), (2018). National Water Quality Management Strategy, Australian Drinking Water Guidelines 2011

NSW Department of Environment and Conservation, (2007). Guidelines for the Assessment and Management of Groundwater Contamination

NSW EPA, (1995). Contaminated Sites Sampling Design Guidelines

NSW EPA, (2014). Waste Classification Guidelines - Part 1: Classifying Waste

NSW EPA, (2015). Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997

NSW EPA, (2017). Guidelines for the NSW Site Auditor Scheme, 3rd Edition

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

Olszowy, H., Torr, P., and Imray, P., (1995). Trace Element Concentrations in Soils from Rural and Urban Areas of Australia. Contaminated Sites Monograph Series No. 4. Department of Human Services and Health, Environment Protection Agency, and South Australian Health Commission

Protection of the Environment Operations Act 1997 (NSW)

State Environmental Planning Policy No.55 – Remediation of Land 1998 (NSW)

World Health Organisation (WHO), (2008). Petroleum Products in Drinking-water, Background document for the development of WHO Guidelines for Drinking Water Quality

Western Australia Department of Health, (2009). Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia