

STAGE 1 AND STAGE 2 **ENVIRONMENTAL SITE INVESTIGATION**

1-5 GLEN STREET & 2-8 LAKESIDE ROAD, EASTWOOD NSW

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EXECUTIVE SUMMARY

Geo-Environmental Engineering Pty Ltd (GEE) was commissioned by Romeciti Investment Group, on behalf of Romeciti Eastwood Pty Ltd, to undertake a preliminary and detailed Environmental Site Assessment (ESA) at 1-5 Glen Street & 2-8 Lakeside Road, Eastwood, New South Wales (herein referred to as the 'site'). The site covers a combined area of 5,798m² and comprises seven allotments which are legally referred to as Lot 3 to Lot 9 in Deposited Plan 8043.

The ESA was required to support a Development Application (LDA 2015/0666) with Ryde City Council (Council) which relates to the proposed construction of a multistorey, mixed-use (commercial and residential) development.

The objective of the ESA was to address the requirements of Council's Contaminated Land Policy (reference 1) and the provisions of the *State Environmental Planning Policy No. 55 – Remediation of Land* (reference 2) by determining the suitability of the site for the proposed land-use and possible constraints on future site development. In this regard, GEE has completed a *Stage 1 - Preliminary Site Investigation* (Stage 1 - PSI) and a Stage 2 – *Detailed Site Investigation* (Stage 2 – DSI) in accordance with the *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites* and NEPM (2013) Schedule B(2) *Guideline on Site Characterisation*.

The scope of works comprised a:

- Review of the environmental and physical setting in which the site lies, including geology, hydrogeology and topography,
- Review of the history of the site using readily available records and historical aerial photographs,
- Detailed site inspection for potential sources of contamination, and
- ♦ A detailed sampling and analysis program to characterise potential contamination in accessible areas across the site.

A summary of the information obtained and results of this assessment is presented below.

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Site History and Potential For Contamination

The historical information indicates that the site was likely formed by subdivision prior to 1915, and the existing residential dwellings on the site were constructed circa 1924. Since then, the site and the dwellings have remained largely unchanged, with only minor additions and alterations.

The site history information, combined with a review of the site's physical and environmental setting, did not reveal any significant, potentially contaminating activities on the site, or on adjoining properties. The main potential for contamination (albeit minor) is the presence of fill material. When sourced from an unknown origin, the quality of the fill is also unknown and potentially contaminated.

Soil Conditions

Soil conditions across the site were assessed at sixteen borehole locations positioned in accessible areas across the site and targeting areas of potential contamination. The number of boreholes exceeds the minimum number of sampling points required for adequate site characterisation as defined by the EPA NSW and Australian Standards.

The subsurface conditions, as observed in the boreholes, typically comprised fill material over clay and sandy clay soil which was underlain by siltstone and laminite bedrock. The thickness of the topsoil and/or fill unit ranged from 0.1m to 1.1m depth while the depth to the bedrock formation ranged from 0.6m to 5.7m depth.

During the drilling of boreholes, there were no unusual odours (that could be potentially associated with contamination) noted. Additionally, no potentially Asbestos Containing Materials (ACM) was observed below ground during sampling and logging.

GEE submitted a total of 31 primary soil samples from the 16 boreholes to Envirolab for NATA accredited laboratory analysis of metals (arsenic, cadmium, chromium, copper, nickel, lead, mercury and zinc), TRH, BTEX, PAHs, OCPs, PCBs and asbestos. The analytical results were compared against relevant set of ecological and health-based Site Acceptance Criteria (SAC) appropriate for the proposed land-use (mixed commercial and residential).

In summary, the metals, TRH, BTEX, PAHs, OCPs and PCBs were not detected at concentrations above the SAC. On this basis, these chemical compounds are not considered to pose a contamination issue at the site. Additionally, asbestos was not detected in soil samples selected for analysis and when combined with the fact that

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there was no obvious asbestos containing material observed during drilling operations, asbestos does not pose a soil contamination issue at the site.

Groundwater Conditions

Groundwater conditions were assessed using a pre-existing monitoring well (GW07). Water within the well was slightly acidic (5<pH<6) and low in conductivity.

To assess the presence of contamination within the groundwater, a sample of water was collected and submitted to Envirolab for NATA accredited analysis of dissolved metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury), TRH PAHs and VOCs (including BTEX). The analytical results were then compared against a set of Groundwater Assessment Criteria (GAC) considered appropriate for the environmental setting of the site.

The concentrations of arsenic, cadmium, chromium, copper, mercury, lead, TRH, VOCs and PAHs all conformed to the adopted GILs, while the concentrations of nickel and zinc in some wells exceeded the SAC. The metal exceedances (nickel and zinc) are not considered to be significant because:

- ♦ The groundwater from the site was collected from a stratigraphy comprising shale and according to Hem (1989 reference 17), the concentrations of copper, nickel and zinc are commensurate with naturally occurring background concentrations.
- ♦ The GAC is the expected water quality at the 'Point of use' or 'discharge' from groundwater into a surface body of water and the nearest water body is 150m to the south-west of the site. Additionally, the concentrations were only marginally above the GAC and significant dilution is expected upon entering the nearest surface body of water,
- ♦ No significant source of metal contamination was identified in the fill and natural soils across the site.
- ♦ The concentrations detected are commensurate with metal concentrations within the groundwater across the Sydney region.

In summary, the analytical results suggest that the groundwater quality is acceptable for the site's environmental setting.

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Conclusion and Recommendations

Based on observations made during the field investigations, the sampling and analysis program conducted at the site, the proposed land-use and with respect to relevant statutory guidelines, GEE conclude that site is currently suitable for the proposed land-use (i.e. mixed commercial and residential development including a basement) and further assessment and/or remediation is not required.

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1 PROJECT INFORMATION

1.1 Introduction and Objectives

Geo-Environmental Engineering Pty Ltd (GEE) was commissioned by Romeciti Investment Group, on behalf of Romeciti Eastwood Pty Ltd, to undertake a preliminary and detailed Environmental Site Assessment (ESA) at 1-5 Glen Street & 2-8 Lakeside Road, Eastwood, New South Wales (herein referred to as the 'site'). The site covers a combined area of 5,798m² and comprises seven allotments which are legally referred to as Lot 3 to Lot 9 in Deposited Plan 8043. A site survey plan is provided for reference in **Appendix A**, while a site location map is provided as **Figure 1**.

The ESA was required to support a Development Application (LDA 2015/0666) with Ryde City Council (Council) which relates to the proposed construction of a multistorey, mixed-use (commercial and residential) development. Architectural plans of the proposed development are provided for reference in **Appendix A**.

The objective of the ESA was to address the requirements of Council's Contaminated Land Policy (reference 1) and the provisions of the *State Environmental Planning Policy No. 55 – Remediation of Land* (reference 2) by determining the suitability of the site for the proposed land-use and possible constraints on future site development.

In this regard, GEE has completed a *Stage 1 - Preliminary Site Investigation* (Stage 1 - PSI) and a Stage *2 - Detailed Site Investigation* (Stage 2 - DSI) in accordance with the *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites* (reference 3) and NEPM (2013) Schedule B(2) *Guideline on Site Characterisation* (reference 4). The investigation was also conducted in accordance with relevant Office of Environment and Heritage (OEH)¹ endorsed guidelines, the SEPP 55 and relevant Australian Standards.

1.2 Previous Investigations

GEE is not aware of any environmental site assessments having been conducted at the site, or part thereof. However, two geotechnical reports were completed by Coffey Geotechnics Pty Ltd (Coffey) in 2015 (reference 5 and 6). The geotechnical reports included:

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¹ The OEH incorporates the NSW Environment Protection Authority (EPA) and was formerly known as the NSW Department of Environment and Climate Change and Water (DECCW), the NSW Department of Environment and Climate Change (DECC) and NSW Department of Environment and Conservation (DEC).



- ♦ The drilling of seven cored boreholes (BH01 to BH07) across the site using track and truck mounted drilling rigs, and
- ♦ The installation of a groundwater monitoring well within borehole BH07.

The subsurface conditions encountered by Coffey comprised fill and/or topsoil overlying natural (i.e. previously undisturbed) clay and sandy clay soil which was underlain by siltstone and laminite bedrock. The thickness of the topsoil and/or fill unit ranged from 0.1m to 1.1m depth while the depth to the bedrock formation ranged from 0.6m to 5.7m depth.

1.3 SCOPE OF WORKS

The scope of works completed by GEE, to achieve the above objectives, is provided below:

- ♦ A review of the environmental and physical setting in which the site lies, including geology, hydrogeology and topography,
- ♦ A review of the history of the site using readily available records and historical aerial photographs,
- ♦ A site inspection for potential sources of contamination,
- ♦ Field investigations including:
 - The drilling of sixteen boreholes (BH101 to BH116) across accessible areas of the site,
 - o Sampling of soil from the boreholes, and
 - Sampling of groundwater from an existing monitoring well installed by Coffey Geotechnics Pty Ltd in 2015 (BH07).
- ♦ Laboratory analysis of selected soil samples for a broad suite of potential contaminants,
- ♦ Laboratory analysis of the groundwater sample for a broad suite of potential contaminants, and
- Preparation of this report including the comparison of the laboratory analytical results against relevant NSW OEH endorsed guidelines.

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2 SITE IDENTIFICATION

A summary of the site location details is provided below, while a site location map is provided as **Figure 1**:

Street Address: 1-5 Glen Street & 2-8 Lakeside Road, Eastwood (Figure 1)

Legal Description: Lot 3 to Lot 9 in Deposited Plan (DP) 8043

Coordinates (MGA 56): 322196m E, 6259453m N

Local Government Area: Ryde

Site Area: 5,798m²

Current Zoning: B4 – Mixed Use²

Current Use: Low density residential

Proposed Zoning: B4 – Mixed Use

Proposed Use: Commercial-residential mixed use which is consistent with

the existing land-use zoning

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² Ryde Local Environment Plan (LEP) 2014



3 SITE HISTORY

The history of the site was researched to provide an understanding of past and present site activities, which in turn may indicate sources and areas of potential contamination as well as potential chemicals of concern.

Information obtained and reviewed included:

- ♦ Historical aerial photographs dating back to 1943, as supplied by Lotsearch Pty Ltd using sources including the NSW Land and Property Information, or online aerial photography such as Google Earth, and Nearmap Limited (**Appendix B**).
- ♦ Historical title information, dating back to 1909, obtained from Hazlett Information Services (**Appendix C**).
- ♦ Historical business directory records from 1950, 1970 and 1991 which is provided in the Lotsearch Report (**Appendix B**).
- A search of the contaminated land database, which is available on the OEH website and reiterated in the Lotsearch report (**Appendix B**). This search reveals if there has been any past records of written notices issued on the site by OEH under the Contaminated Land Management Act 1997 (CLM Act), including preliminary investigation orders. Additionally, the search can reveal if the site has ever been notified to the OEH under Section 60 duty to report contaminated sites, of the CLM Act.

GEE notes that a search of WorkCover NSW records for licenced dangerous goods was not completed as it was considered highly unlikely that such dangerous goods would be stored or used at the site.

3.1 HISTORICAL AERIAL PHOTOGRAPHS

Historical aerial photographs were examined for the years 1943, 1956, 1961, 1965, 1970, 1982, 1991, 2003, 2009 and 2014. A description of the site from each photograph is provided below while a copy of the aerial photography is provided in **Appendix B**:

The earliest available aerial image indicates that the site was occupied by seven detached residential dwellings with associated outbuildings including garages. The seven dwellings appear to be the same seven dwellings that occupied the site at the time of this investigation.

On surrounding land there were low density residential dwellings to the north,

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east and west. Also to the north were larger buildings which are likely to be associated with St Kevin's Catholic Primary School which also currently exists. To the south (across Glen Street) was vacant undeveloped land which appeared to be covered by grass.

- 1956 There appears to be little change to the site since 1943. On surrounding land there has been increased development for residential land use, with the only remaining vacant parcel of land being to south of the site.
- 1961 There appears to be little change to the site since 1956. On surrounding land the main change is development of the formerly vacant parcel of land to the south into an open air a parking lot.
- There appears to be little change to the site since 1961. The main change on surrounding land is the clearing of former residential properties to the east and the development of a large commercial development (which is likely the same commercial development that existed at the time of this investigation).
- 1970 There appears to be little change to the site and surrounding land when compared to the 1965 image.
- 1982 There appears to be little change to the site and surrounding land when compared to the 1970 image.
- 1991 There appears to be little change to the site and surrounding land when compared to the 1982 image.
- There appears to be little change to the site and surrounding land when compared to the 1991 image.
- There appears to be little change to the site and the surrounding land when compared to the 2003 image.
- There appears to be little change to the site and the surrounding land when compared to the 2009 image.

Based on review of the aerial photographs, the existing residential dwellings on the site were constructed prior to 1943. Since then, there have only been minor additions and alterations made to the dwellings.

3.2 HISTORICAL TITLE INFORMATION

A copy of the historical title information obtained from circa 1909 to present is provided for reference in **Appendix C**, along with a summary table listing the past proprietors (owners) and leaseholders of the allotments.

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As revealed by the title documentation, the site has predominately been owned by various individuals and small companies. When cross referenced with the historical aerial photographs the site was predominately used for residential purposes since its development prior to 1943, likely circa 1924 when it was owned by Harrie Weston Barnwell, a builder.

3.3 Business Directory Listings

A search of the historical business directory listings from 1950, 1970 and 1991 was completed to assist with determining any past land-use activities, and in particular past land-use activities that may cause contamination. A list of some activities that may cause contamination is provided in Table 1 of SEPP 55 (reference 2) and includes motor garages, dry cleaners and service stations.

The results are provided in the Lotsearch Report (**Appendix B**) and they did not reveal any business activities that are associated with potential contaminating activities.

3.4 CONTAMINATED LAND DATABASE

A search of the contaminated land database, which is available on the Office of Environment and Heritage (OEH) website, was conducted and revealed there has been no past record of written notices issued on the site, by the OEH, under the Contaminated Land Management Act 1997 (CLM Act), including preliminary investigation orders. Additionally, the site has never been notified to the OEH under Section 60 duty to report contaminated sites, of the CLM Act.

Beyond the subject site, there was one property within a 1km radius that that has been notified to the NSW EPA under Section 60 of the CLM Act or had notices issued on them by the OEH. The property is a Mobil service station, located 5 Trelawney Street, Eastwood, approximately 230m to the south of the site. Given the distance between the sites, GEE considers it highly unlikely that contamination from the service station would have impacted the subject site.

3.5 SUMMARY OF SITE HISTORY INFORMATION

The historical information indicates that the site was likely formed by subdivision prior to 1915, and the existing residential dwellings on the site were constructed circa 1924. Since then, the site and the dwellings have remained largely unchanged, with only minor additions and alterations.

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4 SITE CONDITION AND SURROUNDING ENVIRONMENT

4.1 SITE DESCRIPTION

The site bounded by Glen Street to the south, Lakeside Road to the east, St Kevin's Catholic Primary School to the north-west, and by low density residential dwellings to the north and west. Surrounding land use is a mixture of residential and commercial, whilst further east lies Eastwood railway station.

At the time of the field investigation, each allotment was occupied by a residential dwelling, with either an associated garage or driveway. The remaining site surface was predominantly covered by grass, with the exception of minor concrete footpaths, shrubs and trees. It is noted that several areas of the site were overgrown with dense vegetation at the time of the field investigation.

4.1.1 Tanks and Associated Services

During the inspection, GEE did not observe any evidence indicating the presence of under-ground, or above-ground, fuel or chemical, storage tanks. Such tanks would be highly unusual given the site history.

4.1.2 *Fill*

Based on the regional topography (Section 4.2), it was considered unlikely that the site has been subjected to any substantial filling. However, with any development, there is potential for fill material to have been imported to site to raise levels above predicted flood levels, or to create a level building platform. This was confirmed by field investigations conducted herein and earlier by Coffey (reference 5 and 6). The maximum depth of fill material encountered by the field investigations was 1.1m below ground surface (bgs).

The origin of the fill is also unknown and subsequently, so is its quality. In this regard samples of the fill were collected and analysed for a broad suite of potential contaminants and the results provided in Section 9.

4.1.3 Odours and Staining

No unusual odours that could be potentially associated with contamination were noted during the site inspection or field investigations completed as part of this assessment.

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4.2 TOPOGRAPHY

During the site investigation, it was noted that the site was situated on a slope, highest in elevation at the north-western corner and dipping down towards the south-east at approximately 15% in gradient. A review of the site survey (**Appendix A**) indicates that the site surface is approximately between 67.78m and 81.84m AHD.

4.3 GEOLOGY AND SOILS

4.3.1 Regional

A review of the Sydney 1:100,000 regional geological map (reference 7) indicates that the site is underlain by the Triassic aged Ashfield Shale formation of the Wianamatta Group, typically comprising "...black to dark-grey shale and laminite".

A review of the regional soils map (reference 8) indicates the site is located within the Glenorie Soil Landscape Group, recognised by undulating to rolling low hills on Wianamatta Group shales. Local reliefs are between 50-80m whilst slopes typically between 5-20% in gradient. Soils of the Glenorie Group are typically erosional clays, are moderately reactive and form a high soil erosion hazard.

4.3.2 Local

The subsurface conditions encountered by Coffey during their previous geotechnical investigations (references 5 and 6) comprised fill and/or topsoil overlying natural (i.e. previously undisturbed) clay and sandy clay soil which was underlain by siltstone and laminite bedrock. The thickness of the topsoil and/or fill unit ranged from 0.1m to 1.1m depth while the depth to the bedrock formation ranged from 0.6m to 5.7m depth.

4.4 HYDROGEOLOGY

4.4.1 Regional

Permanent groundwater is likely to be confined or partly confined within discrete, water-bearing zones within the bedrock formation. However, intermittent 'perched' water seepage is likely to occur at the soil-bedrock interface following heavy and prolonged rainfall events.

Groundwater flow is dominated by water movement through fractures or joints, where stress has caused partial loss of cohesion in the rock, with evidence of potential water bearing fractures usually the presence of clay or iron-staining along the face of joints.

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4.4.2 *Local*

Groundwater observations carried out on 26 August 2015 by Coffey indicates that groundwater was observed between 0.5 m to 6.2 m below ground level, which equates to between 82.3m AHD and 69.5m AHD, with a hydraulic gradient trending to the southeast.

4.5 ACID SULFATE SOIL POTENTIAL

Acid Sulfate Soil is naturally occurring sediments and soils containing iron sulfides (principally iron sulfide, iron disulfide or their precursors). Oxidation of these soils through exposure to the atmosphere or through lowering of groundwater levels results in the generation of sulfuric acid.

Land that may contain potential acid sulfate soils was mapped by the NSW Department of Land and Water Conservation (DLWC) and based on these maps local Councils produced their own acid sulfate soil maps to be used for planning purposes.

The Acid Sulfate Soils Map produced by the NSW Department of Planning and Environment, via interactive online mapping, indicates that the site lies outside areas defined as "Class 1" to "Class 5". In this regard, there is no need for an acid sulphate soil assessment or management plan.

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5 CONCEPTUAL SITE MODEL

The conceptual site model (CSM) is a representation, or summary, of information obtained regarding potential contamination sources, receptors and exposure pathways between the sources and receptors. The key elements of a CSM include:

- known and potential sources of contamination and contaminants of concern, including the mechanisms of contamination (such as 'top down' spills or subsurface releases from corroded tanks or pipes),
- potentially affected media (such as soil, sediment, groundwater, surface water, indoor and ambient air),
- human and ecological receptors, and
- opential and complete exposure pathways.

GEE notes that this CSM is based on existing information (i.e. the historical information and the review of the site physical and environmental setting).

5.1 CONTAMINANT SOURCES

The site history information, combined with a review of the site's physical and environmental setting, did not reveal any significant, potentially contaminating activities on the site, or on adjoining properties. The main potential for contamination (albeit minor) is the presence of fill material. When sourced from an unknown origin, the quality of the fill is also unknown and potentially contaminated.

5.2 POTENTIAL CONTAMINANTS OF CONCERN

A summary of the potential contaminants of concern attributed to the fill is summarised below in **Table 1**.

Table 1: Summary of Potential Contamination

Potential Contaminating	Area of Environmental	Chemical of Potential Concern
Activity	Concern (AEC)	(COPC)
Past filling	Entire Site	Metals, TRH, Polycyclic Aromatic Hydrocarbons (PAHs), Pesticides (OCPs), PCBs and Asbestos ³

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³ These are common contaminants of concern for developed areas across Sydney.



5.3 POTENTIAL OR KNOWN CONTAMINATED MEDIA

Potential contaminated media is the fill layer across the site. To a lesser extent is the upper portion of the natural soil profile because there is always potential for contaminants in the fill layer to impact on the upper portion of the underlying natural soil profile via leaching.

Groundwater is unlikely to be contaminated however a single sample was collected from the existing groundwater well installed by Coffey (BH7).

5.4 CONTAMINANT RECEPTORS

Potential receptors to the contamination include workers engaged to construct the proposed development including earthworks contractors.

Future users of the site are not expected to be impacted because the majority of the site will be excavated to facilitate the construction of a basement.

5.5 POTENTIAL EXPOSURE PATHWAYS

At this preliminary stage, potential exposure pathways include direct contact for workers on site and future users of the site.

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6 SAMPLING AND ANALYSIS PROGRAM

The sampling and analysis program was designed with reference to the site's history and a recent site inspection. The purpose of the program was to characterise the soil conditions across the entire site, particularly the fill material present.

In accordance with the NSW DEC *Contaminated Sites: Guidelines for NSW Site Auditor Scheme* (reference 9), the Data Quality Objectives (DQOs) process was used to define the type, quantity and quality of the data needed to support decisions relating to the environmental condition of a site. Details of the DQO process adopted for the soil sampling and analysis program is provided in **Appendix D**.

6.1 SAMPLING PROGRAM

The sampling program was undertaken by Stephen McCormack and Andy Chiem, from GEE, on the 31st of October and 1st of November 2016 and comprised:

- ♦ The drilling of sixteen boreholes (BH101 to BH116) in accessible areas across the site, and
- ♦ The collection of soil samples from each borehole for subsequent selective laboratory analysis.
- ♦ The collection of a groundwater sample from each groundwater monitoring well installed on the site, for subsequent laboratory analysis.

6.1.1 Borehole Drilling Operations and Logging

Sixteen boreholes (BH101 to BH116) were drilled in accessible areas across the site and positioned to provide even coverage (subject to existing obstructions). The boreholes were advanced with an 85mm diameter stainless steel hand auger and terminated within the natural, undisturbed silty clay soil profile at depths between 0.6m and 1.0m bgs. Borehole BH111 refused within the fill unit at a depth of 0.4m bgs.

To minimise cross contamination between sampling locations, the hand auger was washed with Decon90, a laboratory grade cleaning agent and decontaminant, at the start of the fieldwork and after each boreholes. The auger was then rinsed vigorously with water after to ensure the removal of all traces of contamination as well as the cleaning agent.

During drilling, the encountered fill material and any natural soil was geologically logged, taking care to describe the presence and depth of any adverse aesthetics such

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as discolouration or odours, of which there were none. Detailed descriptions of the subsurface conditions on site are provided in the borehole logs provided in **Appendix E**.

6.1.2 Soil Sampling

A total of 38 primary samples were collected from the sixteen boreholes. This included a near-surface sample (0 – 200mm) sample, followed by samples at regular intervals or changes in soils type. Each sample was collected by hand using dedicated, disposable nitrile gloves in general accordance with techniques described in Australian Standard AS4482.2 (reference 10) and NEPM (2013 – reference 4), to maintain the representativeness and integrity of the samples. The soil was then placed in laboratory supplied, acid washed glass jars.

Field screening of samples for the potential presence of volatile contaminants, such as fuel, was not carried out, however, there was no obvious hydrocarbon odour noted during the fieldwork and the majority of near surface soil samples were analysed for volatile component of Total Petroleum Hydrocarbons, which is more conclusive than field screening with a PID.

The samples for laboratory analysis were each labelled with a unique sample identification number, in addition to the date of collection and project number, before being placed on ice within an esky. The sample identification number was repeated on the borehole logs (**Appendix E**)

At the completion of each borehole, including logging and the sampling of soils, each borehole was backfilled with soil cuttings. A summary of the samples collected during this investigation is provided in **Table 2**.

6.1.3 Groundwater Monitoring and Sampling

Groundwater was sampled from an existing monitoring well (BH07), installed by Coffey Geotechnics Pty Ltd. Sampling was undertaken following purging of the wells to remove stagnant water from the well casing and to ensure that the samples are representative of groundwater in the surrounding geological formation.

Immediately prior to purging and sampling, the well was dipped to determine the depth to stabilised water level and, using a clear disposable bailer, assessed for the presence of a hydrocarbon sheen and Light Non-Aqueous Phase Liquids (LNAPLs) which may be floating on the water. Neither sheen nor LNAPLs was observed on the surface of the

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water in each well. Additionally there was no adverse odour associated with the water within each well.

Purging of the monitoring well took place on the 2nd of November 2016. The well was installed within a low-transmissive formation, therefore, slow to re-charge and thus purging was undertaken using a high volume pump with dedicated tubing until practically dry. Following purging, the wells were allowed to recharge to at least 80% before sampling later the same day, using dedicated Waterra foot valves.

A calibrated water quality meter was used during the sampling to assess pH, redox potential (Eh), electrical conductivity (EC), dissolved oxygen (DO) and temperature.

The groundwater was collected directly into laboratory supplied sample containers in order of volatility, with the most volatile substances collected first. Samples to be analysed for metals were collected last and filtered in the field using a new disposable 0.45micron filter and syringe. Samples to be analysed for volatile substances (*e.g.* BTEX), were filled to the container brim and capped, making sure that there were no bubbles / headspace.

All sample containers were immediately placed within an esky in which ice had been added. At the end of each sampling day the samples in the esky were transported to the GEE office where more ice was added and the samples delivered to the laboratory (within one working day).

All sample containers were labelled with the sample number, project number and date collected and the information repeated on a Chain-of-Custody (COC) form which accompanied the samples to the laboratory. The chain-of custody form (provided by the laboratory) demonstrates that the samples were properly received, documented, processed and stored.

While on site, the supervising engineer/scientist filled out a copy of the GEE "Groundwater Sampling Field Sheet" which documents, the sample identification, date of sampling, time of sampling, stabilised groundwater level, water quality field screening results, physical description of the water, presence or absence of odour, well condition and volumes purged. A copy of the "Groundwater Sampling Field Sheet" is provided in **Appendix F**.

Finally, it is noted that the purging and sampling equipment did not require decontamination because GEE used dedicated equipment for each well.

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A summary of the groundwater samples collected and analysed during this investigation are provided in **Table 3**.

6.2 ANALYTICAL PROGRAM

In accordance with Section 5.2, selected soil samples were analysed for a broad suite of potential contaminants, including:

- ♦ Metals (Arsenic, Cadmium, Chromium, Copper, Nickel, Lead and Zinc)
- ♦ TRH
- ♦ BTEX
- ♦ PAH
- ♦ OCPs
- ♦ OPPs
- ♦ PCBs
- ♦ Asbestos.

Also, the pH and Cation Exchange Capacity (CEC) of some samples was also analysed to assist with determining the most appropriate ecological assessment criteria for some metals.

The groundwater samples collected from existing groundwater wells were analysed for dissolved metals, TRH, BTEX, PAH and VOC. The primary soil and groundwater environmental samples were analysed by Envirolab Services Pty Ltd which is National Association of Testing Authorities (NATA) registered for the testing undertaken.

A summary of the soil analytical program, including which samples were selected for analysis and the chemicals analysed, is provided in **Table 2**, while a summary of the groundwater analytical program is provided in **Table 3**.

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 Table 2: Summary of the Sampling and Analysis Program

		Sample			Ana	lytical P	rogram	
Location	Sample Id	Sample Depth	Material Type	Metals	TRH/ BTEX	PAHs	OCPs / PCBs	Asbestos
			Primary Samples					
BH101	SM311016-1	0.0 - 0.15	Topsoil/Fill	✓	✓	✓	✓	✓
BH101	SM311016-2	0.4 - 0.6	NATURAL	✓				
BH102	SM311016-4	0.0 - 0.2	Topsoil/Fill	✓				
BH102	SM311016-5	0.2 - 0.35	FILL	✓	\checkmark	\checkmark		
BH102	SM311016-6	0.5 - 0.7	NATURAL					
BH103	SM311016-7	0.0 – 0.15	Topsoil/Fill	✓	✓	\checkmark		
BH103	SM311016-8	0.3 - 0.45	NATURAL	✓				
BH104	SM311016-10	0.0 – 0.15	Topsoil/Fill	✓				
BH104	SM311016-11	0.2 - 0.35	FILL	✓	✓	\checkmark	✓	✓
BH104	SM311016-12	0.4 – 0.55	NATURAL					
BH105	SM311016-13	0.0 – 0.15	Topsoil/Fill	✓	✓	\checkmark		✓
BH105	SM311016-14	0.2 - 0.35	FILL	✓	✓	\checkmark		
BH105	SM311016-15	0.4 – 0.55	NATURAL	✓				
BH106	SM311016-16	0.0 – 0.15	Topsoil/Fill	✓		\checkmark		
BH106	SM311016-17	0.3 - 0.45	NATURAL	✓				
BH107	SM311016-18	0.0 – 0.15	Topsoil/Fill	✓	✓	✓		
BH107	SM311016-19	0.2 - 0.35	NATURAL	✓	✓	✓		
BH108	AC011116-04	0.1 – 0.2	Topsoil/Fill	✓	✓	✓		
BH108	AC011116-05	0.35 - 0.5	NATURAL	✓				
BH109	AC011116-07	0.1 – 0.2	Topsoil/Fill	✓				
BH109	AC011116-08	0.3 - 0.4	NATURAL	✓				
BH109	AC011116-09	0.7 – 0.8	NATURAL					
BH110	AC011116-10	0.1 – 0.2	Topsoil/Fill	✓				
BH110	AC011116-11	0.2 - 0.3	NATURAL	✓	✓	✓		
BH110	AC011116-12	0.6 - 0.7	NATURAL					
BH111	AC011116-13	0.1 – 0.2	FILL	✓	✓	✓	✓	✓
BH112	AC011116-14	0.1 – 0.2	Topsoil/Fill	✓	✓	✓		
BH112	AC011116-15	0.4 - 0.5	NATURAL	✓				
BH112	AC011116-16	0.8 - 0.9	NATURAL					
BH113	AC011116-17	0.1 – 0.2	NATURAL	✓	✓	✓		
BH113	AC011116-18	0.5 – 0.6	NATURAL					
BH114	AC011116-19	0.1 – 0.2	Topsoil/Fill	✓	✓	✓		
BH114	AC011116-20	0.7 - 0.8	NATURAL	✓				
BH115	AC011116-21	0.1 – 0.2	Topsoil/Fill	✓				
BH115	AC011116-22	0.5 – 0.6	NATURAL	✓				

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BH115	AC011116-23	0.9 – 1.0	NATURAL					
BH116	AC011116-01	0.1 – 0.2	FILL	✓	\checkmark	\checkmark		
BH116	AC011116-02	0.3 - 0.4	NATURAL	✓				
BH116	AC011116-03	0.7 – 0.8	NATURAL					
	-	Total		31	15	16	3	4
Quality Control Samp				es				
BH101	SM311016-3	Blind Replicate	of 'SMC311016-2'					
BH103	SM311016-9	Blind Replicate	of 'SMC311016-8'	✓				
BH107	SM311016-20	Split duplicate	of 'SMC311016-19'	✓	✓	✓		
BH108	AC011116-06	Blind Replicate	of 'AC011116-05'	✓				
	Trip Blank	S	Sand		√ 1			
	Trip Spike	S	Sand		√ ²			

Note 1: BTEX and TRH (C6-C9) only

Note 2: BTEX only

Table 3: Summary of the Groundwater Sampling and Analysis Program

Location	Cample Id	Analytical Program						
Location	Sample Id	Metals	TRH/BTEX	PAHs	VOCs			
	Primary Groundwater Samples							
BH07	SM021116-GW7	✓	✓	✓	✓			
	Quality 0	Control San	nples					
	Trip Blank		√1					
	Trip Spike		√2					

Note 1: BTEX and TRH (C6-C9) only

Note 2: BTEX only

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7 DATA QUALITY ASSESSMENT

A detailed Quality Assurance (QA) assessment, including the analysis of Quality Control (QC) samples, was carried out by GEE to determine the suitability and reliability of field procedures and analytical results. In accordance with NSW DEC (reference 9), the QA assessment used Data Quality Indicators (DQIs) which included:

- ♦ precision.
- ♦ accuracy (or bias).
- representativeness.
- ◊ completeness.
- ♦ comparability.

The detailed QA assessment report is provided in **Appendix G**, and concludes that the field procedures and analytical data presented herein are of suitable quality for making conclusions and recommendations regarding the contamination status of the site.

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8 ASSESSMENT CRITERIA

8.1 AESTHETICS

For any contamination assessment, it is necessary to assess the human health and ecological risks associated with the presence of site contamination. In this regard, appropriate human health and ecological investigation and/or screening levels need to be defined and are referred herein as the Site Assessment Criteria (SAC).

Also, in accordance with Appendix I of DEC, 2006 guidelines (reference 9), residential sites need to address aesthetics such as highly malodorous soils. Aesthetics was continually assessed in the field during borehole drilling and logging and no significant and adverse observations were noted.

8.2 SOIL SAMPLES

8.2.1 Ecological Investigation / Screening Levels

To address potential ecological risks, GEE has compared the soil analytical results against the Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) appropriate for the land-use as detailed in NEPM (2013), *Schedule B(1) – Guidelines on Investigation Levels for Soil and Groundwater* (reference 14).

8.2.1.1 EILs

EILs were derived for common contaminants in soil (specifically Arsenic, Copper, Chromium (III), DDT, naphthalene, Nickel, Lead and Zinc) and are based on a species sensitivity distribution (SSD) model developed for Australian conditions. They consider the physicochemical properties of soil (e.g. Cation Exchange Capacity, pH and clay content), contaminants and the capacity of the local ecosystem to accommodate increases in contaminant levels (referred to as the 'added contaminant limit' or ACL) above ambient background. Also, EILs consider various land use scenarios and generally only apply to the top 2m of soil which corresponds to the root zone and habitation zone of many species.

Finally, different EILs apply for 'fresh' contamination and 'aged' contamination. 'Fresh' contamination is usually associated with current activity and chemical spills, while a contaminant that has been incorporated into a soil for more than 2 years is considered to be 'aged'. For the purpose of this report 'aged' EILs have been adopted because any contamination present at the site is likely to have been present for more than 2 years.

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To assist with determining appropriate EILs to screen the soil analytical results, particularly for Copper, Chromium -III, Nickel and Zinc, the Cation Exchange Capacity (CEC) and pH of the soil was analysed for each of the samples. The CEC values for each sample ranged from 3.2 to 15.0 meq/100g, while the pH values ranged from 5.0 to 7.4. For the purpose of this report, and to screen the analytical results, GEE has adopted the lowest values for both CEC and pH which was a CEC of 3.2 meq/100g and pH of 5.0. Additionally, a value of 1% clay composition has been adopted when determining the EIL for chromium (III).

When determining the EILs for Copper, Nickel, Chromium and Zinc, ambient background concentrations can be used to increase the final EIL, however, for the purpose of this investigation zero ambient background concentrations have been adopted.

The broad land-use scenarios are areas of ecological significance, urban residential/public space, and commercial/industrial. Each land-use scenario assumes different exposure scenarios and are generally based on the land-use at ground floor level. For the proposed development, which includes a basement which occupies the majority of the site footprint, commercial land-use on ground floor with residential living areas above, the most appropriate land use scenario is commercial / industrial, however GEE has been conservative and adopted the residential setting.

A summary of the EILs appropriate for the site is provided in **Table 4**.

8.2.1.2 ESLs

ESLs have been developed for selected petroleum hydrocarbon compounds (specifically TRH⁴, BTEX and Benzo(a)pyrene) and are applicable for assessing risk to terrestrial ecosystems. ESLs broadly apply to coarse- and fine-grained soils and like EILs the ESLs consider various land use scenarios, only apply to the top 2m of soil and differ for 'fresh' contamination and 'aged' contamination. For the purpose of this report, coarse-grained soil and 'aged' ESLs have been adopted. Coarse grained soil was adopted over fine grained soil because it provides the most conservative criteria and if an exceedance occurs then the criteria will be adjusted to suit the actual soil type.

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⁴ ESLs for the various carbon fractions are based on TRH analysis with F1 (C6-C9) being obtained after subtraction of BTEX.



With respect to land-use, residential ESLs have been adopted and like with EILs, these are considered to be conservative considering the proposed development incorporates a basement with commercial tenancies on ground floor.

A summary of the ESLs appropriate for the site is provided in **Table 4**. GEE notes that screening levels are the concentrations of a contaminant above which will require further evaluation and consideration.

8.2.2 Health Investigation Levels

To address potential health impacts at the site, GEE has compared the analytical results against Health Investigation Levels (HILs) and Health Screening Levels (HSLs), provided in NEPM (2013), *Schedule B(1) – Guidelines on Investigation Levels for Soil and Groundwater* (reference 14).

8.2.2.1 HILS

The HILs are scientifically based, generic assessment criteria to be used as a first stage (or tier 1) screening of potential risks to human health from chronic exposure to contaminants. They are intentionally conservative and are based on four different and generic land use scenarios (i.e. HIL-A described as residential with accessible soils, HIL-B which includes residential with minimal opportunities for soil access, HIL-C for public space such as parks and HIL-D for commercial/industrial sites). Each land-use scenario assumes different exposure scenarios and are generally based on the land-use at ground floor level. For the proposed development, which includes a basement which occupies the majority of the site footprint, commercial land-use on ground floor with residential living areas above, the most appropriate land use scenario is commercial / industrial (i.e. exposure setting HIL-D), however GEE has been conservative and adopted the HIL-B setting.

HILs for soil contaminants are provided in Table 1A(1) of the NEPM guidelines and includes metals, PAHs, Pesticides and PCBs. Petroleum hydrocarbons are not included.

A summary of the HILs appropriate for the site is provided in **Table 4**.

8.2.2.2 HSLs

Health Screening Levels (HSLs) were developed for selected petroleum hydrocarbons (specifically TRH C_6 – C_{10} or F1 fraction, TRH > C_{10} – C_{16} or F2 fraction and BTEX) by the Cooperative Research Centre for Contamination Assessment and Remediation of the

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Environment (CRC CARE) and have been adopted and are referenced in Schedule B(1) of NEPM (2013 – reference 14) and Friebel & Nadebaum (2011 – reference 15).

Typically, the assessment of petroleum hydrocarbon contamination is driven by human health concerns relating to volatile components (e.g. TRH $C_6 - C_{10}$, TRH $>C_{10} - C_{16}$ and Benzene) which have the potential to cause health issues via vapour intrusion. For these components, different HSLs apply for different land use scenarios, different soil types (i.e. sand, silt and clay) and different depths. For the purpose of this investigation, criteria relevant for sand soil at a shallow depth (0m to 1m) have been adopted to screen the soil analytical results because they are most conservative. Also the upper fill layer at the site is predominantly granular (i.e. sand and gravel). If a sample exceedance occurs then the criteria will be adjusted to suit actual soil type and depth.

The various land-use scenarios are based on the land-use at ground level. For multistorey buildings where non-residential uses (e.g. car parking or commercial use) exist in a basement or at ground level, then land use category D (commercial/industrial) should be applied, however, GEE has been conservative and adopted category B (residential with minimal access to soil).

For TRH fractions, where there are no vapour intrusion HSLs available, management limits have been adopted (Table 1B(7) – reference 14). The management limits are designed to avoid or minimise potential effects of petroleum hydrocarbons including:

- ♦ The formation of observable light non-aqueous phase liquids (LNAPL),
- ♦ Fire and explosive hazards, and
- ♦ The effects on buried infrastructure e.g. penetration of, or damage to, in-ground services by hydrocarbons.

Again, there are different management limits for the various land use scenarios and GEE has adopted the management limits appropriate for commercial / industrial sites because this is the land-use proposed for the ground floor and there will be a basement below.

Finally, where there are HILs or management limits available for a particular contaminant, GEE has adopted HSLs recommended for direct contact on commercial/industrial sites (Table A4 – reference 17).

A summary of the HSLs appropriate for the site is provided in **Table 4**.

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 Table 4: Soil Site Assessment Criteria (SAC)

Analyte		eening Levels (HILs/HSLs) g/kg)	Ecological Investigation/Screening Levels (EILs/ESLs) (mg/kg)					
·	Exposure Setting B – Residential	Reference	Residential	Reference				
Total Metals								
Arsenic	500	Table 1A – Reference 14	100	Table 1B(5) – Reference 14				
Cadmium	150	Table 1A – Reference 14						
Chromium (VI)	500	Table 1A – Reference 14						
Chromium (III)			190	Table 1B(3) – Reference 14				
Copper	30,000	Table 1A – Reference 14	75	Table 1B(2) – Reference 14				
Lead	1,200	Table 1A – Reference 14	1,100	Table 1B(4) – Reference 14				
Mercury (inorganic)	120	Table 1A – Reference 14						
Nickel	1,200	Table 1A – Reference 14	15	Table 1B(3) – Reference 14				
Zinc	60,000	Table 1A – Reference 14	170	Table 1B(1) – Reference 14				
	Total	Polychlorinated Biphenyls (PCE	Bs)					
Total PCBs	1	Table 1A – Reference 14						
	Polycy	clic Aromatic Hydrocarbons (PA	AHs)					
Naphthalene	3	Table 1A(3) – Reference 14	170	Table 1B(5) – Reference 14				
Benzo(a)pyrene			0.7	Table 1B(6) – Reference 14				
Benzo(a)pyrene TEQ	4	Table 1A – Reference 14						
TOTAL PAHs	400	Table 1A – Reference 14						
	O	rganochlorine Pesticides (OCP)						
Heptachlor	10	Table 1A – Reference 14						
Aldrin + Dieldrin	10	Table 1A – Reference 14						
Endrin	20	Table 1A – Reference 14						
Chlordane	90	Table 1A – Reference 14						
Endosulfan	400	Table 1A – Reference 14						
HCB	15	Table 1A – Reference 14						
Methoxychlor	500	Table 1A – Reference 14						
DDE + DDD + DDT	600	Table 1A – Reference 14						
DDT			180	Table 1B(5) – Reference 14				
וטט		BTEX	100	Table 1b(0) - Reference 14				
Benzene	0.5	Table 1A(3) – Reference 14	50	Table 1B(6) – Reference 14				
Toluene	160	Table 1A(3) – Reference 14	85	Table 1B(6) – Reference 14				
Ethylbenzene	55	Table 1A(3) – Reference 14	70	Table 1B(6) – Reference 14				
Xylenes	40	Table 1A(3) – Reference 14	45	Table 1B(6) – Reference 14				
Луюноз		Recoverable Hydrocarbons (TR		Table 1b(0) - Reference 14				
(F1) C6 – C10	45	Table 1A(3) – Reference 14	180	Table 1B(6) – Reference 14				
(F2) >C10 - C16	110	Table 1A(3) – Reference 14	120	Table 1B(6) – Reference 14				
(F3) >C16 - C34	2,500	Table 1B(7) – Reference 14	300	Table 1B(6) – Reference 14				
(F4) >C34 – C40	10,000	Table 1B(7) – Reference 14	2,800	Table 1B(6) – Reference 14				
(1 7) 2004 - 040	10,000	Asbestos	2,000	Table 10(0) - Nelelelice 14				
Surface Soil	No visible Asbestos	Table 7 – Reference 14						
Buried Bonded	0.04%	Table 7 – Reference 14 Table 7 – Reference 14						
								
Buried Friable	0.001%	Table 7 – Reference 14						

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8.3 WATER SAMPLES

Assessment criteria for groundwater were derived from the NEPM (2013), *Schedule* B(1) – *Guidelines on Investigation Levels for Soil and Groundwater* (reference 14) which are based on the ANZECC/ARMCANZ (2000) *water quality guidelines (reference* 16). However, with respect to specific petroleum hydrocarbons the assessment criteria provided in NEPM (2013) are based on Health Screening Levels (HSLs) developed by the Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) and published by Friebel & Nadebaum (2011 – reference 15).

Typically the assessment of petroleum hydrocarbon contamination is driven by human health concerns relating to volatile components (e.g. TRH $C_6 - C_{10}$ (F1), TRH $> C_{10} - C_{16}$ (F2), BTEX and Naphthalene) which have the potential to cause health issues or explosive risks via vapour intrusion. The HSL criterion depends on the soil type, the depth to groundwater and land-use scenario where the groundwater exists. The HSLs change depending on the soil type and depth to groundwater and for the purpose of this assessment GEE have adopted the most conservative criteria which relates to sand and a depth of less than 2.0 metres. Also, an exposure scenario of residential land-use with minimal access to soil (HSL-B) has been adopted even commercial/industrial land-use (HSL-D) could be used because the living areas of the development are no on the ground floor but rather the upper floors.

For other analytes not covered by HSLs, GEE has adopted the Groundwater Investigation Levels (GILs) which are derived from the from ANZECC/ARMCANZ (2000) water quality guidelines (reference 16). GILs for fresh water were adopted for this study rather than fresh water guidelines, on the basis that the receiving system for groundwater at the site is most likely to be Terrys Creek which eventually leads into Lane Cove River. Also the electrical conductivity of the water within the groundwater well was low. A search of registered groundwater bores in the vicinity of the site did not reveal any drinking water extraction wells and therefore drinking water guidelines levels were not appropriate.

ANZECC/ARMCANZ (2000) specifies four sets of trigger values corresponding with different levels of protection for ecosystem conditions. Trigger values, derived using the statistical distribution method, relate to the protection of 99%, 95%, 90% and 80% of species in an aquatic ecosystem. Three "categories of ecosystem conditions" are developed in the guidelines and the level of protection afforded to a particular ecosystem should be determined following consideration of site conditions in consultation with key stakeholders. Additionally, for each chemical, ANZECC/ARMCANZ

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(2000) provides three grades of guideline trigger values: high, moderate or low reliability trigger values. The grade depends on the data available and hence the confidence or reliability of the final figures.

The groundwater investigation levels (GILs) in NEPM (2013) relate to "slightly to moderately disturbed" aquatic ecosystems and adopt trigger values based on a 95% level of protection, however, this is increased to 99% for some chemicals that have the potential to bioaccumulate or where the 95% value may not provide sufficient protection for key species. In the absence of high or moderate reliable fresh water criteria, GEE has adopted the high or moderate reliable criteria for marine water. Then, in the absence of high or moderate trigger values, GEE has applied low reliability trigger levels from ANZECC/ ARMCANZ (2000) as 'first pass' criteria. It should be noted that low reliability trigger values were originally derived from insufficient data sets and should not be used as final guidelines but as indicative interim figures, which if exceeded, suggest the need to obtain further data.

Finally, in all cases where the laboratory limit of reporting exceeds the ANZECC/ARMCANZ (2000) trigger value, the detection limit of that analyte is used as a trigger for further investigation.

A summary of the Groundwater Assessment Criteria (GAC) adopted for this site is provided in **Table 5**.

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Table 5: Groundwater Assessment Criteria (GAC)

Analyte	Units	GILs 1	Source
Metals			
Arsenic V	μg/L	13	Table 1C (fresh) - Reference 14
Cadmium	μg/L	0.2	Table 1C (fresh) - Reference 14
Chromium VI	μg/L	1	Table 1C (fresh) - Reference 14
Copper	μg/L	1.4	Table 1C (fresh) - Reference 14
Lead	μg/L	3.4	Table 1C (fresh) - Reference 14
Nickel	μg/L	11	Table 1C (fresh) - Reference 14
Zinc	μg/L	8	Table 1C (fresh) - Reference 14
Mercury (inorganic)	μg/L	0.06	Table 1C (fresh) - Reference 14
Polycyclic Aromatic Hydro			, ,
Naphthalene	μg/L	16	Table 1C (fresh) - Reference 14
Anthracene	μg/L	0.4	Reference 16
Phenanthrene	μg/L	2	Reference 16
Fluoranthene	μg/L	1.4	Reference 16
Benzo(a)pyrene	μg/L	0.2	Reference 16
Total Petroleum Hydrocarb			
(F1) C6 – C10	μg/L	1,000 ²	Table 1A(4) - Reference 14
(F2) >C10 - C16	μg/L	1,000 ²	Table 1A(4) - Reference 14
(F3) >C16 – C34	μg/L		
(F4) >C34 - C40	μg/L		
VOCs (Including BTEX)			
Benzene	μg/L	800	Table 1A(4) - Reference 14
Toluene	μg/L	180	Reference 16 (fresh)
Ethylbenzene	μg/L	80	Reference 16 (fresh)
para-Xylene	μg/L	200	Table 1C (fresh) - Reference 14
ortho-Xylene	μg/L	350	Table 1C (fresh) - Reference 14
1.2-Dichloropropane	μg/L	900	Reference 16
1.1.1-Trichloroethane	μg/L	270	Reference 16
Carbon Tetrachloride	μg/L	240	Reference 16
1.2-Dichloroethane	μg/L	1,900	Reference 16
1.1.2-Trichloroethane	μg/L	1,900	Table 1C (marine) - Reference 14
1.3-Dichloropropane	μg/L	1100	Reference 16
1.1.2.2-Tetrachloroethane	μg/L	400	Reference 16
1.2.3-Trichlorobenzene	μg/L	3	Reference 16
Chloroform	μg/L	370	Reference 16
1.2-Dichlorobenzene	μg/L	160	Table 1C (fresh) - Reference 14
1.3-Dichlorobenzene	μg/L	260	Table 1C (fresh) - Reference 14
1.4-Dichlorobenzene	μg/L	60	Table 1C (fresh) - Reference 14
1.2.3-Trichlorobenzene	μg/L	3	Table 1C (fresh)- Reference 14
1.2.4-Trichlorobenzene	μg/L	85	Table 1C (fresh)- Reference 14
Hexachlorobenzene (HCB)	μg/L	0.05	Reference 16

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Notes:

- ¹ Criteria shown in italics are low reliability trigger values used as a first pass assessment in the absence of more reliable trigger values.
- ² Criteria depends on the type of soil and depth of sample. Criteria adopted is for sandy soil which is the most conservative and residential land use (HSL-B).

NL - Criteria Not Limiting

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9 ANALYTICAL RESULTS

9.1 SOIL SAMPLES

A copy of the laboratory report is provided in **Appendix H**, while a summary of the results compared to the SAC (**Table 6**) and is provided in below.

9.1.1 *Metals*

A total of 31 primary samples were analysed for the presence of metals, specifically, arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury. A summary of the results is provided below:

	Number			9	SAC .	Excee	edances
<u>Metal</u>	<u>of</u> <u>Samples</u> <u>Analysed</u>	<u>Minimum</u> <u>Value</u>	<u>Maximum</u> <u>Value</u>	<u>Health</u>	<u>Ecological</u>	<u>Health</u>	<u>Ecological</u>
Arsenic	31	<4	21	500	100	0	0
Cadmium	31	< 0.4	1	150		0	0
Chromium	31	6	26	500	190	0	0
Copper	31	4	78	30,000	75	0	1
Lead	31	<1	790	1,200	1,100	0	0
Mercury	31	< 0.1	0.2	120		0	0
Nickel	31	4	12	1,200	15	0	0
Zinc	31	20	230	60,000	170	0	3

In summary, there were no samples that contained metal concentrations above the health-based SAC, however, a few samples (SM311016-7, SM311016-16 and AC011116-14) contained concentrations of copper and/or zinc above the ecological based SAC. As previously mentioned, the ecological-based SAC are dependent on the CEC and/or pH of the individual samples. The SAC provided in **Table 4** are based on the lowest values of CEC and pH for all samples (i.e. 5.0 pH and 3.2 meq/100g) and was done as the 'first pass' assessment of the results. The actual CEC and pH results for these three samples are as follows:

Sample ID	Actual pH value	Actual CEC (meq/100g)
SM311016-7	6.2	15
SM311016-16	5.8	10
AC011116-14	5.4	11

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When using the actual CEC and pH values for each sample, the ecological SAC increases as indicated below:

Sample ID	Sample Concentration (mg/kg)	'First Pass' Ecological SAC (mg/kg)	Actual Ecological SAC
	Copper		
SM311016-16	78	75	180
	Zinc		
SM311016-7	200	170	550
SM311016-16	230	170	420
AC011116-14	180	170	330

As shown above, when adopting the individual pH and CEC sample results the sample concentrations were below the SAC. Based on the analytical results, GEE considers that metals do not pose a contamination issue for the proposed development.

9.1.2 TRH and BTEX

Fifteen primary samples were selected for TRH and BTEX analysis. A summary of the results is provided below:

<u>Analyte</u>	Number of Samples Analysed	Minimum Value	Maximum Value	Health	SAC Ecological	Number of Exceedances
TRH C6-C10 (F1)	15	<25	<25	45	180	0
TRH >C10 - C16 (F2)	15	< 50	< 50	110	120	0
TRH >C16 - C34 (F3)	15	<100	<100	2,500	300	0
TRH >C34 - C40 (F4)	15	<100	<100	10,000	2,800	0
Benzene	15	<0.2	< 0.2	1	50	0
Toluene	15	< 0.5	< 0.5	160	85	0
Ethybenzene	15	<1	<1	55	70	0
Xylenes	15	<2	<2	40	45	0

On the basis of the soil analytical results, and the fact that there was no obvious hydrocarbon odour noted during the fieldwork, GEE considers that TRH and BTEX does not to pose a contamination issue for the proposed development.

9.1.3 *PAHs*

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A total of sixteen primary samples were analysed for PAHs. A summary of the results is provided below:

	Number of	Minimum	Maximum	<u> </u>	SAC .	Number of
<u>Analyte</u>	<u>Samples</u> <u>Analysed</u>	<u>Value</u>	<u>Value</u>	<u>Health</u>	<u>Ecological</u>	<u>Exceedances</u>
Naphthalene	16	< 0.1	<0.1	3	170	0
Benzo(a)pyrene	16	< 0.05	0.65		0.7	0
Benzo(a)pyrene TEQ	16	< 0.5	0.8	4		0
Total PAHs	16	NIL(+)VE	6.2	400		0

Based on the soil analytical results, GEE considers that PAHs do not pose a contamination issue for the proposed development.

9.1.4 OCPs and PCBs

Three primary samples were analysed for OCPs and PCBs and a summary of the results is provided below:

	Number of	Minimum	Maximum		<u>SAC</u>	Number of
<u>Analyte</u>	<u>Samples</u> <u>Analysed</u>	<u>Value</u>	<u>Value</u>	<u>Health</u>	<u>Ecological</u>	<u>Exceedances</u>
Heptachlor	3	< 0.1	<0.1	10		0
Aldrin + Dieldrin	3	< 0.1	0.1	10		0
Endrin	3	< 0.1	< 0.1	20		0
Chlordane	3	<0.1	< 0.1	90		0
Endosulfan	3	< 0.1	< 0.1	400		0
НСВ	3	<0.1	< 0.1	15		0
Methoxychlor	3	<0.1	< 0.1	500		0
DDE + DDD + DDT	3	< 0.1	0.1	600		0
DDT	3	<0.1	< 0.1		180	0
Total PCBs	3	<0.1	<0.1	1		0

On the basis of the soil analytical results, OCPs and PCBs are not considered to be a contamination issue for the development.

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9.1.5 Asbestos

Asbestos fibres were not detected in each of the four near surface soil samples selected for analysis and there were no obvious visible fragments of asbestos containing materials (such as fibro) observed below the surface in the sixteen boreholes.

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TABLE 6 - Summary of Analytical Results (Soil)

Sample ID		SM311016-1	SM311016-2	SM311016-4	SM311016-5	SM311016-7	SM311016-8	SM311016-9	SM311016-10	SM311016-11	SM311016-13	SM311016-14	SM311016-15	Site Accept	ance Criter
	Location	BH101	BH101	BH102	BH102	BH103	BH103	Blind	BH104	BH104	BH105	BH105	BH105		
Analyte	Depth	0.0 – 0.15	0.4 - 0.6	0.0 - 0.2	0.2 - 0.35	0.0 - 0.15	0.3 - 0.45	Replicate	0.0 - 0.15	0.2 - 0.35	0.0 - 0.15	0.2 - 0.35	0.4 - 0.55	Health	Ecologic
j	Туре	Topsoil/Fill	NATURAL	Topsoil/Fill	FILL	Topsoil/Fill	NATURAL	of '09'	Topsoil/Fill	FILL	Topsoil/Fill	FILL	NATURAL		
Asbestos															
Asbestos Detected	-	No								No	No			0.04%	
Respirable Fibres	-	No								No	No			0.001%	
Metals															
Arsenic	mg/kg	12	13	<4	5	6	7	7	5	5	5	6	8	500	100
Cadmium	mg/kg	1	< 0.4	< 0.4	< 0.4	0.5	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	150	
Chromium ¹	mg/kg	26	13	18	16	15	16	16	15	16	16	16	18	500	190
Copper	mg/kg	33	24	36	27	62	26	26	41	22	29	20	22	30,000	75
Lead	mg/kg	790	56	550	65	260	20	18	56	23	99	33	20	1,200	1,10
Mercury	mg/kg	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	120	
Nickel	mg/kg	8	9	4	8	9	4	4	8	8	10	9	8	1,200	15
Zinc	mg/kg	170	46	36	47	200	27	25	56	25	150	170	110	60,000	170
BTEX	J														
Benzene	mg/kg	< 0.2			< 0.2	< 0.2				< 0.2	< 0.2	< 0.2		1	50
Toluene	mg/kg	< 0.5			< 0.5	< 0.5				< 0.5	< 0.5	< 0.5		160	85
Ethylbenzene	mg/kg	<1			<1	<1				<1	<1	<1		55	70
Total Xylenes	mg/kg	<2			<2	<2				<2	<2	<2		40	45
TRH		· <u>-</u>			· -	·				·	·-	·			
TRH C ₆ - C ₁₀ (F1)	mg/kg	<25			<25	<25				<25	<25	<25		45	180
$\Gamma RH > C_{10} - C_{16} (F2)$	mg/kg	<50			<50	<50				<50	<50	<50		110	120
TRH $>C_{16}-C_{34}$ (F3)	mg/kg	<100			<100	<100				<100	<100	<100		2,500	300
TRH $> C_{34} - C_{40}$ (F4)	mg/kg	<100			<100	<100				<100	<100	<100		10,000	2,80
PAHs	mg/kg	1100			100	100				1100	1100	1100		10,000	2,00
Naphthalene	mg/kg	<0.1			<0.1	<0.1				<0.1	<0.1	<0.1		3	170
Benzo(a)pyrene	mg/kg	<0.05			<0.05	0.05				0.1	0.2	0.07			0.7
Benzo(a)pyrene TEQ	mg/kg	<0.03	 	 	<0.05	< 0.5			 	< 0.5	< 0.5	< 0.5		4	
Total PAHs	mg/kg	NIL (+)VE			NIL (+)VE	0.16				0.15	2.6	0.32		40	
OCPs	mg/kg	MIL (+)VL			IVIL (+)VL	0.10				0.15	2.0	0.32		40	
Heptachlor	mg/kg	<0.1								<0.1				10	
Aldrin	mg/kg	<0.1 <0.1			 		 			<0.1				10	
Dieldrin	mg/kg	<0.1 0.1								<0.1				10	
Endrin														20	
	mg/kg	<0.1								< 0.1				20	
gamma-Chlordane	mg/kg	< 0.1								< 0.1				90	
alpha-chlordane	mg/kg	< 0.1								< 0.1					
Endosulfan I	mg/kg	< 0.1								< 0.1				400	
Endosulfan II	mg/kg	<0.1								< 0.1				4-	
HCB	mg/kg	<0.1								< 0.1				15	
Methoxychlor	mg/kg	<0.1								< 0.1				500	
pp-DDE	mg/kg	0.1								< 0.1					
pp-DDD	mg/kg	<0.1								< 0.1				600	
pp-DDT	mg/kg	<0.1								<0.1					180
PCBs															
Total PCBs	mg/kg	< 0.1								< 0.1				1	

TABLE NOTES

Analytical results which exceed any of the Health-based Investigation Levels (HILs) are shown as **bold** text.

Analytical results which exceed any of the Ecological-based Investigation Levels (PILs) are shown as boxed text.

1 – Total Chromium analytical result includes chromium (III) and (VI).

TABLE 6 - Summary of Analytical Results (Soil)

Sample ID		SM311016-16	SM311016-17	SM311016-18	SM311016-19	SM311016-20	AC011116-01	AC011116-02	AC011116-04	AC011116-05	AC011116-06	AC011116-07	AC011116-08	Site Accepta	ance Criteria
	Location	BH106	BH106	BH107	BH107	Split	BH116	BH116	BH108	BH108	Blind	BH109	BH109		
Analyte	Depth	0.0 - 0.15	0.3 - 0.45	0.0 – 0.15	0.2 - 0.35	Duplicate	0.1 – 0.2	0.3 - 0.4	0.1 – 0.2	0.35 - 0.5	Replicate	0.1 – 0.2	0.3 - 0.4	Health	Ecological
	Type	Topsoil/Fill	NATURAL	Topsoil/Fill	NATURAL	of ' 19'	FILL	NATURAL	Topsoil/Fill	NATURAL	of '05'	Topsoil/Fill	NATURAL	1	
Asbestos		•		·					•			•			
Asbestos Detected	-													0.04%	
Respirable Fibres	-													0.001%	
Metals															
Arsenic	mg/kg	8	5	5	6	7.2	6	6	<4	6	6	6	7	500	100
Cadmium	mg/kg	1	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	150	
Chromium ¹	mg/kg	16	14	13	14	15	13	15	6	16	16	12	15	500	190
Copper	mg/kg	78	16	13	18	20	17	16	4	16	16	24	21	30,000	75
Lead	mg/kg	470	19	21	19	21	19	19	6	27	20	40	21	1,200	1,100
Mercury	mg/kg	0.1	< 0.1	0.2	< 0.1	< 0.05	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	120	
Nickel	mg/kg	10	8	8	6	7.5	8	6	5	10	9	10	12	1,200	15
Zinc	mg/kg	230	24	31	22	26	28	20	26	45	28	74	44	60,000	170
BTEX															
Benzene	mg/kg			< 0.2	< 0.2	< 0.1	< 0.2		< 0.2					1	50
Toluene	mg/kg			< 0.5	< 0.5	< 0.1	< 0.5		< 0.5					160	85
Ethylbenzene	mg/kg			<1	<1	< 0.1	<1		<1					55	70
Total Xylenes	mg/kg			<2	<2	< 0.3	<2		<2					40	45
TRH															
TRH C ₆ - C ₁₀ (F1)	mg/kg			<25	< 25	<20	<25		< 25					45	180
TRH $>$ C ₁₀ - C ₁₆ (F2)	mg/kg			< 50	< 50	< 50	< 50		< 50					110	120
TRH $>$ C ₁₆ -C ₃₄ (F3)	mg/kg			< 100	< 100	<100	<100		< 100					2,500	300
TRH $>$ C ₃₄ -C ₄₀ (F4)	mg/kg			<100	<100	<100	<100		<100					10,000	2,800
PAHs															
Naphthalene	mg/kg	< 0.1		< 0.1	< 0.1	< 0.5	< 0.1		< 0.1					3	170
Benzo(a)pyrene	mg/kg	0.2		< 0.05	< 0.05	< 0.5	< 0.05		< 0.05						0.7
Benzo(a)pyrene TEQ	mg/kg	< 0.5		< 0.5	< 0.5	< 0.5	< 0.5		< 0.5					4	
Total PAHs	mg/kg	2.6		NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE		NIL (+)VE					40	
OCPs															
Heptachlor	mg/kg													10	
Aldrin	mg/kg													10	
Dieldrin	mg/kg]	
Endrin	mg/kg													20	
gamma-Chlordane	mg/kg													90	
alpha-chlordane	mg/kg]	
Endosulfan I	mg/kg													400	
Endosulfan II	mg/kg														
НСВ	mg/kg													15	
Methoxychlor	mg/kg													500	
pp-DDE	mg/kg														
pp-DDD	mg/kg													600	
pp-DDT	mg/kg														180
PCBs															
Total PCBs	mg/kg													1	

TABLE NOTES:

Analytical results which exceed any of the Health-based Investigation Levels (HILs) are shown as **bold** text.

Analytical results which exceed any of the Ecological-based Investigation Levels (PILs) are shown as boxed text.

1 – Total Chromium analytical result includes chromium (III) and (VI).

TABLE 6 - Summary of Analytical Results (Soil)

Sample ID		AC011116-10	AC011116-11	AC011116-13	AC011116-14	AC011116-15	AC011116-17	AC011116-19	AC011116-20	AC011116-21	AC011116-23	Site Accept	ance Criter
	Location	BH110	BH110	BH111	BH112	BH112	BH113	BH114	BH114	BH115	BH115		
Analyte	Depth	0.1 – 0.2	0.2 - 0.3	0.1 – 0.2	0.1 – 0.2	0.4 - 0.5	0.1 – 0.2	0.1 – 0.2	0.7 – 0.8	0.1 – 0.2	0.9 – 1.0	Health	Ecologica
7 ii laigte	Type	Topsoil/Fill	NATURAL	FILL	Topsoil/Fill	NATURAL	NATURAL	Topsoil/Fill	NATURAL	Topsoil/Fill	NATURAL		
Asbestos	,,	•			•			·		•			
Asbestos Detected	-			No								0.04%	
Respirable Fibres	-			No								0.001%	
Metals													
Arsenic	mg/kg	5	4	4	21	7	8	7	8	6	7	500	100
Cadmium	mg/kg	< 0.4	< 0.4	< 0.4	0.6	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	150	
Chromium ¹	mg/kg	12	12	11	21	11	16	14	16	13	17	500	190
Copper	mg/kg	19	23	24	54	24	21	21	20	19	16	30,000	75
Lead	mg/kg	23	18	16	110	14	32	50	18	23	20	1,200	1,100
Mercury	mg/kg	< 0.1	<0.1	<0.1	0.1	<0.1	< 0.1	<0.1	<0.1	<0.1	<0.1	120	
Nickel	mg/kg	9	8	5	11	7	12	11	9	9	9	1,200	15
Zinc	mg/kg	28	28	29	180	34	49	64	40	37	28	60,000	170
BTEX	mg/ Ng	20	20	<u> </u>	100	<u> </u>	т/	<u> </u>	TO	<u> </u>	20	33,000	1,0
Benzene	mg/kg		<0.2	<0.2	<0.2		<0.2	<0.2				1	50
Toluene	mg/kg		< 0.5	< 0.2	< 0.5		< 0.2	<0.2 <0.5				160	85
							<0.5 <1					55	70
Ethylbenzene Total Yylonos	mg/kg		<1	<1	<1			<1				40	
Total Xylenes TRH	mg/kg		<2	<2	<2		<2	<2				40	45
			. DE	· 2F	.25		.25	.25				45	100
TRH C ₆ - C ₁₀ (F1)	mg/kg		<25	<25	<25		<25	<25				45	180
TRH $> C_{10} - C_{16}$ (F2)	mg/kg		<50	<50	<50		<50	<50				110	120
TRH $> C_{16} - C_{34}$ (F3)	mg/kg		<100	<100	<100		<100	<100				2,500	300
TRH $>$ C ₃₄ -C ₄₀ (F4)	mg/kg		<100	<100	<100		<100	<100				10,000	2,80
PAHs													
Naphthalene	mg/kg		< 0.1	<0.1	<0.1		<0.1	<0.1				3	170
Benzo(a)pyrene	mg/kg		< 0.05	< 0.05	0.1		< 0.05	0.65					0.7
Benzo(a)pyrene TEQ	mg/kg		< 0.5	< 0.5	< 0.5		< 0.5	8.0				4	
Total PAHs	mg/kg		NIL (+)VE	NIL (+)VE	1.4		NIL (+)VE	6.2				40	
OCPs													
Heptachlor	mg/kg			< 0.1								10	
Aldrin	mg/kg			< 0.1								10	
Dieldrin	mg/kg			< 0.1								.0	
Endrin	mg/kg			< 0.1								20	
gamma-Chlordane	mg/kg			< 0.1								90	
alpha-chlordane	mg/kg			< 0.1								70	
Endosulfan I	mg/kg			< 0.1								400	
Endosulfan II	mg/kg			< 0.1								400	
HCB	mg/kg			< 0.1								15	
Methoxychlor	mg/kg			<0.1								500	
pp-DDE	mg/kg			< 0.1									
pp-DDD	mg/kg			<0.1								600	
pp-DDT	mg/kg			<0.1									180
PCBs	<i>y</i> .9												
Total PCBs	mg/kg			<0.1								1	

TABLE NOTES

Analytical results which exceed any of the Health-based Investigation Levels (HILs) are shown as **bold** text.

Analytical results which exceed any of the Ecological-based Investigation Levels (PILs) are shown as boxed text.

1 – Total Chromium analytical result includes chromium (III) and (VI).



9.2 WATER FIELD PARAMETERS

Field parameters (*i.*e. pH, electrical conductivity, dissolved oxygen, redox potential, temperature, odour and other notable observations) were recorded during the sampling of groundwater within the existing groundwater well. A summary of the field parameter information, along with the standing water level readings, is provided in **Table 7**.

Within the monitoring wells, pH was slightly acidic whilst electrical conductivity was relatively low. The dissolved oxygen results were relatively low, which is common for groundwater.

TABLE 7: Groundwater Field Data Results

	Sample I	dentification	SM021116-GW7
Analyte	Units	LOR	BH07
Standing Water Level	m BGS	0.01	0.85
рН	pH units	0.01	6.15
Electrical Conductivity	μS/cm	0.01	752
Temperature	°C	0.1	21.1
Redox Potential	mV	1	32.1
Dissolved Oxygen	mg/L	0.01	1.34

9.3 WATER ANALYTICAL RESULTS

Groundwater from the Coffey well (GW07) was analysed for dissolved metals, TRH, BTEX, PAHs and VOCs. The laboratory results are provided in the laboratory reports in **Appendix H**, while the tabulated results are provided in **Table 8** and summarised below.

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9.3.1 *Metals*

The concentration of dissolved metals in all samples was below the GAC with the exception of nickel and zinc. The concentrations of dissolved nickel and zinc were slightly higher than the GAC, however, GEE notes that the GAC for nickel and zinc provided in Table 5, and reiterated in Table 8, are for soft water (approximately 30 mg/L CaCo3 or less) and the GAC increases with increasing water hardness. The water hardness was 40 mg/L CaCo3 and when taking into account the actual water hardness for each sample the following adjusted GAC are determined (reference 14 and 16):

Sample ID	Location	Sample Concentration	Actual 'adjusted' GAC
SM021116-GW7	GW07	Nickel (15 µg/L)	14 μg/L
31V1021110-GVV7	GWU7	Zinc (43 µg/L)	10.2 μg/L

As shown above, the concentration of nickel and zinc remain higher than the hardness modified GILs. However, GEE considers that these exceedances are not significant because:

- ♦ The groundwater from the site was collected from a stratigraphy comprising shale and according to Hem (1989 reference 17), the concentrations of copper, nickel and zinc are commensurate with naturally occurring background concentrations.
- The GAC is the expected water quality at the 'Point of use' or 'discharge' from groundwater into a surface body of water and the nearest water body is 150m to the south-west of the site. Additionally, the concentrations were only marginally above the GAC and significant dilution is expected upon entering the nearest surface body of water,
- ♦ No significant source of metal contamination was identified in the fill and natural soils across the site.
- ♦ The concentrations detected are commensurate with metal concentrations within the groundwater across the Sydney region.

9.3.2 TRH and BTEX

The concentration of TRH and BTEX in the groundwater was less than the GAC. When combined with the fact that there was no hydrocarbon odour associated with the groundwater, TRH and BTEX is not a groundwater contamination issue at the site.

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9.3.3 *PAHs*

The concentration of PAHs in the groundwater was less than the GAC. This suggests that TRH and BTEX is not a groundwater contamination issue at the site.

9.3.4 *VOCs*

VOCs were water sampled from each well were all less than the GAC. These results suggest that VOCs do not pose a contamination issue for groundwater beneath the site.

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TABLE 8 - Summary of Analytical Results (Groundwater)

TABLE 8 - Summary of Sample Da		2-Nov-16	Groundwater
Sample Identifi		SM021116-GW7	Assessment Criteria
Analyte	Units	GW07	(GAC) ¹
Analyte		Ived Metals	(CAO)
Arsenic	μg/L	<1	13
Cadmium	μg/L	<0.1	0.2
Chromium	μg/L	<1	1
Copper	μg/L μg/L	1	1.4
Lead			3.4
Mercury	μg/L	<0.05	0.06
Nickel	μg/L	15	11
Zinc	μg/L	43	8
ZIIIC	μg/L	PAHs	0
Naphthalene	ug/l	<1 <1	16
Phenanthrene	μg/L	<1 <1	2
Anthracene	μg/L	<1 <1	0.4
Fluoranthene	μg/L		0.4 1.4
	μg/L	<1	
Benzo(a)pyrene	μg/L	<1	0.2
Benzo(a)pyrene TEQ	μg/L	<5	
Total (+VE) PAHs	μg/L	<1 BTEX	
Denzana	/1		000
Benzene	μg/L	<1	800
Toluene	μg/L	<1	180
Ethylbenzene	μg/L "	<1	80
m+p-xylene	μg/L "	<2	200
o-xylene	μg/L	<1	350
vTPH C ₆ - C ₁₀ (F1)	/1	TRH	4.000
	μg/L	<10	1,000
TRH $> C_{10} - C_{16}$ (F2)	μg/L	<50	1,000
TRH $> C_{16} - C_{34}$ (F3)	μg/L	<100	
TRH $>$ C ₃₄ -C ₄₀ (F4)	μg/L	<100	
1,2-dichloroethane	,	ncluding BTEX) <1	1,000
	μg/L	<1 <1	1,900 270
1,1,1-trichloroethane Carbon tetrachloride	μg/L	<1 <1	240
	μg/L		
Benzene	μg/L	<1 <1	5,000
1,1,2-trichloroethane Toluene	μg/L	<1	1,900 <i>180</i>
Ethylbenzene	μg/L	<1	80
m+p-xylene	μg/L	<2	200
1,1,2,2-tetrachloroethane	μg/L	<1	400
o-xylene	μg/L	<1	350
0-xylene 1,3-dichlorobenzene	μg/L	<1 <1	260
1,4-dichlorobenzene	μg/L	<1 <1	260 60
1,4-dichlorobenzene	μg/L	<1 <1	160
	μg/L	<1 <1	76 <i>0</i> 85
1,2,4-trichlorobenzene Hexachlorobutadiene	μg/L	<1 <1	85 0.05
	μg/L		
1,2,3-trichlorobenzene	μg/L	<1	3
1,3-dichloropropane	μg/L	<1	1100
1,2-dichloropropane	μg/L	<1	900
Chloroform	μg/L	<1	370
Remaining VOCs	μg/L "	<lor< td=""><td></td></lor<>	
Hardness Notes:	mg/L	40	

Notes:

Results exceeding this criteria are shown in $\ensuremath{\textbf{bold}}$ text

⁻⁻ No Criteria Established / Not Analysed

LOR = Limit of Reporting

NL = Not Limiting

^{# =} Silica Gel Clean Up Method Used to remove false positives



10 CONCLUSION

Geo-Environmental Engineering Pty Ltd (GEE) was commissioned by Romeciti Investment Group, on behalf of Romeciti Eastwood Pty Ltd, to undertake a preliminary and detailed Environmental Site Assessment (ESA) at 1-5 Glen Street & 2-8 Lakeside Road, Eastwood, New South Wales (herein referred to as the 'site').

The investigation was required to support a Development Application (LDA 2015/0666) with Ryde City Council (Council) which relates to the proposed construction of a multistorey, mixed-use (commercial and residential) development and was required to address the requirements of Councils Contaminated Land Policy and the provisions of the *State Environmental Planning Policy No. 55 – Remediation of Land,* by determining the suitability of the site for the proposed land-use and possible constraints on future site development.

The investigation comprised a:

- Review of the environmental and physical setting in which the site lies, including geology, hydrogeology and topography,
- Review of the history of the site using readily available records and historical aerial photographs,
- Detailed site inspection for potential sources of contamination, and
- ♦ A detailed sampling and analysis program to characterise potential contamination in accessible areas across the site.

Based on observations made during the field investigations, the sampling and analysis program conducted at the site, the proposed land-use and with respect to relevant statutory guidelines, GEE conclude that site is currently suitable for the proposed land-use (i.e. mixed commercial and residential development including a basement) and further assessment and/or remediation is not required.

E16017EAS-R01F Page 47 of 50



11 GENERAL LIMITATIONS OF THIS REPORT

This report has been prepared in general accordance with guidelines endorsed by the NSW Office of Environment and Heritage, and the conclusions of this report are based on a limited scope of work described herein, which was considered appropriate based on the same regulatory guidelines.

It is the intention of GEE that the report reflect actual subsurface site conditions, and the contamination status, of the entire site (within the depths investigated). However, regardless of the level of investigation undertaken, there will always be uncertainty when dealing with land contamination. For instance, the sampling points (boreholes and/or testpits) represent a relatively small portion of the site, and ground conditions may vary between sampling locations. The cause of such variation may include, but are not limited to, complex geological settings, the fate and transport characteristics of certain chemicals, the distribution of existing contamination, physical limitations imposed by the location of utilities and other man-made structures, and the limitations of assessment technologies.

Furthermore, the laboratory analytical results contained in this report, upon which conclusions are drawn, relate only to a discrete sample submitted for analysis. Also, not all chemicals have been assessed as part of this investigation. The chemical analytes targeted by this investigation are based on either the site's history, or represent a suite of common soil contaminants.

This report is based on site conditions which existed at the time of the field investigation and subsurface conditions may change over time, either through natural processes, or via ongoing activities on the site. Should additional information become available regarding conditions at the site (such as during construction), including evidence of previously unknown sources of contamination, then additional advice should be sought from GEE.

Finally, this report has been prepared for use by the client who has commissioned the works in accordance with the project brief only. Any reliance assumed by third parties on this report shall be at their own risk. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by GEE.

E16017EAS-R01F Page 48 of 50



12 REFERENCES

- 1. City of Ryde, 2008: Contaminated Land Policy. Effective as of 19th August 2008.
- 2. DUAP (1998): State Environmental Planning Policy 55 Remediation of Land. (Department of Urban Affairs and Planning: Sydney).
- 3. New South Wales Office of Environment and Heritage (NSW OEH), 2011: Guidelines for Consultants Reporting on Contaminated Sites.
- 4. NEPM, 2013: National Environment Protection (Assessment of Site Contamination) Measure 1999 - Schedule B(2) Guideline of Site Characterisation. As amended 16 May 2013.
- 5. Coffey Geotechnics Pty Ltd, 2015: *Geotechnical Investigation Report, 1-5 Glen Street & 2-12 Lakeside Road, Eastwood.* Report prepared for Romeciti Project Management Pty Ltd, 26 June 2015.
- Coffey Geotechnics Pty Ltd, 2015: Stage 2 Geotechnical Investigation Report 1-5
 Glen Street & 2-8 Lakeside Road, Eastwood NSW. Prepared for the Romeciti
 Project Management Pty Ltd. Report reference: GEOTCLOV25403AA-AG Rev 1 1
 December 2015.
- 7. Department of Mineral Resources, 1983: Sydney 1:100,000 *Geological Series Map Sheet 9130 (Edition 1).*
- 8. Department of Environment, Climate Change and Water, 2009: Sydney 1:100 000 Soil Landscape Series Sheet 9130 (fourth edition).
- 9. DEC, 2006: Department of Environment and Conservation NSW (2006): Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd edition).
- 10. Australian Standard AS4482.2 (1999). Australian Standard Guide to the Sampling and Investigation of Potentially Contaminated Soil Part 2: Volatile substances.
- 11. NSW EPA, 1995: Environment Protection Authority NSW, 1995: *Contaminated Sites: Sampling Design Guidelines*, EPA NSW.
- 12. Australian Standard AS4482.1 2005 Guide to the sampling and investigation of potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds.
- 13. Land and Water Biodiversity Committee (2003): *Minimum Construction Requirements for Water Bores in Australia*. Edition 2 Revised September 2003.
- 14. NEPC, 2013: National Environment Protection Council (1999). National Environment Protection (Assessment of Site Contamination) Measure. *Schedule B(1) Guideline on the Investigation Levels for Soil and Groundwater*.

E16017EAS-R01F Page 49 of 50



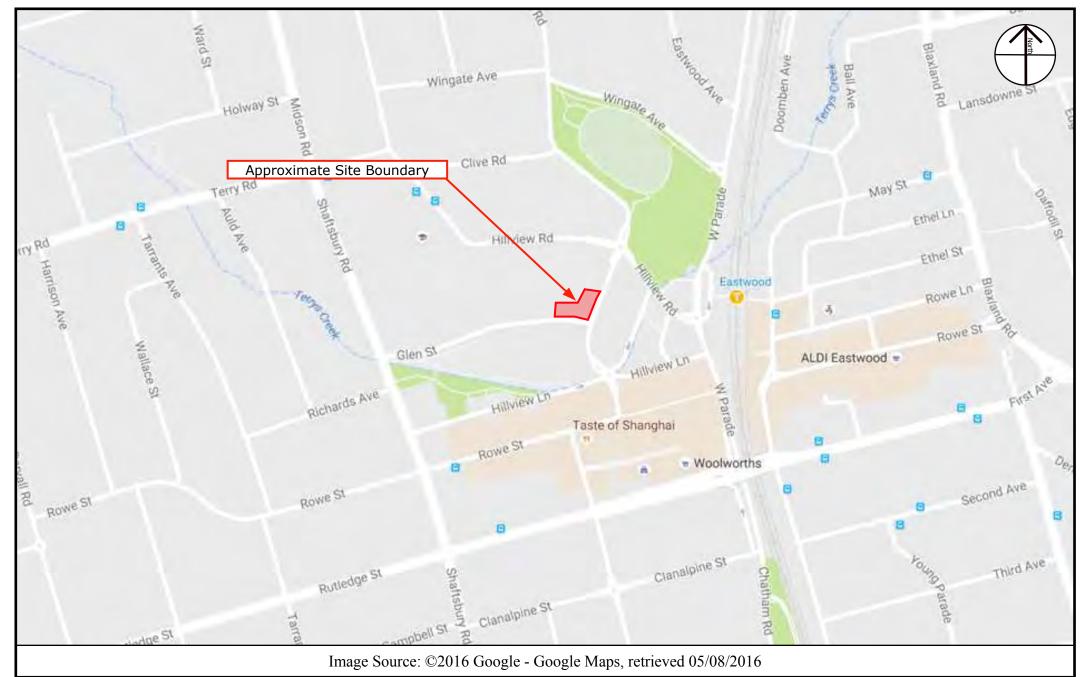
- 15. Friebel & Nadebaum (2011): Technical Report No. 10 Health screening levels for petroleum hydrocarbons in soil and groundwater Part 1: Technical development document. CRC for Contamination Assessment and Remediation of the Environment.
- 16. ANZECC/ARMCANZ, 2000: Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, 2000: *Guidelines for Fresh and Marine Water Quality, National Water Quality Management Strategy*. October 2000.
- 17. Hem JD. 1989. *Study and interpretation of the chemical characteristics of natural water.* 3rd edition. U.S. Geological Survey, Water-Supply Paper 2255, 263 pp.

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FIGURES

1 – Site Location Map 2 – Site Plan



82 BRIDGE STREET LANE COVE NSW 2066 P - 61 (2) 9420 3361 E - info@geoenvironmental.com.au www.geoenvironmental.com.au TITLE: SITE LOCATION MAP: 1-5 Glen St & 2-8 Lakeside Rd,

Glen St & 2-8 Lakeside Rd, Eastwood NSW
 SCALE:
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 8 Nov 2016
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 JOB No.:
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Aerial image: provided by SIXmaps (NSW LPI) - retrived 03/11/2016



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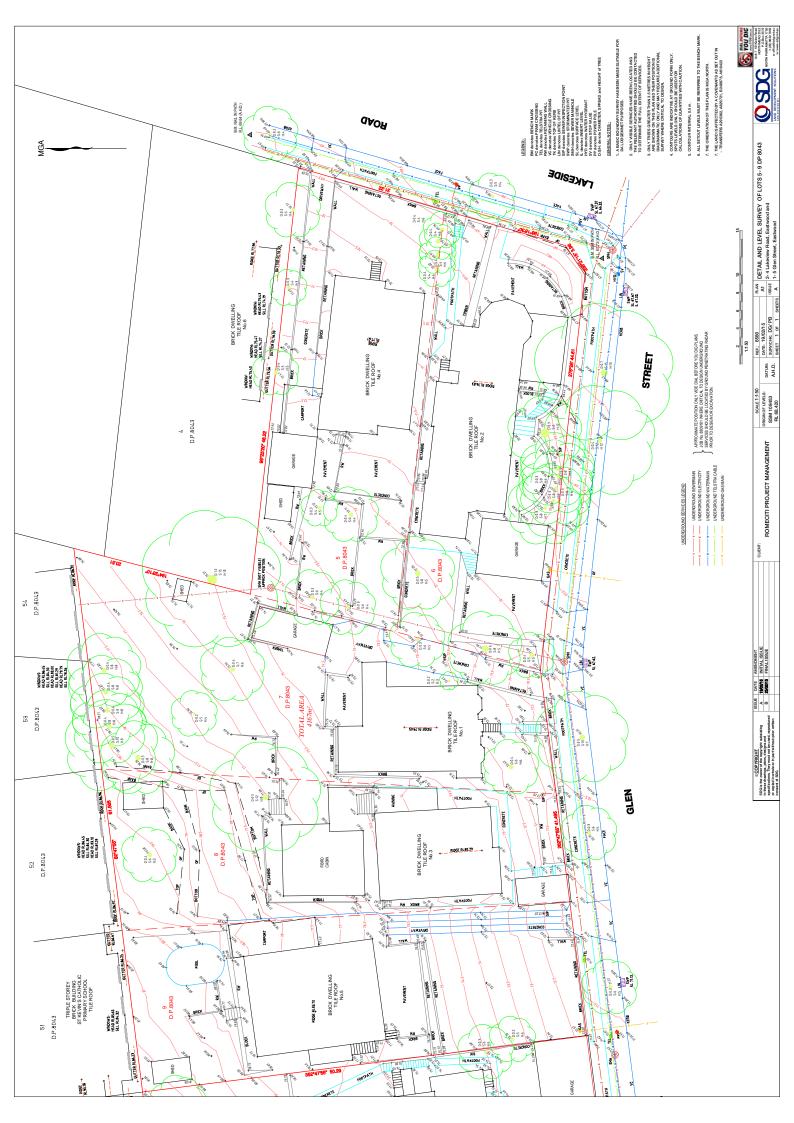
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APPENDIX A

SITE SURVEY & DEVELOPMENT PLANS







EASTWOOD

1-5 GLEN ST & 2-8 LAKESIDE RD, EASTWOOD NSW

DEVELOPMENT APPLICATION

Dickson Rothschild D.R. Design (NSW) Pty. Ltd.

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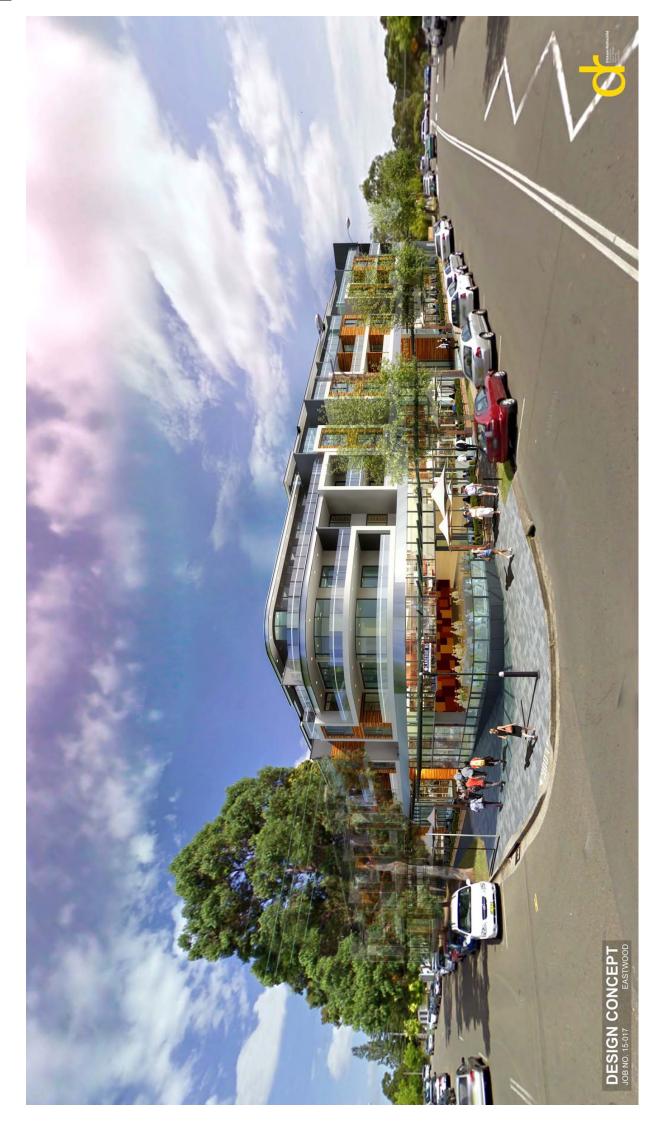
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Milliers Portin. Sydney, NSW 2000 Nominated Architect: Robe
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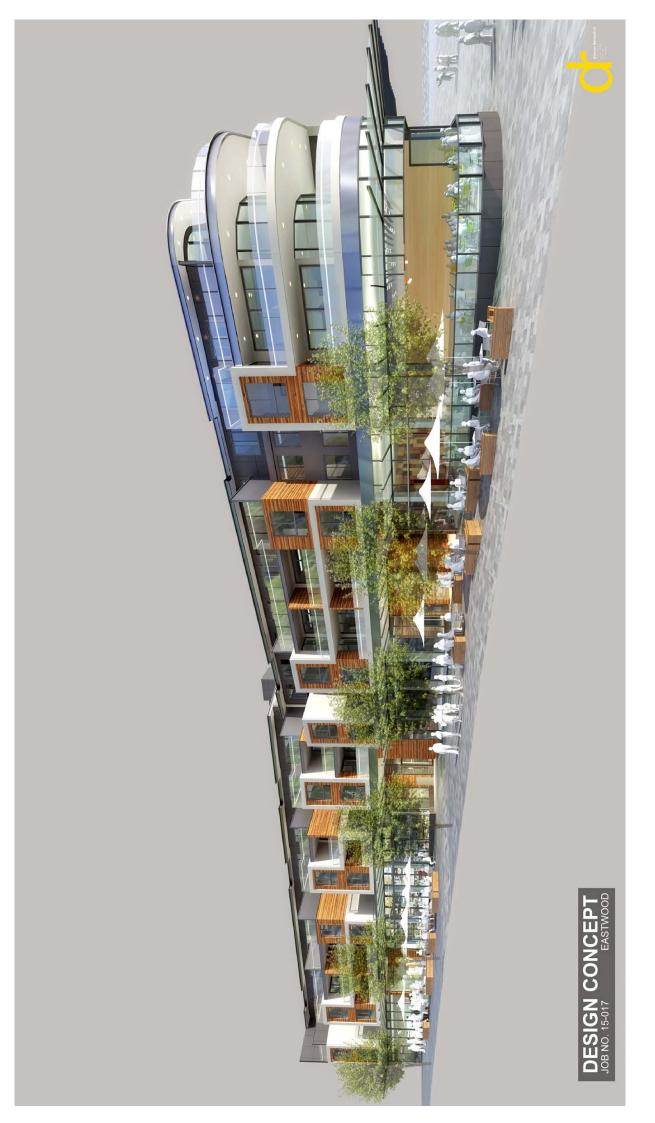
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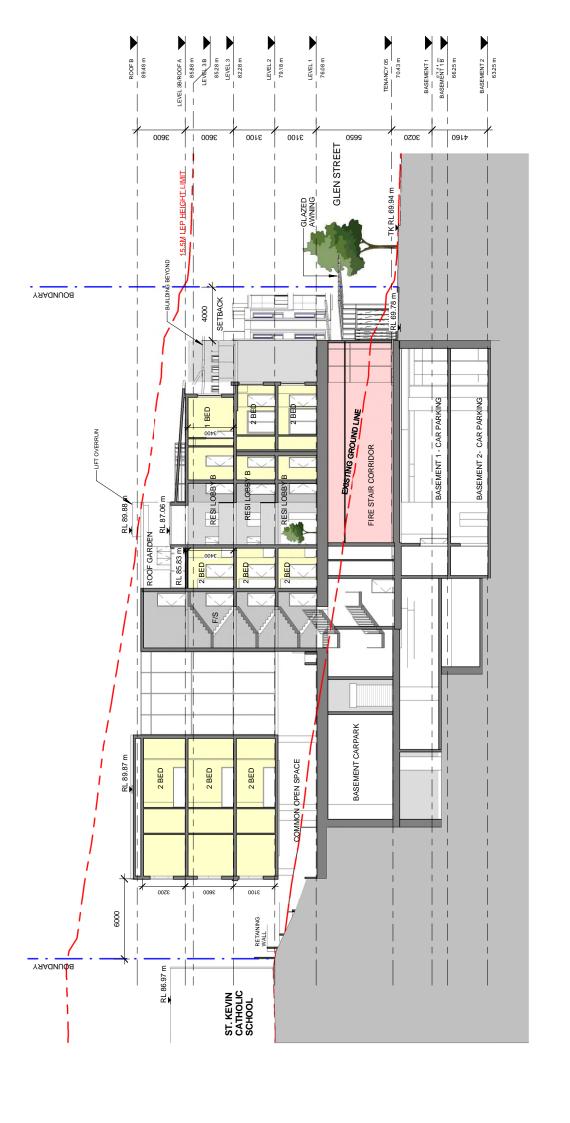
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www.dicksonrothschild.com.au Nominated Architect: Robert Nigel Dickson Registration No: 5364

Phone: +61 2 8540 8720 ndickson@dicksonrothschild.com.au

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APPENDIX B

LOTSEARCH REPORT



Environmental Risk and Planning Report

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Report Buffer: 1000m

Report Date: 28 Oct 2016 19:12:58

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
1	Georeferenced to the site location / premise or part of site
2	Georeferenced with the confidence of the general/approximate area
3	Georeferenced to the road or rail
4	Georeferenced to the road intersection
5	Feature is a buffered point
6	Land adjacent to Georeferenced Site
7	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	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	Land and Property Information	30/10/2016	30/10/2016	Daily	-	-	-
Topographic Data	Land and Property Information	10/04/2015	01/04/2015	As required	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	10/10/2016	30/08/2016	Monthly	0	0	1
Contaminated Land: Records of Notice	Environment Protection Authority	10/10/2016	10/10/2016	Monthly	0	0	0
Former Gasworks	Environment Protection Authority	10/10/2016	10/05/2013	Monthly	0	0	0
National Waste Management Site Database	Geoscience Australia	06/07/2016	15/11/2012	Quarterly	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	20/09/2016	20/09/2016	Monthly	0	0	1
Delicensed POEO Activities still Regulated by the EPA	Environment Protection Authority	20/09/2016	20/09/2016	Monthly	0	0	1
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	20/09/2016	20/09/2016	Monthly	0	4	5
UPSS Environmentally Sensitive Zones	Department of Environment, Climate Change and Water (NSW)	14/04/2015	12/01/2010	As required	0	0	0
UBD Business to Business Directory 1991	Hardie Grant			Not required	0	3	7
UBD Business Directory 1991 Motor Garages/Service Stations	Hardie Grant			Not required	0	0	0
UBD Business Directory 1970	Hardie Grant			Not required	0	4	68
UBD Business Directory 1970 Drycleaners & Motor Garages/Service Stations	Hardie Grant			Not required	0	2	13
UBD Business Directory 1950	Hardie Grant			Not required	0	15	123
UBD Business Directory 1950 Drycleaners & Motor Garages/Service Stations	Hardie Grant			Not required	0	0	13
Points of Interest	Land and Property Information	10/04/2015	01/04/2015	Annually	0	5	48
Tanks (Areas)	Land and Property Information	10/04/2015	01/04/2015	Annually	0	0	0
Tanks (Points)	Land and Property Information	10/04/2015	01/04/2015	Annually	0	0	1
Major Easements	Land and Property Information	11/06/2014	11/06/2014	As required	0	0	13
State Forest	Land and Property Information	11/04/2016	23/01/2015	As required	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment and Heritage	11/04/2016	31/12/2015	Annually	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1	1	1
Groundwater Boreholes	NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corporation; Commonwealth of Australia (Bureau of Meteorology) 2015	21/03/2016	01/12/2015	Annually	0	0	5
Geological Units 1:100,000	NSW Department of Industry, Resources & Energy	20/08/2014		None planned	1	-	3
Geological Structures 1:100,000	NSW Department of Industry, Resources & Energy	20/08/2014		None planned	0	-	1
Naturally Occurring Asbestos Potential	NSW Department of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	0	0	0
Soil Landscapes	NSW Office of Environment and Heritage	12/08/2014		None planned	1	-	3
Standard Local Environmental Plan Acid Sulfate Soils	NSW Planning and Environment	07/10/2016	07/10/2016	As required	0	-	-
Dryland Salinity Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	0	0	0
Mining Subsidence Districts	Land and Property Information	30/10/2016	30/10/2016	As required	0	0	0
SEPP 14 - Coastal Wetlands	NSW Planning and Environment	17/12/2015	24/10/2008	Annually	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	No. Features Onsite	No. Features within 100m	No. Features within Buffer
SEPP 26 - Littoral Rainforest	NSW Planning and Environment	17/12/2015	05/02/1988	Annually	0	0	0
SEPP 71 - Coastal Protection	NSW Planning and Environment	17/12/2015	01/08/2003	Annually	0	0	0
SEPP Major Developments 2005	NSW Planning and Environment	09/03/2013	25/05/2005	Under Review	0	0	0
SEPP Strategic Land Use Areas	NSW Planning and Environment	06/07/2016	28/01/2014	Annually	0	0	0
Local Environmental Plan - Land Zoning	NSW Planning and Environment	03/10/2016	04/08/2016	Quarterly	1	7	67
Local Environmental Plan - Minimum Subdivision Lot Size	NSW Planning and Environment	03/10/2016	04/08/2016	Quarterly	0	-	-
Local Environmental Plan - Height of Building	NSW Planning and Environment	03/10/2016	04/08/2016	Quarterly	1	-	-
Local Environmental Plan - Floor Space Ratio	NSW Planning and Environment	03/10/2016	04/08/2016	Quarterly	1	-	-
Local Environmental Plan - Land Application	NSW Planning and Environment	03/10/2016	04/08/2016	Quarterly	1	-	-
Local Environmental Plan - Land Reservation Acquisition	NSW Planning and Environment	03/10/2016	04/08/2016	Quarterly	0	-	-
State Heritage Items	NSW Planning and Environment	03/10/2016	12/03/2015	Quarterly	0	0	0
Local Heritage Items	NSW Planning and Environment	03/10/2016	04/08/2016	Quarterly	0	4	27
Bushfire Prone Land	NSW Rural Fire Service	18/08/2016	12/08/2016	Quarterly	0	0	2
Native Vegetation of the Sydney Metropolitan Area	NSW Office of Environment and Heritage	08/10/2014	11/10/2013	As required	1	1	4
RAMSAR Wetlands	Commonwealth of Australia Department of the Environment	08/10/2014	24/06/2011	As required	0	0	0
ATLAS of NSW Wildlife	NSW Office of Environment and Heritage	30/10/2016	30/10/2016	Daily	-	-	-

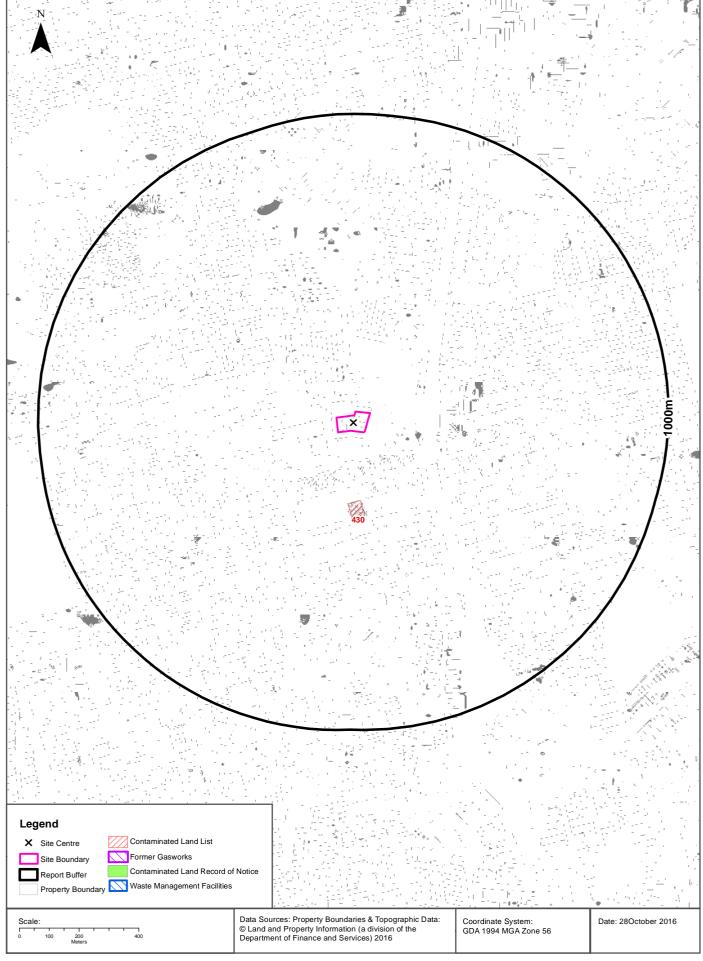




Contaminated Land & Waste Management Facilities







Contaminated Land & Waste Management Facilities

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

List of NSW contaminated sites notified to EPA

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

Map Id	Site	Address	Suburb	Activity	EPA site management class	Status	Dist	Direction	LC
430	Mobil Service Station	5 Trelawney Street	Eastwood	Service Station	Under assessment	Current EPA List	228m	South	1

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).
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

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Contaminated Land: Records of Notice

Record of Notices within the report buffer:

Map Id	Area No	Name	Address	Suburb	Notices	Distance	Direction	LC
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 report buffer:

Map Id	Location	Council	Further Info	Distance	Direction	LC
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

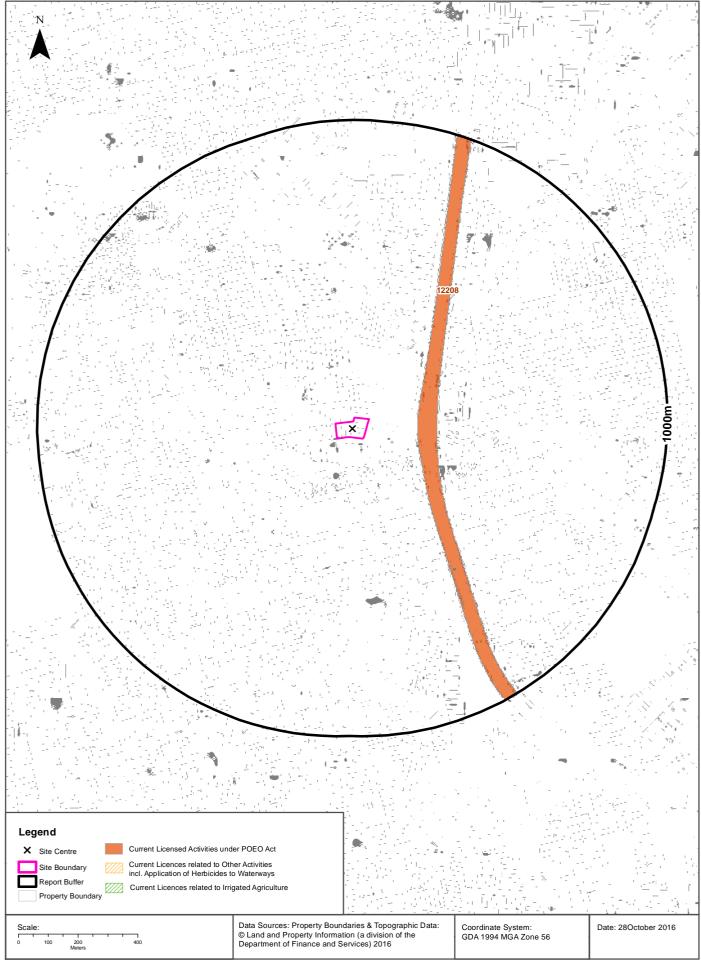
Sites on the National Waste Management Site Database within the report buffer:

Site Id	Owner	Name	Address	Suburb	Postcode	Landfill	Reprocess	Transfer	Distance	Direction	LC
N/A	No records in buffer										

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

Current EPA Licensed Activities





EPA Activities

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Licensed Activities under the POEO Act 1997

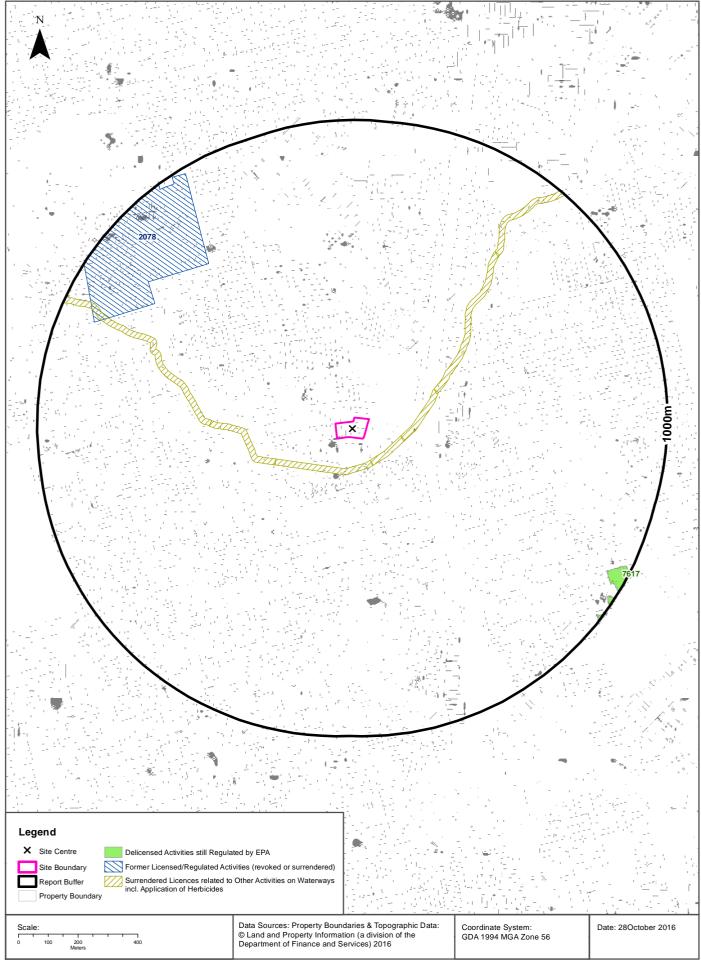
Licensed activities under the Protection of the Environment Operations Act 1997, within the report buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
12208	SYDNEY TRAINS		PO BOX K349, HAYMARKET, NSW 1238		Railway systems activities	3	162m	South

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

Delicensed & Former Licensed EPA Activities





EPA Activities

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Delicensed Activities still regulated by the EPA

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

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
7617	NORTHERN SYDNEY AND CENTRAL COAST AREA HEALTH SERVICE	RYDE HOSPITAL	DENNISTONE RD	EASTWOOD	Hazardous, Industrial or Group A Waste Generation or Storage	1	927m	South East

Delicensed Activities Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

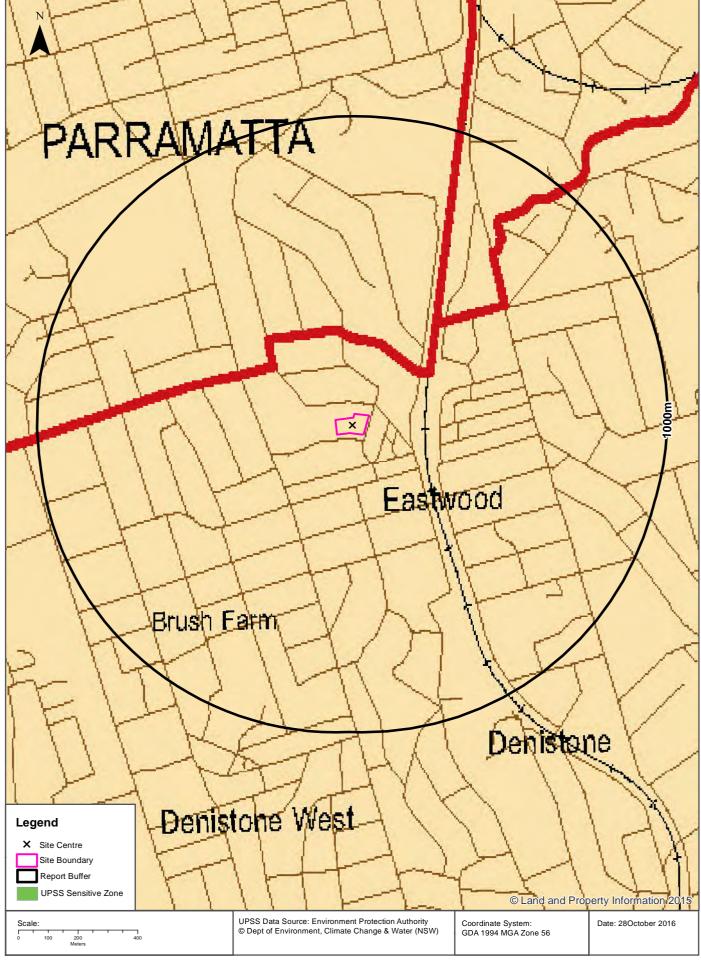
Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the report 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	7	74m	-
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	7	74m	-
5030	CITY OF RYDE	AREAS REQUIRING MOSQUITO TREATMENT WITHIN THE LGA OF RYDE CITY COUNCIL - RYDE NSW 2112	Surrendered		Miscellaneous licensed discharge to waters (at any time) - Pesticide application in areas requiring mosquito treatment	7	74m	-
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	7	74m	-
2078	THE AUSTRAL BRICK CO PTY LTD	MIDSON ROAD, EASTWOOD, NSW 2122	Surrendered	28/09/1999	Crushing, grinding or separating; Mining for minerals; Ceramics production	1	685m	North West

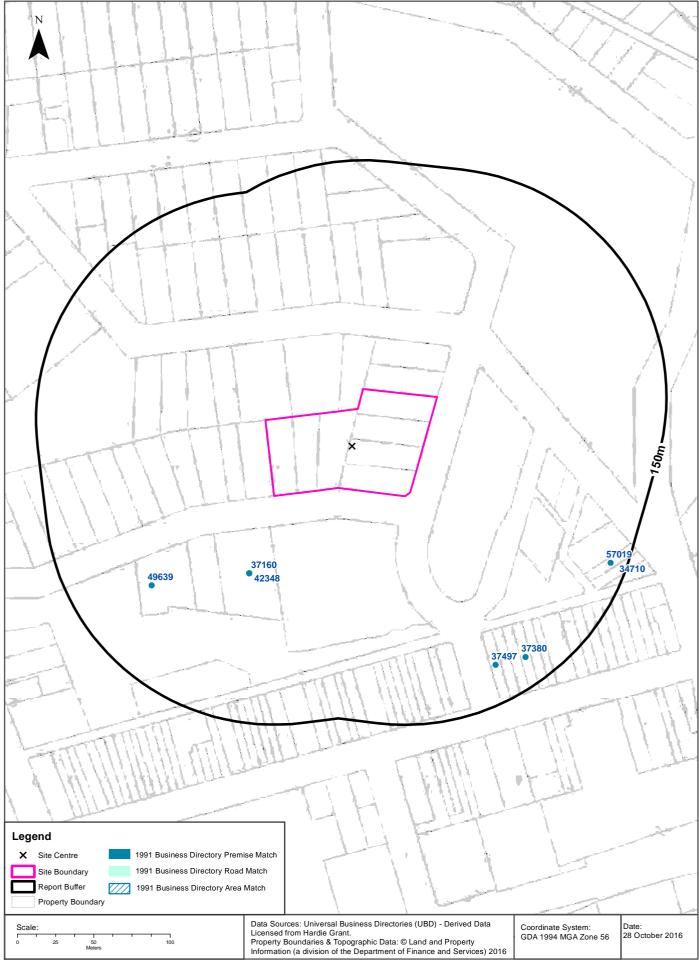
Former Licensed Activities Data Source: Environment Protection Authority © State of New South Wales through the Environment Protection Authority





1991 Historical Business Directory Records





Historical Business Directories

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

1991 Business to Business Directory Records

Records from the 1991 UBD Business to Business Directory within 150m of the site:

Business Activity	Organisation	Address	Ref No.	Location Confidence	Distance	Direction
Electric Tools Mfrs &/or Dists	Hudson Timber & Hardware,	14 Glen St, Eastwood. 2122.	42348	Premise Match	51m	South West
Builders Supplies	Hudson Timber & Hardware.	14 Glen St., Eastwood. 2122.	37160	Premise Match	51m	South West
Insurance Companies Motor	N.R.M.A.	22 Glen St Eastwood 2122	49639	Premise Match	97m	South West
Building Societies	United Permanent Building Society, Eastwood,	161 Rowe St, Eastwood. 2122	37497	Premise Match	123m	South East
Building Societies	St. George Building Society Eastwood	155 Rowe St., Eastwood. 2122	37380	Premise Match	130m	South East
Pest Control	General Pest Services	4 Hillview Rd Eastwood 2122	57019	Premise Match	137m	South East
Auctioneers Real Estate	Hearn, Laurie Real Estate	2 Hillview Rd, Eastwood, 2122	34710	Premise Match	150m	South East

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

1991 Business Directory Motor Garages & Service Stations

Motor Garages & Service Stations from the 1991 UBD Business Directory within 1km of the site:

Business Activity	Organisation	Address	Ref No.	Location Confidence	Distance	Direction
N/A	No records in buffer					

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

1970 Historical Business Directory Records







Historical Business Directories

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

1970 Business Directory Records

Records from the 1970 UBD Business Directory within 150m of the site:

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MOTOR SERVICE STATIONS- PETROL,OIL,Etc. (M716)	Eastwood Plaza Auto Port, Gien St. EASTWOOD	341022	Road Match	0m+	South West
MOTOR GARAGES & ENGINEERS (M6S6)	Walter's Garage & Service Station, Progress Ave. EASTWOOD	338839	Road Match	62m+	South East
MEDICAL PRACTITIONERS (M216)	Anderson,C. H.,10a Hlilvlew Rd.,Eastwood	326056	Premise Match	84m	East
TYRE DEALERS,RETREADERS & VULCANIZERS (T773)	St. Marys Eastwood Tyre Service.,Hillview Lane.,Eastwood	371754	Road Match	93m+	South
CLUBS & SPORTING BODIES (C487)	Eastwood Enterprises Pty. Ltd., 6a Hillview St, Eastwood	284219	Premise Match	115m	East
REAL ESTATE AGENTS/VALUERS(R205)	Hooker,L. J. Ltd.,6 Hillview Rd.EASTWOOD	355509	Premise Match	115m	East
ACCOUNTANTS & AUDITORS (A040)	Martin, DWSt Co., 6 Hillview Rd., Eastwood	259043	Premise Match	115m	East
CARPET & FLOOR COVERING RETAILERS &/OR SPECIALISTS(C135)	Smith's (KJ.) Furnishings Pty. Ltd., 6 Hillview St., Eastwood & Branch	277825	Premise Match	115m	East
BUTCHERS-RETAIL (B860)	Greenfield's Butchery, 167 Rowe St., Eastwood	273708	Premise Match	121m	South
DRESS FABRIC RETAILERS (D590)	Johnson's (Eastwood) Pty.Ltd.,169-171 Rowe St.,Eastwood	290898	Premise Match	122m	South
DRAPERS-RETAIL (D540)	Johnsons (Eastwood) Pty.Ltd.,169-171 Rowe St.,Estwd	290440	Premise Match	122m	South
STATIONERS-RETAIL (S516)	Eastwood Newsagency,173 Rowe St.,Eastwood	364523	Premise Match	124m	South
TOY DEALERS-RETAIL (T535)	Eastwood Newsagency,173 Rowe St.,Eastwood	370043	Premise Match	124m	South
FOOTWEAR RETAILERS (F495)	Alberta Shoes,177,Rowe St.,Eastwood	305441	Premise Match	126m	South
CHEMISTS-PHARMACEUTICAL (C286)	Cornell, NJ., 179 Rowe Sst., Eastwood	280224	Premise Match	128m	South
FLORISTS-RETAIL (F335)	Eastwood Nurseries, West Pde. EASTWOOD	304299	Road Match	128m+	South East
NURSERYMEN (N190)	Homer's Nursery, West Pde., Eastwood	344502	Road Match	128m+	South East
GARDEN SUPPLIES-RETAIL (G060)	Horner's Nursery, West Pde., Eastwood	310308	Road Match	128m+	South East
PLYWOOD MFRS./MERCHANTS (P622)	McKenzie,H. Ltd.,West Parade,Eastwood	350941	Road Match	128m+	South East
HARDWARE MERCHANTS-WHOLESALE (H260)	McKenzie,H. Ltd.,West Pde.,Eastwood	315511	Road Match	128m+	South East
HARDWARE DEALERS/IRONMONGERS (H230)	McKenzie,H. Ltd.,West Pde.EASTWOOD	315186	Road Match	128m+	South East
TYRE DEALERS,RETREADERS & VULCANIZERS (T773)	Tyre Repairs Pty.Ltd.,West Pde.,Eastwood	371764	Road Match	128m+	South East
FRUITERERS/GREENGROCERS (F640)	Perry's Eastwood Fruitery,181 Rowe St.,Eastwood	307729	Premise Match	130m	South
FOOTWEAR RETAILERS (F495)	McClean's Shoes,155 Rowe St.,Eastwood	305652	Premise Match	130m	South East
FRUITERERS/GREENGROCERS (F640)	Mick's,155 Rowe St.,Eastwood	307560	Premise Match	130m	South East
MERCERS-MEN'S & BOYS' OUTFITTERS(M232)	Arcade Toggery,183 Rowe St.,Eastwood	328727	Premise Match	133m	South
FANCY GOODS RETAILERS (F055)	Artisque Gifts.,183 Rowe St., Eastwood	302095	Premise Match	133m	South
GIFT SHOPS (G180)	Artistique Gifts.,183 Rowe St.,Eastwood	310677	Premise Match	133m	South
FOOTWEAR RETAILERS (F495)	Bettina Shoe Salon,2 Eastwood Arc.,Eastwood	305460	Premise Match	133m	South
SPORTS GOODS RETAILERS (S443)	Cavanough's Sports-Hobbles,183 Rowe St,Eastwood	363373	Premise Match	133m	South
DRESS FABRIC RETAILERS (D590)	Gall's Wool & Fabrics,183 Rowe St.,Eastwood	290875	Premise Match	133m	South
BOOT & SHOE REPAIRERS (B580)	Joe's Shoe Repairs, 183 Rowe St., Eastwood	268941	Premise Match	133m	South

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
ANIMAL & BIRD FOOD SUPPLIES (A375)	Kerslake, PE& PJ, 183 Rowe St, Eastwood	261541	Premise Match	133m	South
BEAUTY SALONS &/OR LADIES' HAIRDRESSERS (B260)	Martin's Beauty Salon, 183 Rowe St., Eastwood	266312	Premise Match	133m	South
BABY & CHILDREN'S WEAR-RETAIL (B005)	Mother Goose, 183 Rowe St., Eastwood	264219	Premise Match	133m	South
FISH MERCHANTS-RETAIL (F245)	Quality Ocean Foods,183 Rowe St.,Eastwood	303690	Premise Match	133m	South
CAFES, COFFEE LOUNGES, Etc. (C030)	Spot Coffee Lounge (The), 183 Rowe St., Eastwood	276098	Premise Match	133m	South
DELICATESSENS (D080)	Taylor,H.fic P.,183 Rowe St.,Eastwood	288022	Premise Match	133m	South
BUTCHERS-RETAIL (B860)	Toohey, PJ., 183 Rowe St., Eastwood	274696	Premise Match	133m	South
CAKE SHOPS & PASTRYCOOKS (C045)	Waratah Cake Shop, 183 Rowe St., Eastwood	276968	Premise Match	133m	South
FOOTWEAR RETAILERS (F495)	Fox's Shoe Store (Registered),151 Rowe St.,Eastwood	305546	Premise Match	134m	South East
CYCLE DEALERS & ACCESSORIES (C798)	Cavanough,W.J.,189 Rowe St.,Eastwood	286779	Premise Match	137m	South
JEWELLERS/WATCHMAKERS-RETAIL (J060)	Hardwick,A.,4 Hiilview Rd.,Eastwood	321091	Premise Match	137m	South East
WASHING MACHINE SALES/SERVICE (W065)	Reid's Electrical Stores,212 Taren Point Rd.,Eastwood	373134	Premise Match	137m	South East
ELECTRICAL SUPPLIES/ APPLIANCES RETAILERS (E325)	Reid's Electrical Stores,4 Hilivlew Rd.,Eastwood & Branches	295870	Premise Match	137m	South East
RADIO &/OR TELEVISION SALES & SERVICEMEN (R090)	Reid's Electrical Stores,4 Hillview Rd. & BranchesEASTWOOD	354483	Premise Match	137m	South East
LAWN MOWER SALES/SERVICE (L310)	Reid's Electrical Stores,4 Hillview Rd.,Eastwood &Branches	322816	Premise Match	137m	South East
REFRIGERATOR DEALERS &/OR SERVICEMEN (R247)	Reid's Electrical Stores,4 Hillvlew Rd.,Eastwood & Branches	356553	Premise Match	137m	South East
DRESS SHOPS (D595)	Gow,Barbara,193 Rowe St.,Eastwood	291296	Premise Match	142m	South
DRY CLEANERS,PRESSERS/DYERS (D710)	Musgrove's Dry Cleaning Service,195 Rowe St.,Eastwood	292412	Premise Match	142m	South
HANDBAG/GLOVE SPECIALISTS (H160)	Erber's Bag Store,199 Rowe St.,Eastwood	314756	Premise Match	143m	South
TRAVEL GOODS RETAILERS (T655)	Erber's Bag Store,199 Rowe St.,Eastwood	371253	Premise Match	143m	South
DENTISTS (D140)	Payne,M.G.,197,Rowe St.,Eastwood	288923	Premise Match	143m	South
SOLICITORS (S413)	Byles,M. B. & Co.,2a Hillview Rd.,Eastwood	362337	Premise Match	143m	South East
ENGINEERS-CIVIL (E530)	Frost,S.J.Pty.Ltd.,2a Hfllvlew St.,Eastwood	297557	Premise Match	143m	South East
BUTCHERS-RETAIL (B860)	Mulligans of Eastwood, 201 Rowe StEastwood	274163	Premise Match	144m	South
FLORISTS-RETAIL (F335)	Pattinson's Florist,203 Rowe St.EASTWOOD	304379	Premise Match	144m	South
CAKE SHOPS & PASTRYCOOKS (C045)	Shepherd's, 203 Rowe St., Eastwood	276878	Premise Match	144m	South
DRESS SHOPS (D595)	Fox,Thelma-Esmond Salon,205 to 209 Rowe St.,Eastwood	291257	Premise Match	145m	South
FOOTWEAR RETAILERS (F495)	Maxine Boutique,209 Rowe St.,Eastwood	305647	Premise Match	145m	South
HAIRDRESSERS (GENT.'S) (H070)	Webb,J. T.,211 Rowe St.,Eastwood	314545	Premise Match	147m	South
CAKE SHOPS & PASTRYCOOKS (C045)	Emery, Mand L., 139 Rowe St., Eastwood	276498	Premise Match	148m	South East
JEWELLERS/WATCHMAKERS-RETAIL (J060)	Becker, J. B. & M. A., 213 Rowe St., Eastwood	320946	Premise Match	149m	South
` ,	Eastwood Travel Centre,2 HUIview Rd.,Eastwood	371049	Premise Match	150m	South East
AUCTIONEERS-REAL ESTATE (A625)	Somerville & Co., 2 Hillview Rd., Eastwood	263838	Premise Match	150m	South East
REAL ESTATE AGENTS/VALUERS(R205)	Somerville & Co.,2 Hillview Rd.EASTWOOD	356035	Premise Match	150m	South East
TRAVEL AGENCIES/BOOKING OFFICES (T645)	Somerville & Co.,2 HUIview Rd.,Eastwood	371154	Premise Match	150m	South East
AUCTIONEERS-GENERAL (A620)	Somerville St Co., 2 Hillview Rd., Eastwood.	263704	Premise Match	150m	South East

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1970 Business Directory Drycleaners & Service Stations

Drycleaners, Motor Garages & Service Stations from the 1970 UBD Business Directory within 1km of the site:

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MOTOR SERVICE STATIONS- PETROL,OIL,Etc. (M716)	Eastwood Plaza Auto Port, Gien St. EASTWOOD	341022	Road Match	0m+	South West
MOTOR GARAGES & ENGINEERS (M6S6)	Walter's Garage & Service Station,Progress Ave.EASTWOOD	338839	Road Match	62m+	South East
DRY CLEANERS,PRESSERS/DYERS (D710)	Musgrove's Dry Cleaning Service,195 Rowe St.,Eastwood	292412	Building Match	142m	South
DRY CLEANERS,PRESSERS/DYERS (D710)	Carousel,23 Railway Pde.,Eastwood	292235	Building Match	277m	East
DRY CLEANERS,PRESSERS/DYERS (D710)	Carousel,23 Railway Pde.,Eastwood	292236	Building Match	277m	East
MOTOR GARAGES & ENGINEERS (M6S6)	Lucky Strike Service Station (The),East Pde. & Rowe St.EASTWOOD	338175	Road Intersection	279m	East
MOTOR SERVICE STATIONS- PETROL,OIL,Etc. (M716)	Esso Service Centre,Cnr. Rutledge & Trelawney Sts.EASTWOOD	341040	Road Intersection	283m	South
MOTOR GARAGES & ENGINEERS (M6S6)	Eastwood Steering & Motor Engineering,7 West Pde.EASTWOOD	337715	Building Match	325m	South East
MOTOR GARAGES & ENGINEERS (M6S6)	Eastwood's Auto Service,10-20 East Pde.EASTWOOD	337717	Building Match	329m	South East
DRY CLEANING MACHINERY & SUPPLIES-MFRS.&/OR DISTS.(D720)	Pearson,Neil & Co.Pty.Ltd.,10a First Ave.,Eastwood	292601	Building Match	411m	East
MOTOR GARAGES & ENGINEERS (M6S6)	Spring's Motor Service Co.,603 Blaxland Rd.EASTWOOD	338651	Building Match	588m	East
MOTOR GARAGES & ENGINEERS (M6S6)	Wentworth Motors,Cnr. Balaclava & Blaxland Rds.,EASTWOOD	338857	Road Intersection	589m	North East
MOTOR GARAGES & ENGINEERS (M6S6)	BP Lovell Service Station,2 Lovell Rd.EASTWOOD	337381	Building Match	893m	East

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

1950 Historical Business Directory Records







Historical Business Directories

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

1950 Business Directory Records

Records from the 1950 UBD Business Directory within 150m of the site:

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
AIR SERVICES OPERATORS	Australian National Airways, Hillview Rd., Eastwood	1577	Road Match	32m+	North
SOLICITORS	Byles, M. B. and Co., Hillview Rd., Eastwood	103465	Road Match	32m+	North
REAL ESTATE AGENTS	Paul and Gordon, Hillview Rd, Eastwood	98666	Road Match	32m+	North
PRODUCE MERCHANTS-GRAIN & SEED-RETAIL	Pulsford, A., Hillview Rd., Eastwood	95671	Road Match	32m+	North
BOOT & SHOE REPAIRERS	Swales, J., Hillview Rd., Eastwood	10685	Road Match	32m+	North
ARCHITECTS	Miller, J., 17 Glen St., Eastwood	2290	Premise Match	86m	West
MOTOR PANEL BEATERS	Chapman, E. D., Hillview Lane, Eastwood	85215	Road Match	93m+	South
WELDERS-ELECTRIC &/OR OXY	Crouch's Gate and Fence Works, Hillview Lane, Eastwood	112733	Road Match	93m+	South
FENCE & GATE MANUFACTURERS	Crouch's Gate and Fence Works, Hillview Lane, Eastwood	43613	Road Match	93m+	South
ICE MANUFACTURERS & VENDORS	Eastwood Ice Works, Hillview Lane, Eastwood	63837	Road Match	93m+	South
ART & ORNAMENTAL METAL WORKERS	Manufacture Welders, Hillview Lane, Eastwood	2625	Road Match	93m+	South
WELDERS-ELECTRIC &/OR OXY	Manufacture Welders, Hillview Lane, Eastwood	112925	Road Match	93m+	South
BAKERS-BREAD	Meredith and Son, Hillview Lane, Eastwood	5370	Road Match	93m+	South
MANUFACTURERS' AGENTS	Campbell, J. and Co., 8 Hillview Rd., Eastwood	70935	Premise Match	97m	East
CABINETMAKERS	Johnstone, A. S.', 13 Hillview Rd., Eastwood	14913	Premise Match	97m	North West
DENTISTS	Gabriel, R. L., 6 Hillview Rd.; Eastwood	31891	Premise Match	115m	East
DENTISTS	Gabriel, R. L., 6 Hillview Rd.; Eastwood	31893	Premise Match	115m	East
DENTISTS	Gabriel, R. L., 6 Hillview Rd.; Eastwood	31892	Premise Match	115m	East
STOCK & STATION AGENTS	Paul and Gordon, 6 Hillview Rd., Eastwood	105614	Premise Match	115m	East
BUTCHERS-RETAIL	Marfan R. and R 167 Rowe St., Fastwood	13903	Premise Match	121m	South
DELICATESSENS & SMALLGOODS DEALERS	Irelands Provision Store, 165 Rowe St., Eastwood	30676	Premise Match	121m	South East
PHOTOGRAPHERS-PORTRAIT	Winner Studios. 163 Rowe St., Eastwood	92043	Premise Match	121m	South East
LINGERIE & HOSIERY SPECIALISTS	Johnson's (Eastwood), 169-171 Rowe St., Eastwood	69401	Premise Match	122m	South
FROCK & COAT SALONS	Johnson's (Eastwood), 169-171 Rowe St., Eastwood	48613	Premise Match	122m	South
DRAPERS-RETAIL	Johnsons (Eastwood), 169-171 Rowe St., Eastwood	33762	Premise Match	122m	South
DRESS FABRIC RETAILERS	Johnsons (Eastwood), 169-171 Rowe St., Eastwood	34230	Premise Match	122m	South
GROCERS-RETAIL	Moran and Cato (N.S.W.) Pty. Ltd. 161 Rowe St., Eastwood	58476	Premise Match	123m	South East
NEWSAGENTS	Clark, W. A. F., 173 Rowe St., Eastwood	87904	Premise Match	124m	South
TOY DEALERS-RETAIL	Jacksons Newsagency, 173 Rowe St., Eastwood	109470	Premise Match	124m	South
CHINA, CROCKERY, GLASSWARE, CRYSTAL, EARTHENWARE & CUTLERY DEALERS	Jacksons Newsagency, 173 Rowe St., Eastwood		Premise Match	124m	South
BOOKSELLERS &/OR STATIONERS	Jacksons Newsagency, 173 Rowe St., Eastwood	9556	Premise Match	124m	South

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
BEAUTY SALONS &/OR LADIES' HAIRDRESSERS	Cordony Bros. 175 Rowe St., Eastwood	7014	Premise Match	125m	South
FRUITERERS & GREENGROCERS	Schofields, 159 Rowe St., Eastwood	51159	Premise Match	125m	South East
ELECTRICAL SUPPLIES &. APPLIANCES RETAILERS	Tanner's Produce Pty. Ltd., 4a Hillview Rd., Eastwood	38902	Premise Match	126m	East
VACUUM CLEANER SALES & SERVICE	Tanner's Produce Pty. Ltd., 4a Hillview Rd., Eastwood	111482	Premise Match	126m	East
WASHING MACHINE SALES & SERVICE	Tanner's Produce Pty. Ltd., 4a Hillview Rd., Eastwood	112393	Premise Match	126m	East
PRODUCE MERCHANTS-GRAIN & SEED-RETAIL	Tanner's Produce Pty. Ltd., 4a Hillview Rd., Eastwood	95724	Premise Match	126m	East
REFRIGERATOR SALES &/OR SERVICE	Tanners Produce Pty. Ltd. 4a Hillview Rd., Eastwood	99380	Premise Match	126m	East
BABY & CHILDREN'S WEAR-RETAIL	John and Mary, 177 Rowe St., Eastwood	4602	Premise Match	126m	South
DRAPERS-RETAIL	Haslam's Pty. Ltd., 157 Rowe St., Eastwood	33708	Premise Match	127m	South East
FURNISHINGS-SOFT-RETAILERS	Haslam's Pty. Ltd., 157 Rowe St., Eastwood	52322	Premise Match	127m	South East
MANCHESTER SPECIALISTS & RETAILERS	Haslam's Pty. Ltd., 157 Rowe St., Eastwood	70314	Premise Match	127m	South East
MERCERS & GENT'S OUTFITTERS	Haslams Pty. Ltd., 157 Rowe St., Eastwood	74421	Premise Match	127m	South East
MOTOR TRIMMERS	Battle, E. E., West Pde., Eastwood	86999	Road Match	128m+	South East
UPHOLSTERERS	Battle, E. E., West Pde., Eastwood	111135	Road Match	128m+	South East
FURNITURE-HOUSEHOLD-RETAILERS	Battle, E. E., West Pde., Eastwood	53374	Road Match	128m+	South East
GARDEN SUPPLIES-RETAIL	Eastwood Nursery, West Pde., Eastwood	53968	Road Match	128m+	South East
NURSERYMEN	Eastwood Nursery, West Pde., Eastwood	89079	Road Match	128m+	South East
DENTAL LABORATORIES & TECHNICIANS	Hays, S. R., Summerhayes Bldgs., West Pde., Eastwood	31520	Road Match	128m+	South East
MOTOR DRIVING TEACHERS	Jones, Len, West Pde., Eastwood	83046	Road Match	128m+	South East
LIME & CEMENT MERCHANTS	Lee, F., West Pde., Eastwood	69081	Road Match	128m+	South East
BUILDERS' SUPPLIERS	Lee, F., West Pde., Eastwood	11819	Road Match	128m+	South East
TIMBER MERCHANTS	McKenzie, H. Ltd. West Pde., Eastwood	78251	Road Match	128m+	South East
MOTOR GARAGES &/OR ENGINEERS	Morrison, Nell Coy. Pty. Ltd., West Pde., Eastwood	84107	Road Match	128m+	South East
NEWSPAPERS & PERIODICALS	Northern District Times, West Pde., Eastwood	88780	Road Match	128m+	South East
BUILDERS' SUPPLIERS	Northern Lime (Fred Lee), West Pde., Eastwood	11858	Road Match	128m+	South East
LIME & CEMENT MERCHANTS	Northern Lime (Fred Lee), West Pde., Eastwood.	69094	Road Match	128m+	South East
GRAVEL, SAND & SOIL SUPPLIES	Northern Lime and Cement Supply, West Pde., Eastwood	55182	Road Match	128m+	South East
PHOTOGRAPERS-COMMERCIAL	Thomas, Thomas, West Pde., Eastwood	91688	Road Match	128m+	South East
PHOTOGRAPHERS-PORTRAIT	Thomas, Thomas, West Pde., Eastwood	92027	Road Match	128m+	South East
CAKE SHOPS & PASTRYCOOKS	Bowyer, Mrs., 181 Rowe St., Eastwood	16473	Premise Match	130m	South
FOOTWEAR-RETAILERS	Glass, D., 155 Rowe St., Eastwood	47289	Premise Match	130m	South East
FOOTWEAR-RETAILERS	McClean's Shoes, 155 Rowe St., Eastwood	47407	Premise Match	130m	South East
BUTCHERS-RETAIL	Bennett, F. R., 153a Rowe St., Eastwood	13143	Premise Match	132m	South East
CAKE SHOPS & PASTRYCOOKS	Shepherd's, 153 Rowe St., Eastwood	17242	Premise Match	132m	South East
FLORISTS-RETAIL	Grayston Florist, 183-185 Rowe St., Eastwood	45931	Premise Match	133m	South
GIFT SHOPS	Grayston Florist, 183-185 Rowe St., Eastwood	54356	Premise Match	133m	South
FUNERAL DIRECTORS	Wood Coffill Ltd. 183 Rowe St., Eastwood	52066	Premise Match	133m	South
MEDICAL PRACTITIONERS	Borbidge, E. V., 2 Clive Rd., Eastwood	72482	Premise Match	134m	North
MEDICAL PRACTITIONERS	Gulnan, J, A., 2 Clive Rd., Eastwood	73046	Premise Match	134m	North

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
FOOTWEAR-RETAILERS	Fox's Shoe Store (Registered), 151 Rowe St., Eastwood	47267	Premise Match	134m	South East
FURNISHINGS-SOFT-RETAILERS	National Furniture Co. Eastwood Pty. Ltd., 149-151 Rowe St., Eastwood	52356	Premise Match	134m	South East
CHINA, CROCKERY, GLASSWARE, CRYSTAL, EARTHENWARE & CUTLERY DEALERS	National Furniture Co. Eastwood Pty. Ltd., 149-151 Rowe St., Eastwood	22434	Premise Match	134m	South East
FURNITURE-HOUSEHOLD-RETAILERS	National Furniture Co. Pty. Ltd., Head Office, 320 Church St., Parramatta; Branch 165 and 305 Forest Rd., Hurstville; 193 Liverpool Rd., Ashfield; 149 Rowe St. Eastwood	53613	Premise Match	136m	South East
WINE & SPIRIT MERCHANTS-RETAIL	Cavanough, J. W., 187-189 Rowe St., Eastwood	113485	Premise Match	137m	South
TOY DEALERS-RETAIL	Cavanough, J., 189 Rowe St., Eastwood	109377	Premise Match	137m	South
SPORTS GOODS RETAILERS	Cavanough, J., 189 Rowe St., Eastwood	104402	Premise Match	137m	South
CYCLE DEALERS & ACCESSORIES	Cavanough, J., 189 Rowe St., Eastwood	29857	Premise Match	137m	South
WINE & SPIRIT MERCHANTS-RETAIL	Eastwood Wine and Spirit Merchants, 187 Rowe St.,	113499	Premise Match	137m	South
REFRIGERATOR MFRSDOMESTIC- ELECTRIC	Tanners Pty. Ltd., 4 Hillview Rd., Eastwood	99077	Premise Match	137m	South East
RADIO SALES &/OR SERVICEMEN	Tanners Pty. Ltd., 4 Hillview Rd., Eastwood	97674	Premise Match	137m	South East
ELECTRIC RANGE & STOVE RETAILERS	Tanners Pty. Ltd., 4 Hillview Rd., Eastwood	37149	Premise Match	137m	South East
DENTISTS	Bain, R. G., 147 Rowe St., Eastwood	31666	Premise Match	138m	South East
ELOCUTION TEACHERS	Field, Miss Effie, 147 Rowe St., Eastwood	39394	Premise Match	138m	South East
DENTISTS	McDonald, R, A., 147 Rowe St., Eastwood	32100	Premise Match	138m	South East
FOOTWEAR-RETAILERS	Ashton's Shoes, 191 Rowe St., Eastwood	47134	Premise Match	140m	South
GROCERIES, SMALLGOODS, FRESHLY- CUT SANDWICHES	Boccalatte, M., 145 Rowe St., Eastwood	55378	Premise Match	140m	South East
DELICATESSENS & SMALLGOODS DEALERS	Central Provision Store, 145 Rowe St., Eastwood	30317	Premise Match	140m	South East
MERCERS & GENT'S OUTFITTERS	Chevrons' Mercers Pty. Ltd., 145 Rowe St., Eastwood	74295	Premise Match	140m	South East
DRAPERS-RETAIL	Chevrons', Mercers Pty. Ltd., 145 Rowe St., Eastwood	33565	Premise Match	140m	South East
FROCK & COAT SALONS	"Lins" Frock Salon, 193 Rowe St., Eastwood	48173	Premise Match	142m	South
LINGERIE & HOSIERY SPECIALISTS	"Lins" Frock Salon, 193 Rowe St., Eastwood	69178	Premise Match	142m	South
JEWELLERS-RETAIL &/OR WATCHMAKERS	Colonial Jewellery Service, 195a Rowe St., Eastwood	66037	Premise Match	142m	South
MILLINERY-RETAIL	Engleheart, Mrs., 195 Rowe St., Eastwood	78702	Premise Match	142m	South
DENTISTS	Bevan, Henry, 197 Rowe St., Eastwood	31697	Premise Match	143m	South
FROCK & COAT SALONS	Suzy's, 199 Rowe St., Eastwood	48967	Premise Match	143m	South
BUTCHERS-RETAIL	Glover, H., 201 Rowe St., Eastwood	13555	Premise Match	144m	South
FROCK & COAT SALONS	Toni Lee Frock Salon, 203 Rowe St., Eastwood	48984	Premise Match	144m	South
OUTFITTERS-LADIES' & CHILDREN'S	Toni-Lee, 203 Rowe St., Eastwood	90498	Premise Match	144m	South
LINEN GOODS MANUFACTURERS	Lancaster, J. E. C., 205 Rowe St., Eastwood	69142	Premise Match	145m	South
TOY DEALERS-RETAIL	Sanderson, S., 205 Rowe St., Eastwood	109584	Premise Match	145m	South
HARDWARE DEALERS &/OR IRONMONGERS	Sanderson's, 205 Rowe St., Eastwood	61361	Premise Match	145m	South
JEWELLERS-RETAIL &/OR WATCHMAKERS	Sandersons, 205 Rowe St., Eastwood	66357	Premise Match	145m	South
KITCHENWARE RETAILERS	Sandersons, 205 Rowe St., Eastwood	67062	Premise Match	145m	South
CHINA, CROCKERY, GLASSWARE, CRYSTAL, EARTHENWARE & CUTLERY DEALERS	Sandersons, 205 Rowe St., Eastwood	22462	Premise Match	145m	South
ELECTRICAL SUPPLIES &. APPLIANCES RETAILERS	Sandersons, 205 Rowe St., Eastwood	38844	Premise Match	145m	South

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
CHINA, CROCKERY, GLASSWARE, CRYSTAL, EARTHENWARE & CUTLERY DEALERS	Sandersons, 205 Rowe St., Eastwood WL 1654	22463	Premise Match	145m	South
GROCERS-RETAIL	Buttle, S. R. Pty. Ltd., Rowe St., Eastwood	56725	Road Match	145m+	South West
MEDICAL PRACTITIONERS	Cuthbert, H. W., Rowe St., Eastwood	72715	Road Match	145m+	South West
HOTELS-LICENSED	Eastwood Hotel (L. O. Brown, Licensee), Rowe St., Eastwood	63045	Road Match	145m+	South West
HALLS	Eastwood Literary Institute, Rowe St., Eastwood	60331	Road Match	145m+	South West
HALLS	Eastwood Masonic Hall, Rowe St., Eastwood	60332	Road Match	145m+	South West
HALLS	Eastwood Memorial Hall, Rowe St., Eastwood	60333	Road Match	145m+	South West
HALLS	Eastwood School of Arts, Rowe St., Eastwood	60334	Road Match	145m+	South West
FOOTWEAR-RETAILERS	Milne, A., Rowe St., Eastwood	47420	Road Match	145m+	South West
ENGINEERS-GENERAL &/OR MANUFACTURING &/OR MECHANICAL	Carter, F. R., 25 Glen St., Eastwood	40551	Premise Match	146m	West
HAIRDRESSERS (GENT.'S) &/OR TOBACCONISTS	Webb, A. S., 211 Rowe St., Eastwood	60145	Premise Match	147m	South
CAKE SHOPS & PASTRYCOOKS	Emery, M. and L., 139 Rowe St., Eastwood	16659	Premise Match	148m	South East
BEAUTY SALONS &/OR LADIES' HAIRDRESSERS	Goss, Norma M., 213 Rowe St., Eastwood	7204	Premise Match	149m	South
REAL ESTATE AGENTS	Somerville and Co., 2 Hillview Rd., Eastwood	98821	Premise Match	150m	South East
STOCK & STATION AGENTS	Somerville and Co., 2 Hillview Rd., Eastwood	105649	Premise Match	150m	South East
VALUERS	Somerville and Co., 2 Hillview Rd., Eastwood	111724	Premise Match	150m	South East
AUCTIONEERS-GENERAL	Somerville and Co., 2 Hillvlew Rd., Eastwood	4165	Premise Match	150m	South East

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

1950 Business Directory Drycleaners & Service Stations

Drycleaners, Motor Garages & Service Stations from the 1950 UBD Business Directory within 1km of the site:

Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MOTOR GARAGES &/OR ENGINEERS	Morrison, Nell Coy. Pty. Ltd., West Pde., Eastwood	84107	Road Match	128m+	South East
DRY CLEANERS, PRESSERS & DYERS	Lyke-Nu Dry Cleaning Co. Ltd. 125 Rowe St., Eastwood	35453	Premise Match	173m	South East
DRY CLEANERS, PRESSERS & DYERS	Coopers, 235 Rowe St., Eastwood	35168	Premise Match	178m	South West
DRY CLEANERS, PRESSERS & DYERS	Tip-Top Dry Cleaners, 235 Rowe St., Eastwood	35782	Premise Match	178m	South West
DRY CLEANERS, PRESSERS & DYERS	Catts and Co. 138 Rowe St., Eastwood	35150	Premise Match	226m	South East
MOTOR GARAGES &/OR ENGINEERS	Railway Garage, 45 Railway Pde., Beecroft	84254	Premise Match	245m	East
DRY CLEANERS, PRESSERS & DYERS	"Purple Rose" (Agents), 88 Rowe St., Eastwood	35034	Premise Match	370m	East
DRY CLEANERS, PRESSERS & DYERS	Spotless Dry Cleaners, 68 Rowe St., Eastwood	35704	Premise Match	407m	East
MOTOR GARAGES &/OR ENGINEERS	Haigh Bros. Pty. Ltd., 603 Blaxland Rd., Eastwood	83835	Premise Match	588m	East
MOTOR SERVICE STATIONS-PETROL, Etc.	Haigh Bros. Pty. Ltd., 603 Blaxland Rd., Eastwood	86028	Premise Match	588m	East
MOTOR SERVICE STATIONS-PETROL, Etc.	Northern Motor Garage, 564 Blaxland Rd., Eastwood	86240	Premise Match	641m	East
MOTOR SERVICE STATIONS-PETROL, Etc.	Willcoxson, 2 Lovell Rd., Eastwood	86529	Premise Match	893m	East
MOTOR GARAGES &/OR ENGINEERS	Willcoxson, H., 2 Lovell Rd., Eastwood	84561	Premise Match	893m	East

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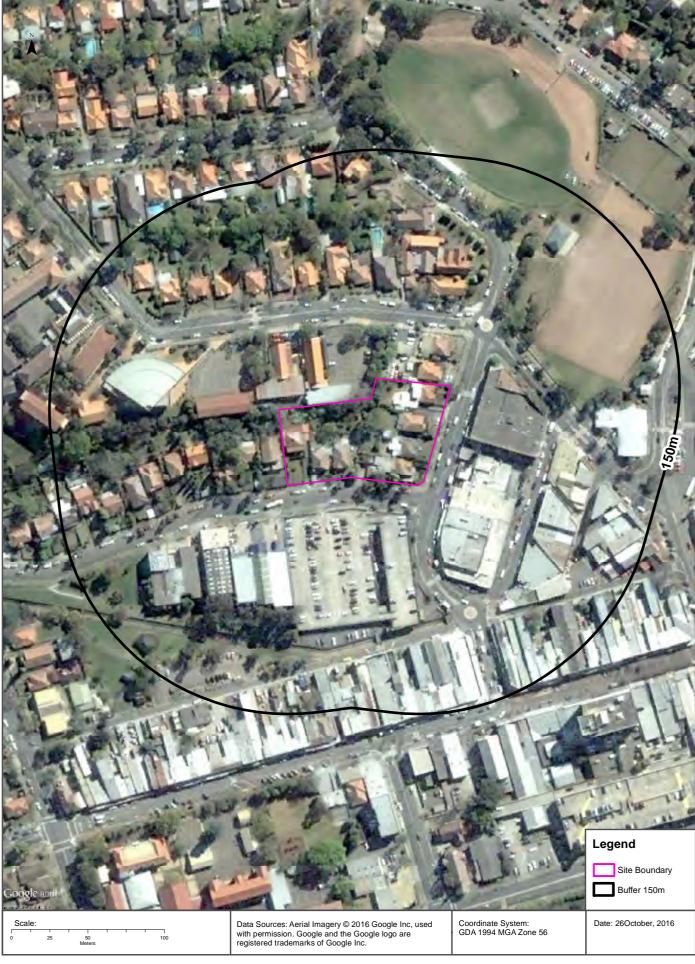












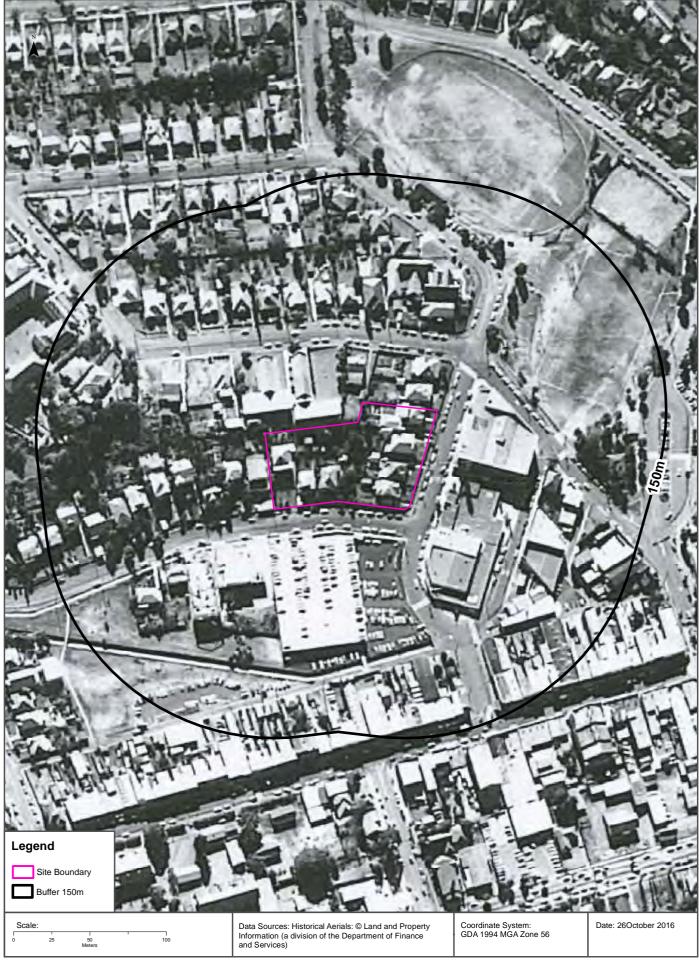








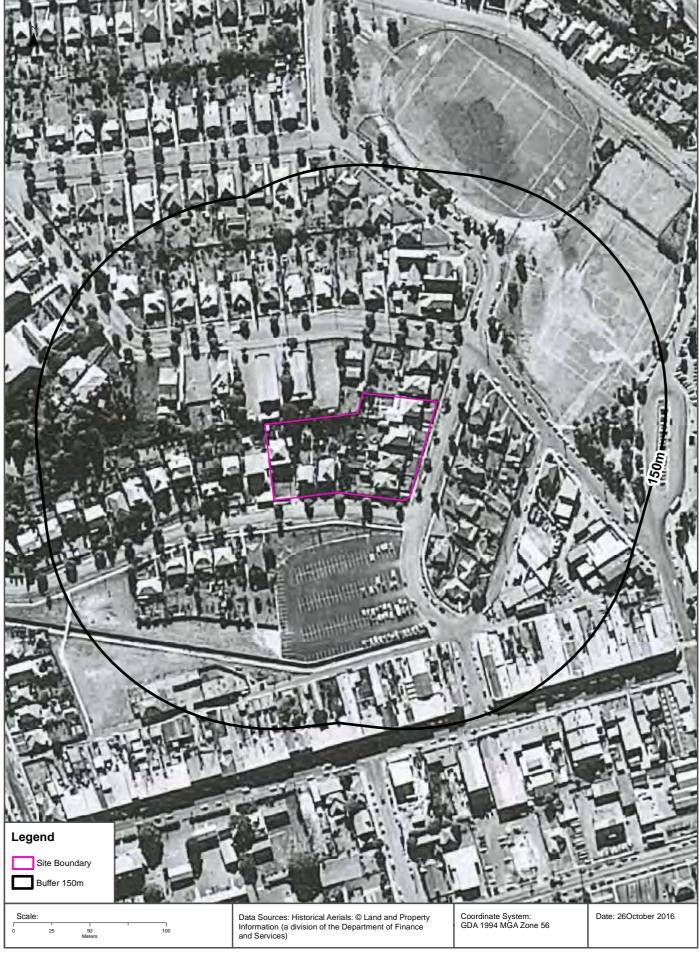








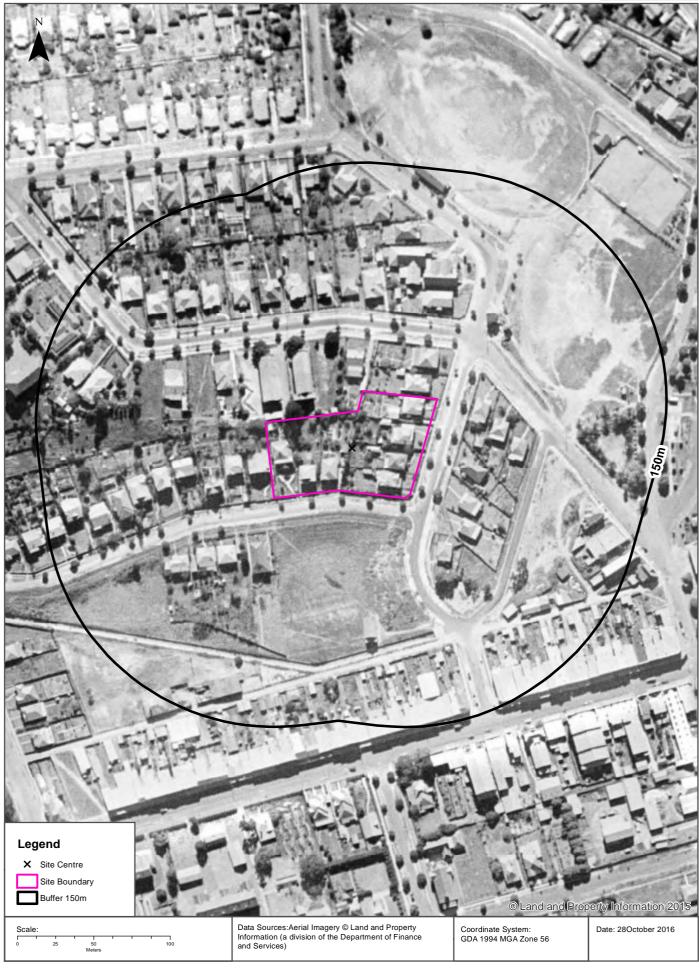






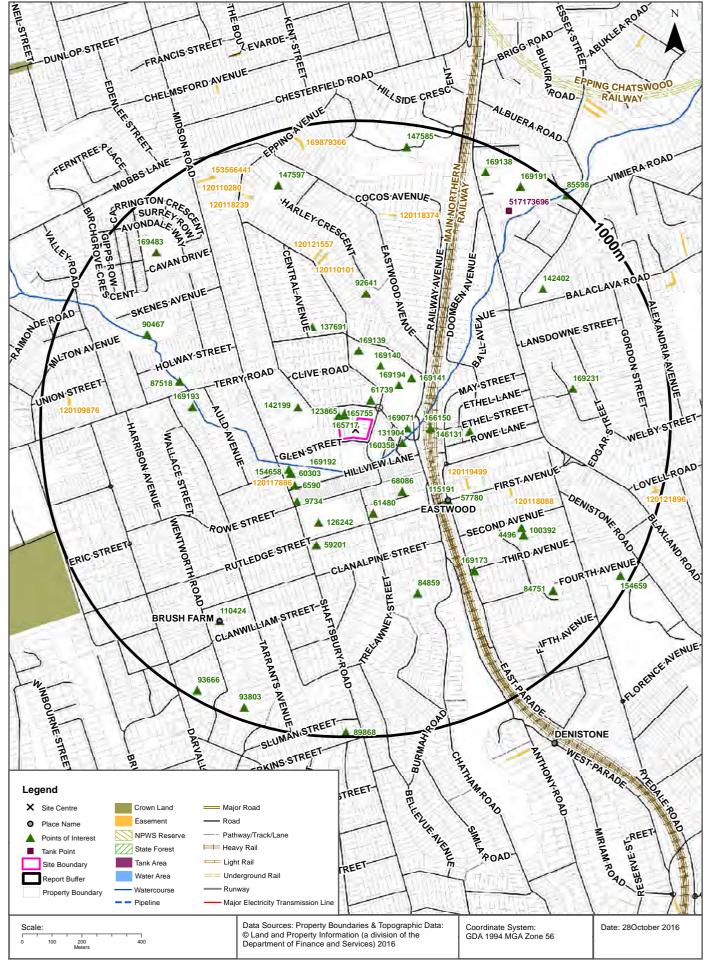






Topographic Features





Topographic Features

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Points of Interest

What Points of Interest exist within the report buffer?

Map Id	Feature Type	Label	Distance	Direction
165717	Special School	ASPECT VERN BARNETT SCHOOL EASTWOOD	30m	North West
165755	Primary School	ST KEVIN'S CATHOLIC PRIMARY SCHOOL	31m	North West
123865	Place Of Worship	CATHOLIC CHURCH	35m	North West
61739	Place Of Worship	UNITING CHURCH	67m	North East
131904	Post Office	EASTWOOD POST OFFICE	82m	East
160358	Club	EASTWOOD CLUB (THE)	119m	East
169071	Library	EASTWOOD LIBRARY	122m	East
169194	Park	EASTWOOD PARK	147m	North East
142199	High School	MARIST COLLEGE EASTWOOD	147m	West
169192	Picnic Area	GLEN RESERVE	151m	South West
169140	Sports Field	EASTWOOD OVAL	185m	North
169141	Sports Field	BOWLING GREENS	193m	North East
166150	Railway Station	EASTWOOD RAILWAY STATION	199m	East
154658	Medical Centre	EASTWOOD COMMUNITY HEALTH CENTRE	200m	South West
60303	Place Of Worship	BRETHREN CHURCH	200m	South West
68086	Shopping Centre	EASTWOOD CENTRE	213m	South East
6590	Community Facility	EASTWOOD SENIOR CITIZENS CLUB	216m	South West
169139	Park	PLAYGROUND	228m	North
61480	Place Of Worship	UNITING CHURCH	249m	South
9734	Fire Station	EASTWOOD FIRE STATION	253m	South West
126242	Primary School	EASTWOOD PUBLIC SCHOOL	288m	South
146131	Police Station	EASTWOOD POLICE STATION	330m	East
137691	Retirement Village	MACDONALD HOMES EASTWOOD	339m	North West
115191	Suburb	EASTWOOD	342m	South East
59201	Place Of Worship	ANGLICAN CHURCH	364m	South
57780	Place Of Worship	BAPTIST CHURCH	407m	South East
92641	Park	BLUE GUM RESERVE	421m	North
169193	Park	BRAEMAR PARK	492m	West
84859	Park	OUTLOOK PARK	545m	South
87518	Park	DAVID HAMILTON RESERVE	551m	West
169173	Monument	COULTERS CORNER	572m	South East
100392	Sports Field	BOWLING GREENS	599m	South East
4496	Club	RYDE-EASTWOOD BOWLING CLUB	617m	South East

Map Id	Feature Type	Label	Distance	Direction
169231	Park	GIRRAWEEN RESERVE	681m	East
90467	Park	SKENES RESERVE	708m	North West
142402	Park	MOORE PARK	722m	North East
110424	Locality	BRUSH FARM	732m	South West
84751	Park	VALERIE PARK	807m	South East
147597	Park	GEORGE HARLEY PARK	828m	North
169483	Park	PLAYGROUND	840m	North West
169138	Park	PLAYGROUND	916m	North East
147585	Park	EDNA HUNT SANCTUARY	925m	North
169191	Sports Field	SOMERVILLE PARK	929m	North East
93803	Park	LYNN PARK	955m	South
154659	Medical Centre	RYDE HOSPITAL COMMUNITY HEALTH CENTRE	966m	South East
93666	Park	WARRAWONG RESERVE	969m	South West
89868	Park	HIBBLE PARK	984m	South
85598	Park	YARRAMAR RESERVE	998m	North East

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Topographic Features

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Tanks (Areas)

What are the Tank Areas located within the report 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	Capture Method	Feature Currency	Distance	Direction
N/A	No records in buffer						

Tanks (Points)

What are the Tank Points located within the report 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	Capture Method	Feature Currency	Distance	Direction
517173696	Tank-RuralWater	Operational		Ortho Image Trace	2009-01-01	841m	North East

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

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Major Easements

What Major Easements exist within the report 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
120117886	Primary	Undefined		194m	South West
120119499	Primary	Undefined		356m	South East
120118088	Primary	Undefined		504m	East
120110101	Primary	Undefined		535m	North
120114866	Primary	Undefined		554m	North
120121557	Primary	Undefined		554m	North
120118374	Primary	Undefined		688m	North
120118239	Primary	Undefined		809m	North West
120109876	Primary	Undefined		898m	West
169879366	Primary	Right of way	4.7m, variable	921m	North
153566441	Primary	Right of way	var.	926m	North West
120110280	Primary	Undefined		930m	North West
120121896	Primary	Undefined		962m	East

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Topographic Features

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

State Forest

What State Forest exist within the report buffer?

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

State Forest Data Source: © Land and Property Information (2015)

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National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the report buffer?

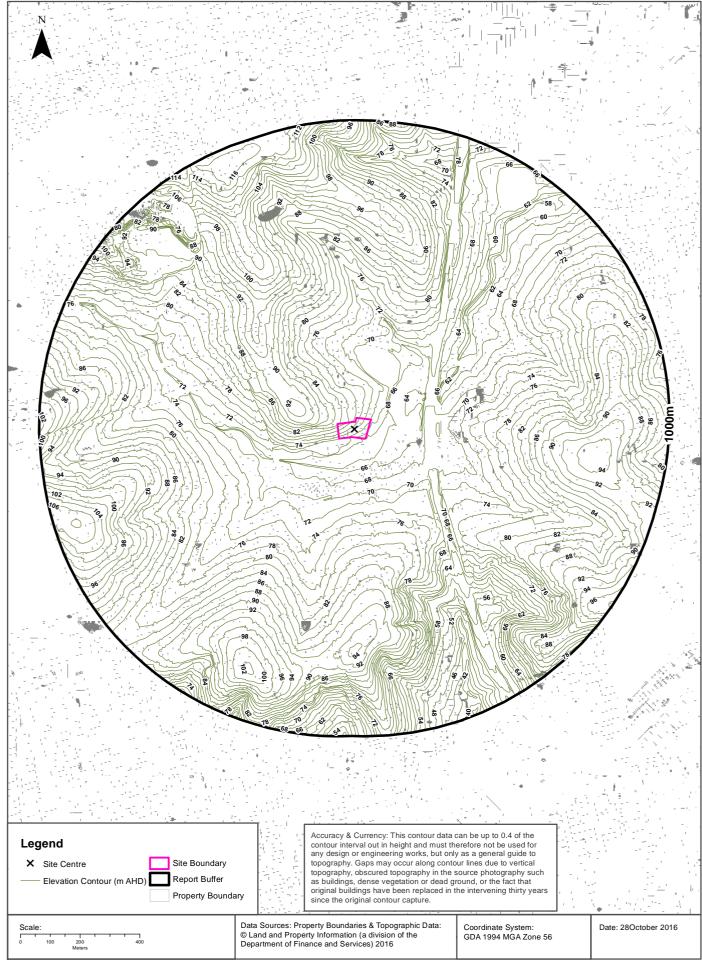
Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N/A	No records in buffer				

NPWS Data Source: © Land and Property Information (2015)

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Elevation Contours (m AHD)

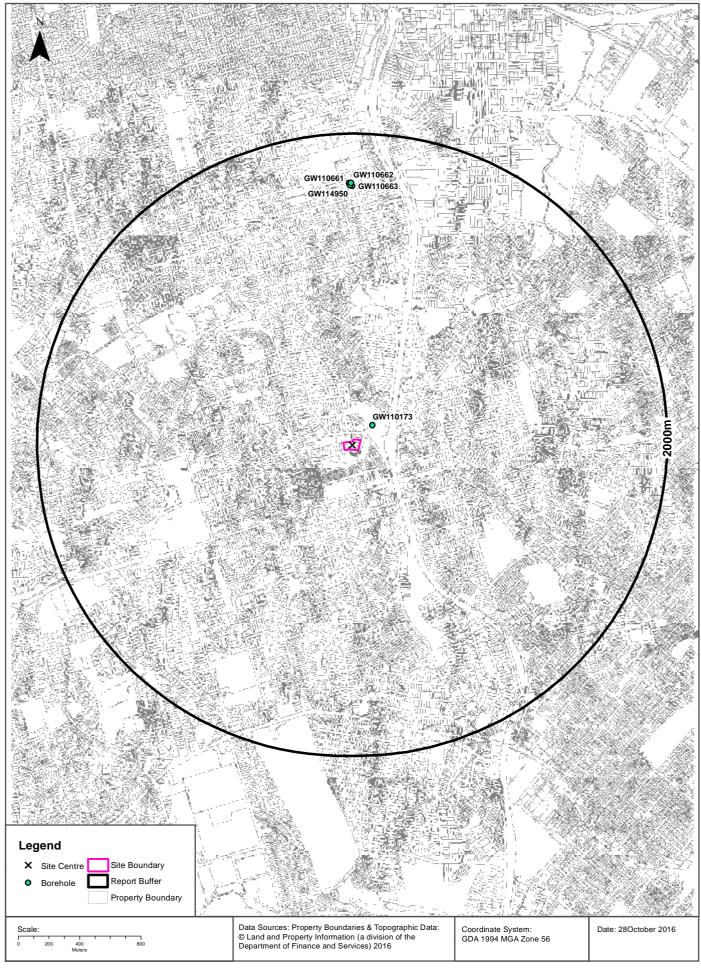




Groundwater Boreholes

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122





Hydrogeology & Groundwater

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Hydrogeology

Description of aquifers on-site:

Description

Porous, extensive aquifers of low to moderate productivity

Description of aquifers within the report buffer:

Description

Porous, extensive aquifers of low to moderate productivity

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)
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Groundwater Boreholes

Boreholes within 2km of the site:

GW No.	Licence No	Work Type	Owner Type	Purpose	Contractor	Complete Date	Final Depth	Drilled Depth	Salinity	SWL	Yield	Elev	Dist	Dir
GW110173	10BL602762, 10BL602983, 10WA109563	Bore	Other Govt	Recreation	Intertec Drilling Services	02/02/2009	48.00			5.50	2.800		123m	North East
GW110663	10BL603238	Well	Private	Monitoring	Numac Drilling Services Pty Ltd	20/08/2009	10.00	10.00					1656m	North
GW114950	10BL604609	Bore	Private	Monitoring bore	(Unknown)	01/04/2015	9.40	9.40					1661m	North
GW110661	10BL603238	Well	Private	Monitoring	Numac Drilling Services Pty Ltd	20/08/2009	10.00	10.00					1674m	North
GW110662	10BL603238	Well	Private	Monitoring	Numac Drilling Services Pty Ltd	20/08/2009	10.00	10.00					1676m	North

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

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Driller's Logs

Drill log data relevant to the boreholes within 2km of the site:

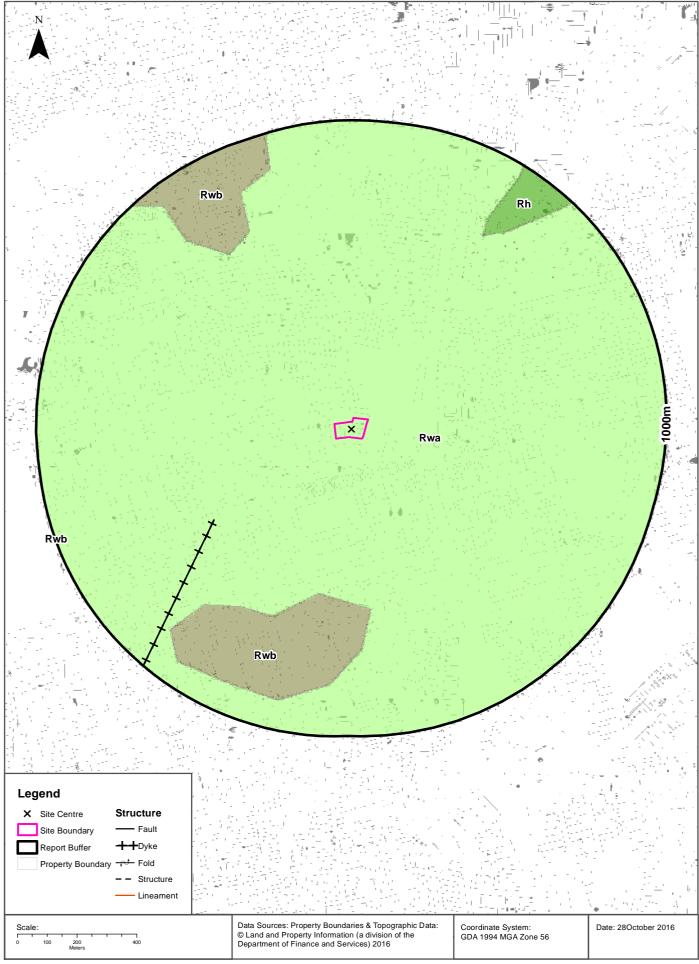
Groundwater No	Drillers Log	Distance	Direction
GW110663	0.00m-0.15m CEMENT 0.15m-0.50m FILL 0.50m-3.00m CLAY YELLOW WITH WHITE LENSES 3.00m-7.00m SANDSTONE ORANGE YELLOW,WEATHERED 7.00m-10.00m SHALE WEATHERED WITH BROWN CLAY	1656m	North
GW110661	0.00m-0.15m CEMENT 0.15m-0.50m FILL 0.50m-3.00m CLAY YELLOW WHITE LENSES 3.00m-7.00m SANDSTONE,ORANGE,YELLOW,WEATHERED 7.00m-10.00m SHALE WEATHERED WITH BROWN CLAY	1674m	North
GW110662	0.00m-0.15m CEMENT 0.15m-0.50m FILL 0.50m-3.00m CLAY YELLOW /WHITE LENSES 3.00m-7.00m SANDSTONE ORANGE RED WEATHERED 7.00m-10.00m SHALE WEATHERED/BROWN CLAY	1676m	North

Drill Log Data Source: NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corp Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Geology 1:100,000

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122





Geology

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Geological Units

What are the Geological Units onsite?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Rwa	Black to dark grey shale and laminate	Ashfield Shale	Wianamatta Group		Triassic		Sydney	1:100,000

What are the Geological Units within the report buffer?

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
Rwa	Black to dark grey shale and laminate	Ashfield Shale	Wianamatta Group		Triassic		Sydney	1:100,000
Rwb	Shale, carbonaceous claystone, laminate, fine to medium-grained lithic sandstone, rare coal	Bringelly Shale	Wianamatta Group		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 report buffer?

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

Geological Data Source : NSW Department of Industry, Resources & Energy
© State of New South Wales through the NSW Department of Industry, Resources & Energy

Naturally Occurring Asbestos Potential

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the report buffer?

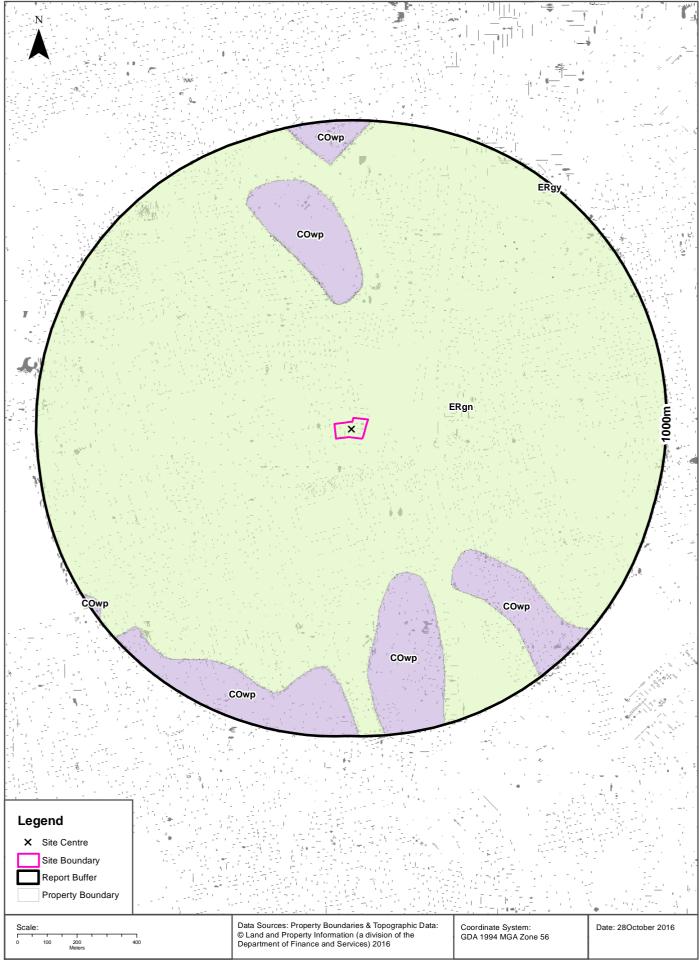
Potential	Sym	Strat Name	Group	Formation	Scale	Min Age	Max Age	Rock Type	Dom Lith	Description	Dist	Dir
No records in buffer												

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

Soil Landscapes

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122





Soils

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Soil Landscapes

What are the onsite Soil Landscapes?

Soil Code	Name	Group	Process	Map Sheet	Scale
ERgn	GLENORIE		EROSIONAL	Sydney	1:100,000

What are the Soil Landscapes within the report buffer?

Soil Code	Name	Group	Process	Map Sheet	Scale
COwp	WEST PENNANT HILLS		COLLUVIAL	Sydney	1:100,000
ERgn	GLENORIE		EROSIONAL	Sydney	1:100,000
ERgy	GYMEA		EROSIONAL	Sydney	1:100,000

Soils Landscapes Data Source : NSW Office of Environment and Heritage Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Standard Local Environmental Plan Acid Sulfate Soils

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Standard Local Environmental Plan Acid Sulfate Soils

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

Soil Class	Description	LEP
N/A		

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

Soil Class	Description	LEP	Distance	Direction
N/A				

Acid Sulfate Data Source Accessed 07/10/2016: NSW Crown Copyright - Planning and Environment Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Dryland Salinity

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Dryland Salinity

Is there Dryland Salinity data onsite?

No

Is there Dryland Salinity data within the report 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.

Mining Subsidence Districts

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Mining Subsidence Districts

Mining Subsidence Districts within the report 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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Environmental Zoning

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

State Environmental Planning Policy Protected Areas

Are there any State Environmental Planning Policy Protected Areas onsite or within the report buffer?

Dataset	Onsite	Within Site Buffer	Distance
SEPP14 - Coastal Wetlands	No	No	N/A
SEPP26 - Littoral Rainforests	No	No	N/A
SEPP71 - Coastal Protection Zone	No	No	N/A

SEPP Protected Areas Data Source: NSW Department of Planning & Environment Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

State Environmental Planning Policy Major Developments (2005)

State Environmental Planning Policy Major Developments within the report buffer?

Map Id	Feature	Effective Date	Distance	Direction
N/A	No records within buffer			

SEPP Major Development Data Source: NSW Department of Planning & Environment Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

State Environmental Planning Policy Strategic Land Use Areas

State Environmental Planning Policy Strategic Land Use Areas onsite or within the report buffer?

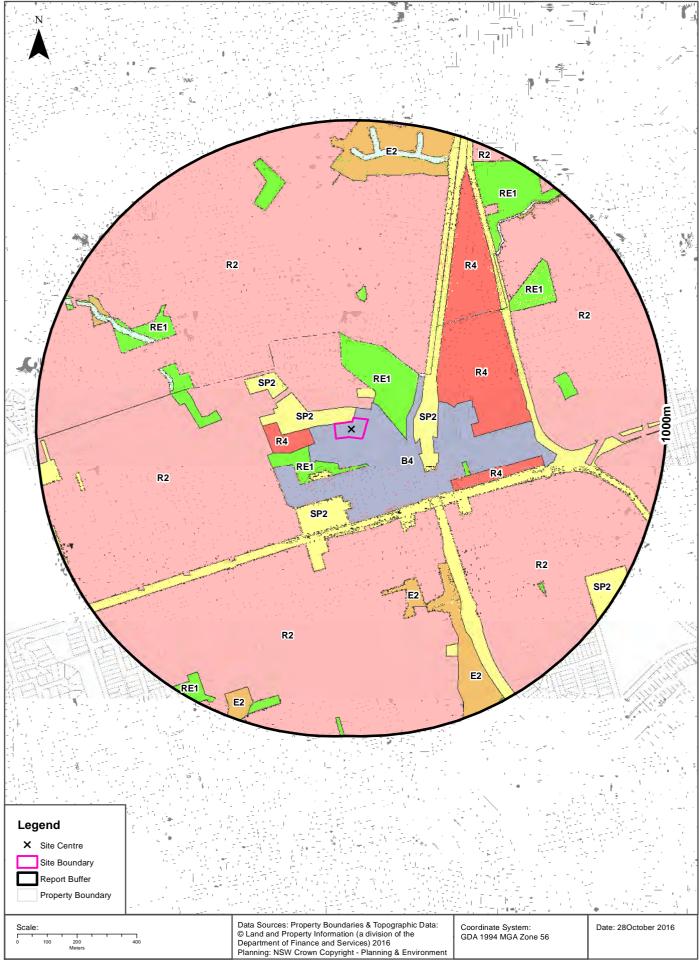
Strategic Land Use	SEPPNo	Effective Date	Amendment	Amendment Year	Distance	Direction
No records within buffer						

SEPP Strategic Land Use Data Source: NSW Department of Planning & Environment Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

LEP Planning Zones

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122





Local Environmental Plan

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Land Zoning

What Local Environmental Plan Land Zones exist within the report buffer?

Zone	Description	Purpose	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
B4	Mixed Use		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		0m	Onsite
SP2	Infrastructure	Educational Establishment & Place of Worship	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		1m	West
R2	Low Density Residential		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		33m	West
RE1	Public Recreation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		55m	North East
SP2	Infrastructure	Place of Public Worship	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		70m	North
R4	High Density Residential		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		74m	West
RE1	Public Recreation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		80m	South West
SP2	Infrastructure	Car Park	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		113m	South West
SP2	Infrastructure	Railways	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		152m	East
SP2	Infrastructure	Educational Establishment	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		191m	South
SP2	Infrastructure	Educational Establishment	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		196m	North West
R2	Low Density Residential		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		224m	North West
R4	High Density Residential		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		243m	North East
SP2	Infrastructure	Railway Corridor	Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		244m	North
SP2	Infrastructure	Classified Road	Ryde Local Environmental Plan 2014	10/04/2015	10/04/2015	11/09/2015	Amendment No 2	262m	South
R2	Low Density Residential		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		290m	South
SP2	Infrastructure	Educational Establishment	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		293m	South East
R4	High Density Residential		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		326m	East
SP2	Infrastructure	Railways	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		333m	South East
SP2	Infrastructure	Place of Public Worship	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		337m	South
RE1	Public Recreation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		340m	East
R2	Low Density Residential		Ryde Local Environmental Plan 2014	10/04/2015	10/04/2015	11/09/2015	Amendment No 2	351m	South East
SP2	Infrastructure	Place of Public Worship	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		378m	South East
RE1	Public Recreation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		379m	West
SP2	Infrastructure	Railway	Hornsby Local Environmental Plan 2013	27/09/2013	11/10/2013	12/12/2014		387m	North
RE1	Public Recreation		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		395m	North
R4	High Density Residential		Hornsby Local Environmental Plan 2013	27/09/2013	11/10/2013	12/12/2014		405m	North East
RE1	Public Recreation		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		486m	West
E2	Environmental Conservation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		492m	South East

Zone	Description	Purpose	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
E2	Environmental Conservation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		497m	South
R2	Low Density Residential		Ryde Local Environmental Plan 2014	10/04/2015	10/04/2015	11/09/2015	Amendment No 2	546m	East
W1	Natural Waterways		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		551m	West
SP2	Infrastructure	Road	Hornsby Local Environmental Plan 2013	27/09/2013	11/10/2013	12/12/2014		580m	North
RE1	Public Recreation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		597m	North East
RE1	Public Recreation		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		611m	North West
RE1	Public Recreation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		635m	East
W1	Natural Waterways		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		661m	North West
RE1	Public Recreation		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		678m	West
RE1	Public Recreation		Hornsby Local Environmental Plan 2013				703m	North East	
SP2	Infrastructure	Telephone Exchange	Ryde Local Environmental Plan 2014	Ryde Local Environmental			750m	South East	
RE1	Public Recreation		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		754m	North
RE1	Public Recreation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		762m	South East
SP2	Infrastructure	Classified Road	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		762m	East
E2	Environmental Conservation		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		786m	North
R2	Low Density Residential		Hornsby Local Environmental Plan 2013	27/09/2013	11/10/2013	12/12/2014		790m	North East
E2	Environmental Conservation		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		807m	North West
E2	Environmental Conservation		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		837m	North West
SP2	Infrastructure	Classified Road	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		840m	East
E2	Environmental Conservation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		844m	North East
SP2	Infrastructure	Electricity Generating Works	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		861m	West
W1	Natural Waterways		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		864m	North
SP2	Infrastructure	Health Services Facilities	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		878m	South East
RE1	Public Recreation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		882m	South
E2	Environmental Conservation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		883m	South
RE1	Public Recreation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		910m	South West
SP2	Infrastructure	Classified Road	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		914m	East
RE1	Public Recreation		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		916m	North West
SP2	Infrastructure	Electricity Generating Works	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		929m	West
R2	Low Density Residential		Hornsby Local Environmental Plan 2013	27/09/2013	11/10/2013	12/12/2014		932m	North East
SP2	Infrastructure	Classified Road	Ryde Local Environmental Plan 2014 12/09/2014 12/09/2014 11/09/2015			933m	East		
RE1	Public Recreation		Ryde Local Environmental 12/09/2014 12/09/2014 11/09/2015 Plan 2014			935m	South		
SP2	Infrastructure	Classified Road	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		935m	East
RE1	Public Recreation		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		959m	North West
W1	Natural Waterways		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		965m	North West

Zone	Description	Purpose	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RE1	Public Recreation		Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	18/12/2015		978m	North West
RE1	Public Recreation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		988m	South East
RE1	Public Recreation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		995m	North East

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Local Environmental Plan

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Minimum Subdivision Lot Size

What are the onsite Local Environmental Plan Minimum Subdivision Lot Sizes?

Symbol	Minimum Lot Size	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
No Data							

Maximum Height of Building

What are the onsite Local Environmental Plan Maximum Height of Buildings?

Symbol	Maximum Height of Building	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
J	9.50 m	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	22/04/2016		98.3

Floor Space Ratio

What are the onsite Local Environmental Plan Floor Space Ratios?

Symbol	Floor Space Ratio	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
D	0.50	LEP	12/09/2014	12/09/2014	24/06/2016		98.3

Land Application

What are the onsite Local Environmental Plan Land Applications?

Application Type	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
Included	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015		100

Land Reservation Acquisition

What are the onsite Local Environmental Plan Land Reservation Acquisitions?

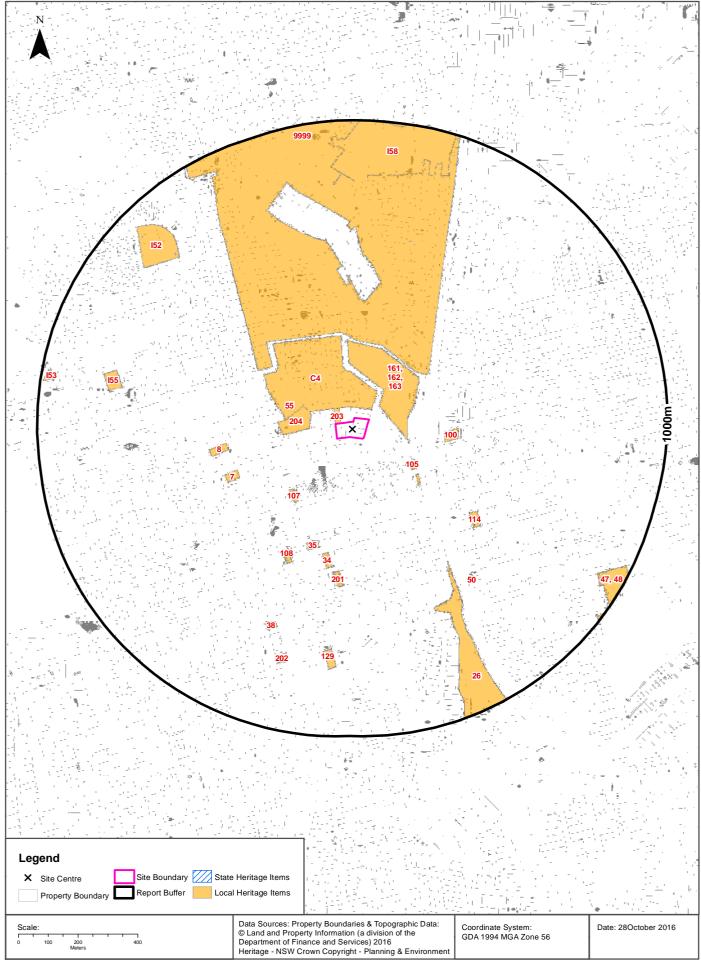
Reservation	LEP	Published Date	Commenced Date	Currency Date	Amendment	Comments	Percentage of Site Area
No Data							

Local Environment Plan Data Source: NSW Crown Copyright - Planning & Environment Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Heritage Items

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122





Heritage

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

State Heritage Items

What are the State Heritage Items located within the report 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 - Planning & Environment

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Local Heritage Items

What are the Local Heritage Items located within the report buffer?

Map Id	Name	Classification	Significance	LEP or Act	Published Date	Commenced Date	Currency Date	Distance	Direction
203	Library, St Kevinâ??s Primary School	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	1m	North West
C4	Eastwood House Estate, Eastwood	Conservation Area - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	34m	North West
161, 162, 163	Eastwood Park (gates, pavilion, grandstand)	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	55m	North East
204	St Kevinâ??s Catholic Church	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	87m	West
55	Eastwood House	Item - General	State	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	124m	West
105	â??Summer Hayesâ? (shops)	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	171m	South East
105	â??Summer Hayesâ? (shops)	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	213m	South East
107	Fire Station	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	223m	South West
9999	Epping/Eastwood Conservation Area	Conservation Area - General	Local	Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	13/05/2016	224m	North
100	Shops	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	256m	East
35	St Philipâ??s	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	346m	South
7	House	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	351m	West
8	House	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	365m	West
34	â??The Rectoryâ? (house)	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	383m	South
108	â??Upnaâ? (house)	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	406m	South West
114	House	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	434m	South East

Map Id	Name	Classification	Significance	LEP or Act	Published Date	Commenced Date	Currency Date	Distance	Direction
201	Dwelling	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	445m	South
26	Open space	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	505m	South East
50	Seat	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	589m	South East
38	House	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	647m	South
129	â??Womerahâ? (house)	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	707m	South
155	Hughes Road Group (Valley Road)	Item - General	Local	Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	13/05/2016	725m	West
202	House	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	741m	South
152	Eastwood Brickyards	Item - General	Local	Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	13/05/2016	768m	North West
158	Edna Hunt Reserve	Item - General	Local	Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	13/05/2016	786m	North
47, 48	â??Denistone Houseâ? and â?? Trigg Houseâ? (Ryde Hospital)	Item - General	State	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	903m	South East
153	Milton Avenue Group	Item - General	Local	Parramatta Local Environmental Plan 2011	07/10/2011	07/10/2011	13/05/2016	958m	West

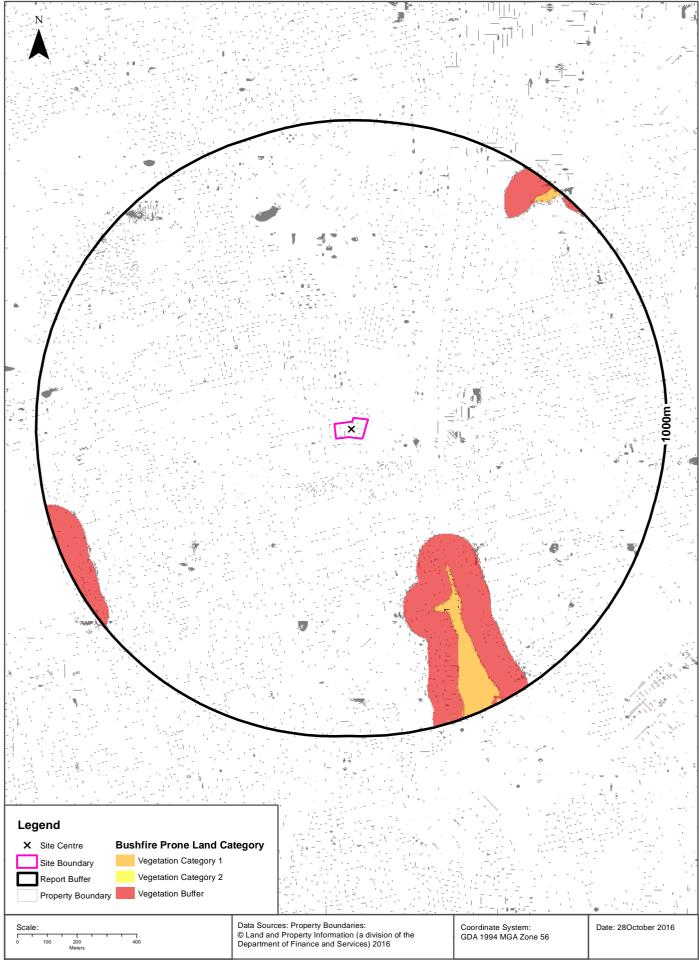
Heritage Data Source: NSW Crown Copyright - Planning & Environment

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Natural Hazards - Bushfire Prone Land







Natural Hazards

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Bushfire Prone Land

What are the nearest Bushfire Prone Land Categories that exist within the report buffer?

Bushfire Prone Land Category	Distance	Direction
Vegetation Buffer	405m	South East
Vegetation Category 1	504m	South East

Bushfire Prone Land Data Reference - NSW RFS GIS Data Set

Ecological Constraints - Native Vegetation & RAMSAR Wetlands

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122





Ecological Constraints

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

Native Vegetation

What native vegetation exists within the report 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
Weed_Ex	Weed_Ex: Weeds and Exotics			00: Not assessed	00: Not assessed	0: Not assessed	Exotic Species >90%cover	176m	West
S_WSF01	S_WSF01: Blue Gum High Forest	Blue Gum High Forest		10: Mesic/rainfore st	24: Urban mixed use	4: Very high	E.saligna+/ - E.pilularis/ S.glomullifera/ E.paniculata/ A.costata	239m	West
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			12: Dry xeric shrubs	15: Regrowth	3: High	E.resinifera/ E.punctata	616m	North East

Native Vegetation of the Sydney Metropolitan Area: NSW Office of Environment and Heritage Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

RAMSAR Wetlands

What RAMSAR Wetland areas exist within the report 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

1-5 Glen Street & 2-8 Lakeside Road, Eastwood, NSW 2122

ATLAS of NSW Wildlife

Endangered &Vulnerable Species on the ATLAS of NSW Wildlife database, within 10km of the site?

Class	Family	Scientific	Common	Exotic	NSW Status	Commonwealth Status
Amphibia	Hylidae	Litoria aurea	Green and Golden Bell Frog	No	Endangered, Protected	Vulnerable
Amphibia	Myobatrachidae	Pseudophryne australis	Red-crowned Toadlet	No	Vulnerable, Protected	
Aves	Accipitridae	Circus assimilis	Spotted Harrier	No	Vulnerable, Protected	
Aves	Accipitridae	Hieraaetus morphnoides	Little Eagle	No	Vulnerable, Protected	
Aves	Accipitridae	Lophoictinia isura	Square-tailed Kite	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Accipitridae	Pandion cristatus	Eastern Osprey	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Anatidae	Nettapus coromandelianus	Cotton Pygmy-Goose	No	Endangered, Protected	
Aves	Anatidae	Stictonetta naevosa	Freckled Duck	No	Vulnerable, Protected	
Aves	Ardeidae	Botaurus poiciloptilus	Australasian Bittern	No	Endangered, Protected	Endangered
Aves	Ardeidae	Ixobrychus flavicollis	Black Bittern	No	Vulnerable, Protected	
Aves	Artamidae	Artamus cyanopterus cyanopterus	Dusky Woodswallow	No	Vulnerable, Protected	
Aves	Cacatuidae	Callocephalon fimbriatum	Gang-gang Cockatoo	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Cacatuidae	Callocephalon fimbriatum	Gang-gang Cockatoo population in the Hornsby and Ku-ring-gai Local Government Areas	No	Endangered Population, Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Cacatuidae	Calyptorhynchus lathami	Glossy Black-Cockatoo	No	Vulnerable, Protected, Category 2 Sensitive Species	
Aves	Charadriidae	Charadrius leschenaultii	Greater Sand-plover	No	Vulnerable, Protected	V,C,J,K
Aves	Ciconiidae	Ephippiorhynchus asiaticus	Black-necked Stork	No	Endangered, Protected	
Aves	Columbidae	Ptilinopus superbus	Superb Fruit-Dove	No	Vulnerable, Protected	
Aves	Falconidae	Falco hypoleucos	Grey Falcon	No	Endangered, Protected, Category 2 Sensitive Species	
Aves	Falconidae	Falco subniger	Black Falcon	No	Vulnerable, Protected	
Aves	Haematopodidae	Haematopus fuliginosus	Sooty Oystercatcher	No	Vulnerable, Protected	
Aves	Laridae	Sternula albifrons	Little Tern	No	Endangered, Protected	CAMBA, JAMBA, ROKAMBA
Aves	Meliphagidae	Anthochaera phrygia	Regent Honeyeater	No	Critically Endangered Species, Protected	Critically Endangered
Aves	Meliphagidae	Epthianura albifrons	White-fronted Chat	No	Vulnerable, Protected	Ū.
Aves	Meliphagidae	Epthianura albifrons	White-fronted Chat population in the Sydney Metropolitan Catchment Management Area	No	Endangered Population, Vulnerable, Protected	
Aves	Neosittidae	Daphoenositta chrysoptera	Varied Sittella	No	Vulnerable, Protected	
Aves	Petroicidae	Petroica boodang	Scarlet Robin	No	Vulnerable, Protected	
Aves	Petroicidae	Petroica phoenicea	Flame Robin	No	Vulnerable, Protected	
Aves	Petroicidae	Petroica rodinogaster	Pink Robin	No	Vulnerable, Protected	
Aves	Psittacidae	Glossopsitta pusilla	Little Lorikeet	No	Vulnerable, Protected	

Class	Family	Scientific	Common	Exotic	NSW Status	Commonwealth Status
Aves	Psittacidae	Lathamus discolor	Swift Parrot	No	Endangered, Protected, Category 3 Sensitive Species	Critically Endangered
Aves	Psittacidae	Polytelis swainsonii	Superb Parrot	No	Vulnerable, Protected, Category 3 Sensitive Species	Vulnerable
Aves	Rostratulidae	Rostratula australis	Australian Painted Snipe	No	Endangered, Protected	Endangered
Aves	Scolopacidae	Calidris ferruginea	Curlew Sandpiper	No	Endangered, Protected	CE,C,J,K
Aves	Scolopacidae	Calidris tenuirostris	Great Knot	No	Vulnerable, Protected	CE,C,J,K
Aves	Scolopacidae	Limicola falcinellus	Broad-billed Sandpiper	No	Vulnerable, Protected	CAMBA, JAMBA, ROKAMBA
Aves	Scolopacidae	Limosa limosa	Black-tailed Godwit	No	Vulnerable, Protected	CAMBA, JAMBA, ROKAMBA
Aves	Scolopacidae	Xenus cinereus	Terek Sandpiper	No	Vulnerable, Protected	CAMBA, JAMBA, ROKAMBA
Aves	Strigidae	Ninox connivens	Barking Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Strigidae	Ninox strenua	Powerful Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Tytonidae	Tyto longimembris	Eastern Grass Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Tytonidae	Tyto novaehollandiae	Masked Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	
Mammalia	Burramyidae	Cercartetus nanus	Eastern Pygmy-possum	No	Vulnerable, Protected	
Mammalia	Dasyuridae	Dasyurus maculatus	Spotted-tailed Quoll	No	Vulnerable, Protected	Endangered
Mammalia	Emballonuridae	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	No	Vulnerable, Protected	
Mammalia	Molossidae	Mormopterus norfolkensis	Eastern Freetail-bat	No	Vulnerable, Protected	
Mammalia	Peramelidae	Perameles nasuta	Long-nosed Bandicoot population in inner western Sydney	No	Endangered Population, Protected	
Mammalia	Petauridae	Petaurus australis	Yellow-bellied Glider	No	Vulnerable, Protected	
Mammalia	Phascolarctidae	Phascolarctos cinereus	Koala	No	Vulnerable, Protected	Vulnerable
Mammalia	Pteropodidae	Pteropus poliocephalus	Grey-headed Flying-fox	No	Vulnerable, Protected	Vulnerable
Mammalia	Vespertilionidae	Chalinolobus dwyeri	Large-eared Pied Bat	No	Vulnerable, Protected	Vulnerable
Mammalia	Vespertilionidae	Falsistrellus tasmaniensis	Eastern False Pipistrelle	No	Vulnerable, Protected	
Mammalia	Vespertilionidae	Miniopterus australis	Little Bentwing-bat	No	Vulnerable, Protected	
Mammalia	Vespertilionidae	Miniopterus schreibersii oceanensis	Eastern Bentwing-bat	No	Vulnerable, Protected	
Mammalia	Vespertilionidae	Myotis macropus	Southern Myotis	No	Vulnerable, Protected	
Mammalia	Vespertilionidae	Scoteanax rueppellii	Greater Broad-nosed Bat	No	Vulnerable, Protected	
Reptilia	Varanidae	Varanus rosenbergi	Rosenberg's Goanna	No	Vulnerable, Protected	
Flora	Campanulaceae	Wahlenbergia multicaulis	Tadgell's Bluebell in the local government areas of Auburn, Bankstown, Baulkham Hills, Canterbury, Hornsby, Parramatta and Strathfield	No	Endangered Population	
Flora	Convolvulaceae	Wilsonia backhousei	Narrow-leafed Wilsonia	No	Vulnerable, Protected	
Flora	Dilleniaceae	Hibbertia superans		No	Endangered, Protected	
Flora	Elaeocarpaceae	Tetratheca glandulosa		No	Vulnerable, Protected	
Flora	Elaeocarpaceae	Tetratheca juncea	Black-eyed Susan	No	Vulnerable, Protected	Vulnerable
Flora	Ericaceae	Epacris purpurascens var. purpurascens		No	Vulnerable, Protected	
Flora	Fabaceae (Faboideae)	Dillwynia tenuifolia		No	Vulnerable, Protected	

Class	Family	Scientific	Common	Exotic	NSW Status	Commonwealth Status
Flora	Fabaceae (Mimosoideae)	Acacia bynoeana	Bynoe's Wattle	No	Endangered, Protected	Vulnerable
Flora	Fabaceae (Mimosoideae)	Acacia clunies-rossiae	Kanangra Wattle	No	Vulnerable, Protected	
Flora	Fabaceae (Mimosoideae)	Acacia pubescens	Downy Wattle	No	Vulnerable, Protected	Vulnerable
Flora	Fabaceae (Mimosoideae)	Acacia terminalis subsp. terminalis	Sunshine Wattle	No	Endangered, Protected	Endangered
Flora	Grammitidaceae	Grammitis stenophylla	Narrow-leaf Finger Fern	No	Endangered, Protected, Category 3 Sensitive Species	
Flora	Haloragaceae	Haloragodendron lucasii		No	Endangered, Protected	Endangered
Flora	Lobeliaceae	Hypsela sessiliflora		No	Endangered, Protected, Category 3 Sensitive Species	Extinct
Flora	Malvaceae	Lasiopetalum joyceae		No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Callistemon linearifolius	Netted Bottle Brush	No	Vulnerable, Protected, Category 3 Sensitive Species	
Flora	Myrtaceae	Darwinia biflora		No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Darwinia peduncularis		No	Vulnerable, Protected	
Flora	Myrtaceae	Eucalyptus camfieldii	Camfield's Stringybark	No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Eucalyptus nicholii	Narrow-leaved Black Peppermint	No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Eucalyptus scoparia	Wallangarra White Gum	No	Endangered, Protected	Vulnerable
Flora	Myrtaceae	Leptospermum deanei		No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Melaleuca biconvexa	Biconvex Paperbark	No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Melaleuca deanei	Deane's Paperbark	No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Syzygium paniculatum	Magenta Lilly Pilly	No	Endangered, Protected	Vulnerable
Flora	Myrtaceae	Triplarina imbricata	Creek Triplarina	No	Endangered, Protected	Endangered
Flora	Orchidaceae	Caladenia tessellata	Thick Lip Spider Orchid	No	Endangered, Protected, Category 2 Sensitive Species	Vulnerable
Flora	Orchidaceae	Genoplesium baueri	Bauer's Midge Orchid	No	Endangered, Protected, Category 2 Sensitive Species	Endangered
Flora	Orchidaceae	Pterostylis nigricans	Dark Greenhood	No	Vulnerable, Protected, Category 2 Sensitive Species	
Flora	Orchidaceae	Pterostylis saxicola	Sydney Plains Greenhood	No	Endangered, Protected, Category 2 Sensitive Species	Endangered
Flora	Poaceae	Deyeuxia appressa		No	Endangered, Protected	Endangered
Flora	Proteaceae	Grevillea parviflora subsp. parviflora	Small-flower Grevillea	No	Vulnerable, Protected	Vulnerable
Flora	Proteaceae	Persoonia hirsuta	Hairy Geebung	No	Endangered, Protected, Category 3 Sensitive Species	Endangered
Flora	Proteaceae	Persoonia nutans	Nodding Geebung	No	Endangered, Protected	Endangered
Flora	Rhamnaceae	Pomaderris prunifolia	P. prunifolia in the Parramatta, Auburn, Strathfield and Bankstown Local Government Areas	No	Endangered Population	
Flora	Rubiaceae	Galium australe	Tangled Bedstraw	No	Endangered, Protected	
Flora	Thymelaeaceae	Pimelea curviflora var.		No	Vulnerable, Protected	Vulnerable
Flora	Thymelaeaceae	Pimelea spicata	Spiked Rice-flower	No	Endangered, Protected	Endangered
Flora	Zannichelliaceae	Zannichellia palustris		No	Endangered, Protected	
Flora	Hygrophoraceae	Camarophyllopsis kearneyi		No	Endangered, Protected	
Flora	Hygrophoraceae	Hygrocybe anomala var. ianthinomarginata		No	Vulnerable, Protected	

Class	Family	Scientific	Common	Exotic	NSW Status	Commonwealth Status
Flora	Hygrophoraceae	Hygrocybe aurantipes		No	Vulnerable, Protected	
Flora	Hygrophoraceae	Hygrocybe austropratensis		No	Endangered, Protected	
Flora	Hygrophoraceae	Hygrocybe collucera		No	Endangered, Protected	
Flora	Hygrophoraceae	Hygrocybe griseoramosa		No	Endangered, Protected	
Flora	Hygrophoraceae	Hygrocybe lanecovensis		No	Endangered, Protected	
Flora	Hygrophoraceae	Hygrocybe reesiae		No	Vulnerable, Protected	
Flora	Hygrophoraceae	Hygrocybe rubronivea		No	Vulnerable, Protected	

Data does not include records not defined as either endangered or vulnerable, and category 1 sensitive species are also excluded. NSW Office of Environment and Heritage's Atlas of NSW Wildlife, which holds data from a number of custodians. Data obtained 28/10/2016

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APPENDIX C

HISTORICAL TITLE SEARCH RESULTS

Summary of Owners Report

Address: 1 - 5 Glenn Street & 2-8 Lakeside Road, Eastwood

Description: - Lots 3 to 9 inclusive D.P. 8043

As regards Lot 3 D.P. 8043

Date of Acquisition and Term held	Registered Proprietor(s) & occupations where available	Reference to title at acquisition and sale
9.3.1909 (1909 to 1924)	Reginald Campbell Galbraith (Wine and Spirt Merchant) Lewis Alexander Johnstone (Accountant)	Vol 1953 Fol 176 Now Vol 2984 Fol 245
7.4.1924 (1924 to 1984)	Harrie Weston Barnwell (Builder)	Vol 2984 Fol 245 Now Vol 3582 Fol 235
11.1.1984 (1984 to 1987)	Eva Beatrice Barnwell (Transmission Application not investigated)	Vol 3582 Fol 235
13.10.1987 (1987 to 1995)	The Trustees of the Roman Catholic Church for the Archdiocese of Sydney	Vol 3582 Fol 235
24.8.1995 (1995 to 1999)	K.I.D. Realty Pty Limited	Vol 3582 Fol 235 Now 3/8043
12.11.1999 (1999 to 2016)	Kyu Young Lee Bockhey Lee Now Kenny Kyu Young Lee Sarah Bockhey Lee	3/8043
13.2.2016 (2016 to Date)	# Romeciti Eastwood Pty Ltd	3/8043

Denotes current registered proprietor

Easements & Leases: - NIL

As regards Lot 4 D.P. 8043

Date of Acquisition and Term held	Registered Proprietor(s) & occupations where available	Reference to title at acquisition and sale
9.3.1909 (1909 to 1923)	Reginald Campbell Galbraith (Wine and Spirt Merchant) Lewis Alexander Johnstone (Accountant)	Vol 1953 Fol 176 Now Vol 2984 Fol 245
5.11.1923 (1923 to 1924) Harrie Weston Barnwell (Builder)		Vol 2984 Fol 245 Now Vol 3530 Fol 100
24.3.1924 (1924 to 1949)	Frederick Perey Badman (Newspaper Publisher)	Vol 3530 Fol 100
30.5.1949 (1949 to 1949)	Florence Evelyn Badman (Widow) Leslie Frederick Wesley Badman (Motor Sales Executive) (Application by Transmission not investigated)	Vol 3530 Fol 100
5.9.1949 (1949 to 1957)	Roy Arthur Lyle Shave (School Teacher)	Vol 3530 Fol 100
18.12.1957 (1957 to 1999)	Patrick John Carr (Master Butcher) Sarah Rona Carr (Married Woman)	Vol 3530 Fol 100 Now 4/8043
30.8.1999 (1999 to 2005)	Patrick John Carr (Master Butcher)	
Kathleen Mary Hawdon 2005 to 2006) Kathleen Mary Hawdon Timothy Joseph Carr		4/8043

Search continued as regards Lot 4 D.P. 8043

Date of Acquisition and Term held	Registered Proprietor(s) & occupations where available	Reference to title at acquisition and sale
8.8.2006 (2006 to 2006)	Les Patrick Carr Kathleen Mary Hawdon Timothy Joseph Carr Patrick Frederick Carr Danny Michael Carr Terrence Kevin Carr Mark Stephen Carr	4/8043
8.8.2006 (2006 to 2008)	Kathleen Mary Hawdon Timothy Joseph Carr Patrick Frederick Carr Danny Michael Carr Terrence Kevin Carr Mark Stephen Carr	4/8043
24.9.2008 (2008 to 2014)	Kathleen Mary Hawdon Timothy Joseph Carr Patrick Frederick Carr Terrence Kevin Carr Mark Stephen Carr	4/8043
26.7.2014 (2014 to 2016)	Raphael Shin Enterprises Pty Limited	4/8043
13.2.2016 (2016 to Date)	# Romeciti Eastwood Pty Ltd	4/8043

Denotes current registered proprietor

Easements & Leases: - NIL

As regards Lot 5 D.P. 8043

Date of Acquisition and Term held	Registered Proprietor(s) & occupations where available	Reference to title at acquisition and sale
22.3.1917 (1917 to 1949)	Louis Pedrolini (Shopkeeper)	Vol 2745 Fol 138 Now Vol 4352 Fol 10
23.5.1949 (1949 to 1949)	Anita Francis Rossetto (Married Woman) (Application by Transmission not investigated)	Vol 4352 Fol 10
30.6.1949 (1949 to 1990)	Erminio Rossetto (Farmer)	Vol 4352 Fol 10 Now 5/8043
22.2.1990 (1990 to 1995)	Anita Frances Rossetto	5/8043
26.5.1995 (1995 to 1995)	Maria Frances Adorini	5/8043
22.9.1995 (1995 to 2016)	Hsin Kuel Yu Now Hsin Kuei Yu	5/8043
13.2.2016 (2016 to Date)	# Romeciti Eastwood Pty Ltd	5/8043

Denotes current registered proprietor

Easements & Leases: - NIL

As regards Lot 6 D.P. 8043

Date of Acquisition and Term held	Registered Proprietor(s) & occupations where available	Reference to title at acquisition and sale
9.3.1909 (1909 to 1922)	Reginald Campbell Galbraith (Wine and Spirt Merchant) Lewis Alexander Johnstone (Accountant)	Vol 1953 Fol 176 Now Vol 2984 Fol 245
22.6.1922 (1922 to 1973)	David MacKenzie Asher (Bank Clerk)	Vol 2984 Fol 245 Now Vol 3338 Fol 151
20.7.1973 (1973 to 1978)	Reginald Bede Millgate (Salesman)	Vol 3338 Fol 151
5.4.1978 (1978 to 2016)	Mary Elizabeth Griffiths (Married Woman)	Vol 3338 Fol 151 Now 6/8043
13.2.2016 (2016 to Date)	# Romeciti Eastwood Pty Ltd	6/8043

Denotes current registered proprietor

Easements & Leases: - NIL

As regards Lot 7 D.P. 8043

Date of Acquisition and Term held	Registered Proprietor(s) & occupations where available	Reference to title at acquisition and sale
9.3.1909 (1909 to 1925)	Reginald Campbell Galbraith (Wine and Spirt Merchant) Lewis Alexander Johnstone (Accountant)	Vol 1953 Fol 176 Now Vol 2984 Fol 245
2.9.1925 (1925 to 1925)	Ernest Theodore Haynes (Electrician)	Vol 2984 Fol 245 Now Vol 3338 Fol 151
2.10.1925 (1925 to 1926)	Austin William Edwards (Carpenter)	Vol 3338 Fol 151 Now Vol 3793 Fol 5
22.12.1926 (1926 to 1957)	Victor Leonard Cottam (Engineer) Ida May Cottam (Married Woman)	Vol 3793 Fol 5
5.7.1957 (1957 to 1981)	Wilfred Watson Pattinson (Storeman)	Vol 3793 Fol 5
15.12.1981 (1981 to 1983)	Jean Mary Wilson Edna Veronica Moore	Vol 3793 Fol 5
27.6.1983 (1983 to 2005)	Kamal Ahmed Khurshed Sally Ann Corish Now Sally Ann Khurshed	Vol 3793 Fol 5 Now 7/8043
29.11.2005 (2005 to 2016)	Chan Wei Yu Tai Mei Lee	7/8043
25.2.2016 (2016 to Date)	# Romeciti Eastwood Pty Ltd	7/8043

Denotes current registered proprietor

Easements & Leases: - NIL

As regards Lot 8 D.P. 8043

Date of Acquisition and Term held	Registered Proprietor(s) & occupations where available	Reference to title at acquisition and sale
9.3.1909 (1909 to 1920)	Reginald Campbell Galbraith (Wine and Spirt Merchant) Lewis Alexander Johnstone (Accountant)	Vol 1953 Fol 176 Now Vol 2984 Fol 245
24.8.1920 (1920 to 1923)	Ernest William Berry (Salesman)	Vol 2984 Fol 245 Now Vol 3098 Fol 217
14.2.1923 (1923 to 1925)	Basil Cook (Builder)	Vol 3098 Fol 217
27.1.1925 (1925 to 1945)	Henry William Gibhons (Carpenter)	Vol 3098 Fol 217
26.4.1945 (1945 to 1949)	Eric Francis Gladstone Badman (Foreman Electrical Fitter	Vol 3098 Fol 217
26.9.1949 (1949 to 1951)	Andrew Brindell (Butcher)	Vol 3098 Fol 217
10.7.1951 (1951 to 1957)	William Marwood (Railway Clerk)	Vol 3098 Fol 217
15.5.1957 (1957 to 1969)	John Charles Anderson (Mechanical Fitter) Catherine Ann Anderson (Married Woman)	Vol 3098 Fol 217
27.6.1969 (1969 to 1969)	Catherine Ann Anderson (Widow)	Vol 3098 Fol 217 Now Vol 1110 Fol 249
18.12.1969 (1969 to 1972)	Anthony John Dixon (Bank Officer) Robyn Barhara Hannon (Spinster)	Vol 1110 Fol 249
14.1.1972 (1972 to 1983)	Reginald Alexander Clarke (Retired) Ivy Gwendolene Clark (Married Woman)	Vol 1110 Fol 249
17.2.1983 (1983 to 1987)	Ivy Gwendolene Clark (Widow)	Vol 1110 Fol 249
22.6.1987 (1987 to 1993)	Peter Maroun Masci	Vol 1110 Fol 249 Now 8/8043
20.1.1993 (1993 to 1994)	Liang Tsu Tsai Hwang Meei Hwa Tsai	8/8043
23.12.1994 (1994 to 2016)	Tsun Man Shih Lee Shei Hsia Shih	8/8043
25.2.2016 (2005 to Date)	# Romeciti Eastwood Pty Ltd	8/8043

Denotes current registered proprietor

Easements & Leases: - NIL

As regards Lot 9 D.P. 8043

Date of Acquisition and Term held	Registered Proprietor(s) & occupations where available	Reference to title at acquisition and sale
12.4.1916 (1916 to 1952)	Alfred berry (Salesman)	Vol 2658 Fol 99
19.12.1952 (1952 to 1960)	Bond Austin Farlow (Public Servant)	Vol 2658 Fol 99
19.2.1960 (1960 to 1962)	Leon Erikson (Civil Engineer)	Vol 2658 Fol 99
27.7.1962 (1962 to 1972)	Eric Wilfred King (Civil Engineer) Florence Emily King (Married Woman)	Vol 2658 Fol 99
17.7.1972 (1972 to 1985)	Eric Wilfred King (Civil Engineer)	Vol 2658 Fol 99
8.10.1985 (1985 to 1991)	Anthony Charles Candy Helen Candy	Vol 2658 Fol 99 Now 9/8043

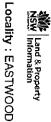
Search continued as regards Lot 9 D.P. 8043

Date of Acquisition and Term held	Registered Proprietor(s) & occupations where available	Reference to title at acquisition and sale
6.2.1991 (1991 to 2013)	Sung Hsiung Liu Lan-Yang Tsui Now Yang Tsui Lan Liu	9/8043
19.2.2013 (2013 to 2013)	Sung Hsiung Liu	9/8043
5.3.2013 (2013 to 2015)	Yung Yu Liu Yung Feng Liu	9/8043
17.12.2015 (2015 to 2016)	Sung Hsiung Liu	9/8043
25.2.2016 (2016 to Date)	# Romeciti Eastwood Pty Ltd	9/8043

Denotes current registered proprietor

Easements & Leases: - NIL

Yours Sincerely
James McDonnell
27 October 2016



Requested Parcel: Lot 1 DP 303787 Cadastral Records Enquiry Report

LGA: RYDE

Identified Parcel: Lot 1 DP 303787

County: CUMBERLAND

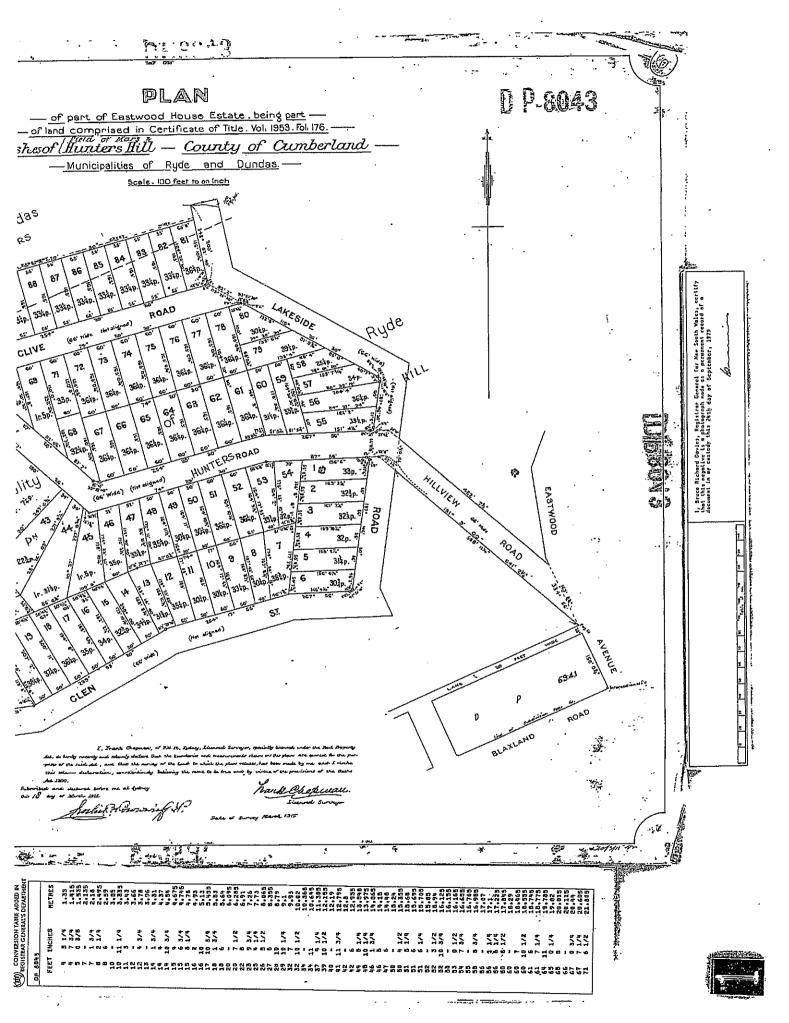
Parish: HUNTERS HILL

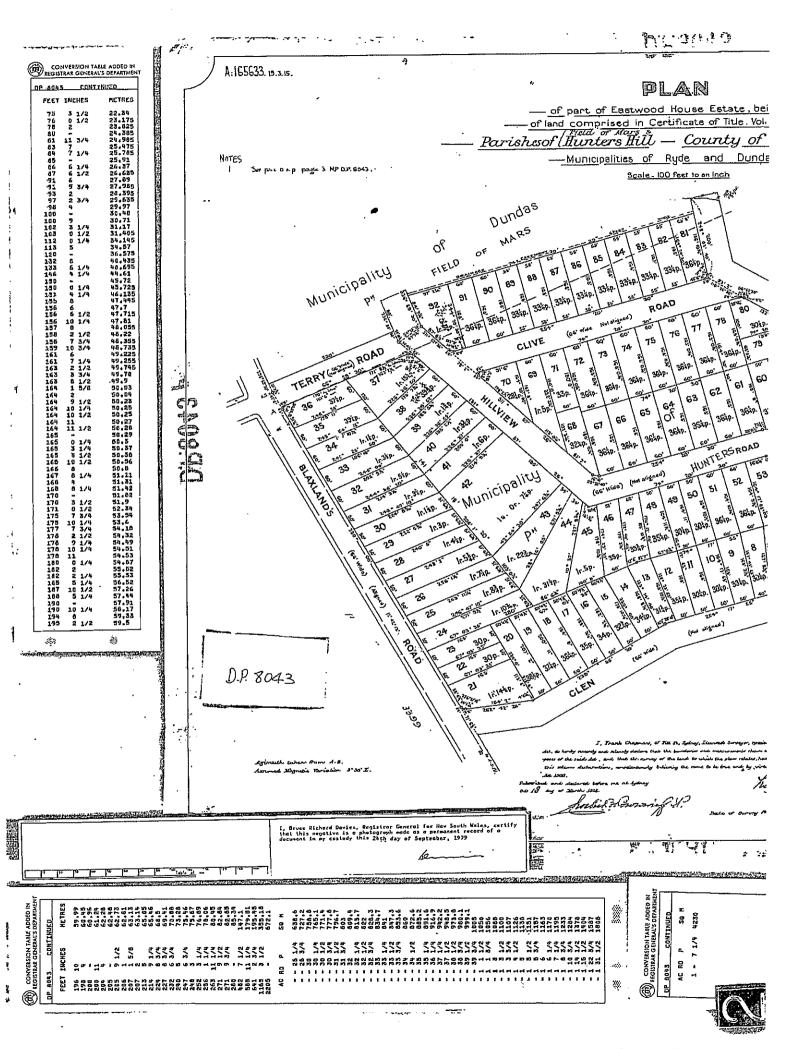
≥ 1084£ 90 DP 663281 663280 Copyright © Land and Property Information ABN: 84 104 377 806 А 17 6 OR YRUBETTAHE DP 345081 7 DP 363861 ç C የኒ U Copyright (c) Land and Property Information. Map Projection: MGA Zone 56 90 吊 ଚ LDP 546071 334393 DP 653173 œ Po 152025 \aleph 它 27 亩 DP 437267 GLEN ST 二 V This information is provided as a searching aid only. While every endeavour is made to ensure the current cadastral pattern is accurately reflected, the Registrar General cannot guarantee the information provided. For all ACTIVITY PRIOR to SEPT 2002 you must refer to the RGs Charting and Reference Maps. φ, ゟ 8 숤 67 DP 455478 DP 1146194 玄 47 66 끖 48 갓 HILLVIEW RD တ္တ 乊 P 49 787*606 9*0 9 64 76090T 9Q 5 SP 523 Š හු 9 귱 52 S S σ DP 10617 1 9 \mathcal{Z}_{2} 6 69 52 59 HILLVIEW LANE o, 7 DP 1138341 5 4 101 3 2 LAKESIDE RD SP 30108 HAVA AHT PROGRESS AVE DP 1181537 6 Page 1 of 3 GTA88E 90 Dρ 195₈₁ SP 17018

SP 2032

Report Generated 12:09:17 PM, 26 October, 2016

996149





SEARCH DATE

26/10/2016 12:24PM

FOLIO: 3/8043

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 3582 FOL 235

Number	Type of Instrument	C.T. Issue
	TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
	CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
0481481 0481482	TRANSFER MORTGAGE	EDITION 1
6341867 6341868	DISCHARGE OF MORTGAGE TRANSFER	EDITION 2
7958628	MORTGAGE	EDITION 3
8552220	MORTGAGE	EDITION 4
AJ343595	CHANGE OF NAME	EDITION E
A0343596	CHANGE OF NAME	EDITION 5
AJ361847	CAVEAT	
AK218972	WITHDRAWAL OF CAVEAT	
AK218975	MORTGAGE	EDITION 6
	O481481 O481482 6341867 6341868 7958628 8552220 AJ343595 AJ343596 AJ361847 AK218972 AK218973 AK218974	TITLE AUTOMATION PROJECT CONVERTED TO COMPUTER FOLIO O481481 TRANSFER O481482 MORTGAGE 6341867 DISCHARGE OF MORTGAGE 6341868 TRANSFER 7958628 MORTGAGE 8552220 MORTGAGE AJ343595 CHANGE OF NAME AJ343596 CHANGE OF NAME AJ361847 CAVEAT AK218972 WITHDRAWAL OF CAVEAT AK218973 DISCHARGE OF MORTGAGE AK218974 TRANSFER

*** END OF SEARCH ***

PSH-GROLLY-Eastwood

PRINTED ON 26/10/2016

Any entries preceded by an asterix do not appear on the current edition of the certificate of title.

Warning: the information appearing under notations has not been formally recorded on the Register.

Hazlett Information Services 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.



Ref:PS		twood /Sro.H	$I \cup I \cup I$			
	H-GROLLY-Eas	LACTOR Number	(U) +	RANSFER		A
		10V/0096/95		NANOFEN teal Property Act 1900		481481 Q
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(A)	LAND TRANSFE	RRED		.:		
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(B)	LODGED BY		L.T.O. Box	Name, Address or DX a	nd Telephone	
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•				KB-0		
				REFERENCE (max. 15	characters):	
(C)	TRANSFEROR		THE TRUSTERS	S.OF.THE.ROMAN.	CATHOLICCHURCHFORT	THE
()			ARCHDIOCESE			***********
(D)	acknowledges rec	eipt of the consideratio	n of \$320,000	0.00		
(D)		land specified above to			e simple	
(E)	subject to the following	owing ENCUMBRANCE	S 1	2.	3, .	
(F)	TRANSFEREE T					
(-)	INMIGIENCE	Т				
		I				i
		TS (s713 LGA)	wan no	rose from 1 TWTM	D DON 064 024 620	
(C)		(s713 LGA) TW		ALTY PTY LIMITE	D ACN 064 934 630	
(G)		(s713 LGA)		ALTY PTY LIMITE	D ACN 064 934 630	
•	We certify this de	(s713 LGA) TW (Sheriff) TENANC	Y:			
(G) (H)	_	(\$713 LGA) TW (Sheriff) TENANC aling correct for the pure	Y: poses of the Real	Property Act 1900.	D ACN 064 934 630 DATE	
•	Signed in my pres	(\$713 LGA) TW (Sheriff) TENANC aling correct for the pure	Y: poses of the Real who is personally	Property Act 1900.		
•	Signed in my pres	(Sheriff) TENANC aling correct for the pureence by the Transferor MON SEAL of THE TRUE OFFAIR CATHOLIC CHUE	Y: poses of the Real who is personally STRES 3CH	Property Act 1900.		
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(H)	Signed in my pres THE COM ON THE B FOOTHE B FOO	(STIBLGA) TW (Sheriff) TENANC aling correct for the pure sence by the Transferor MON SEAL of THE THU CHAPT CATHOLIC CHU! AND SIGNAL OF THE ACTION OF THE CATHOLIC CHU! CHAPT CATHOLIC CHU! CHU! CHAPT CATHOLIC CHU! CHU! CHAPT CATHOLIC CHU! CHU! CHU! CHAPT CATHOLIC CHU!	poses of the Real who is personally STEES ACH ONEY e SRS) Il	Property Act 1900. known to me. known to me. JAMES SOLICI NB: if ap	SOULOS Signature of Transference Signature of Transference	ecy Dr.

Req:R658021 /Doc:DL 6341868 /Rev:18-Nov-1999 /Sts:NO.OK /Pgs:ALL /Prt:27-Oct-2016 09:07 /Seq:1 of 1 Ref: PSH-GROLLY-Eastwood /Src:H TRANSFER 97-UII 026CN/0526/96 Licence: New South Wales Real Property Act 1900 Instructions for filling out Office of State Revenue use only this form are available NEW SOUTH WALES DUTY from the Land Titles Office 03-11-1999 0000144572-001 TRANSFER - AGT FOR SALE OF LAND DUTIABLE AMOUNT \$ \$\$\$\$\$\$\$\$4440,000,00 (A) LAND TRANSFERRED Show no more than 20 titles. 3/8043 If appropriate, specify the share or part transferred. (B) LODGED BY LTO Box Name, Address or DX and Telephone RODNEY SHIELDS & CO りし P. O. BOX 19 RANDWICK NEW 2031 REFERENCE (15 character maximum): #41/ 3954 TRANSFEROR K.I.D. REALTY PTY LIMITED ACN 064 934 630 acknowledges receipt of the consideration of \$1.00 and as regards the land specified above transfers to the transferee an estate in fee simple. Encumbrances (if applicable) l. **O481482** 3. TRANSFEREE TS KYU YOUNG LEE & BOCKHEY LEE (\$713 LGA) TW(Sheriff) (G) **TENANCY: JOINT TENANTS** 12 We certify this dealing correct for the purposes of the Real Property Act 1900 DATE & NOVOMBUL 1999 (H)Signed in my presence by the transferor who is personally known to me. LIMITE LIMITER Common Commun Seal Seal Name of Witness (BLOCK LETTERS) Address of Witness DIRECTUR SECRETARY Signed in my presence by the transferée who is personally known to me. Signature of Witness ULIAN MOVETTIE Name of Witness (BLOCK LETTERS) Signature of Transferee 175A AZIJON KOAD RANDWICK NB: if signed on the transferee's behalf by a solicitor or licensed Address of Witness conveyancer, show the signatory's full name in block letters. SOLICITOK Page 1 of 1 CHECKED BY (LTO use).

	SH-GROLLY-East Tollii. Vita Release: 6-1	New South Real Property	Wates Act 1900
	by this form for	Section 31B of the Real Property Act 1900 (RP Act) at the establishment and maintenance of the Re	al Property ANZIO7/TIN
	STAMP DUTY	ode available to any person for search upon paymer Office of State Revenue use only	nt of a fee, if any. Office of State Revenue (NSW) Client No: 1411509 3871 Duty: SLO Trans No: 25423-6
A)	TORRENS TITLE	3/8043	
(B)	LODGED BY	Collection	and Customer Account Number if any CODES T
		LEST Reference: B02700	1W
(C)	TRANSFEROR	SARAH BOCKHEY LEE and KENNY KYU Y	COUNG LEE
D) E)	CONSIDERATION ESTATE	The transferor acknowledges receipt of the consider the abovementioned land transfers to the transferor	
F)	SHARE TRANSFERRED	5 P7 9 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
G)		Encumbrances (if applicable):	
H)	TRANSFEREE	ROMECITI EASTWOOD PTY LIMITED ACK	N 604 034 808
I)		TENANCY:	
	DATE	02.2016	
J)		eligible witness and that the transferor g in my presence.	Certified correct for the purposes of the Real Property Act 1900 by the transferor.
	Signature of with	ess: Bolind	Signature of transferor:
	Name of witness Address of witne		
			Certified correct for the purposes of the Real Property Act 1900 on hehalf of the transferce by the person whose signature appears below
			Signature:
			Signatory's name: Signatory's capacity:

eNOS ID No. 1006165 Full name: Amber lage. Signature: Signature: * s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation.

ALL HANDWRITING MUST BE IN BLOCK CAPITALS Page 1 of 1 1303

(K) The transferee's agent

certifics that the eNOS data relevant to this dealing has been submitted and stored under

FOLIO: 3/8043

SEARCH DATE TIME EDITION NO DATE 26/10/2016 12:32 PM 6 13/2/2016

LAND

LOT 3 IN DEPOSITED PLAN 8043 AT EASTWOOD LOCAL GOVERNMENT AREA RYDE PARISH OF FIELD OF MARS COUNTY OF CUMBERLAND

TITLE DIAGRAM DP8043

FIRST SCHEDULE

ROMECITI EASTWOOD PTY LTD

(T AK218974)

SECOND SCHEDULE (3 NOTIFICATIONS)

- RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- B69446 COVENANT
- 3 AK218975 MORTGAGE TO PKS ADMIN PTY LIMITED, K F INVESTMENTS PTY LIMITED, LADAY PTY LIMITED, FALK & CO PTY LIMITED, DEIRDRE LYN LOVE, KEITH LOVE, MIKE AND MARJ THOMAS PTY LTD, PBS INVESTING PTY LIMITED & STANLEY PAUL ROGERS

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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SEARCH DATE

26/10/2016 12:25PM

FOLIO: 4/8043

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 7496 FOL 140

Number	Type of Instrument	C.T. Issue
	TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
	CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
U937337	DISCHARGE OF MORTGAGE	EDITION 1
6141174	NOTICE OF DEATH	EDITION 2
AB887280	TRANSMISSION APPLICATION	EDITION 3
AC513193 AC513194	TRANSFER TRANSFER	EDITION 4
AC762597	MORTGAGE	EDITION 5
		EDITION 6
	DISCHARGE OF MORTGAGE TRANSFER MORTGAGE	EDITION 7
AJ361848	CAVEAT	
AK218928 AK218929	WITHDRAWAL OF CAVEAT DISCHARGE OF MORTGAGE TRANSFER MORTGAGE	EDITION 8
	U937337 6141174 AB887280 AC513193 AC513194 AC762597 AE231570 AE231571 AE231572 AI765958 AI765959 AI765960	TITLE AUTOMATION PROJECT CONVERTED TO COMPUTER FOLIO U937337 DISCHARGE OF MORTGAGE 6141174 NOTICE OF DEATH AB887280 TRANSMISSION APPLICATION AC513193 TRANSFER AC513194 TRANSFER AC762597 MORTGAGE AE231570 DISCHARGE OF MORTGAGE AE231571 TRANSFER AE231572 MORTGAGE AI765958 DISCHARGE OF MORTGAGE AI765959 TRANSFER AI765960 MORTGAGE AJ361848 CAVEAT AK218927 WITHDRAWAL OF CAVEAT AK218928 DISCHARGE OF MORTGAGE AK218929 TRANSFER

*** END OF SEARCH ***

PSH-GROLLY-Eastwood

PRINTED ON 26/10/2016

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Ref:PSH-GROLLY-Eastwood /Src:H

Form: 03TA Release: 2,0

www.lands.nsw.gov,au

TRANSMISSI APPLICATION



New South Wales Section 93 Real Property Ac AB887280N

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any. STAMP DUTY Office of State Revenue use only (A) LAND Torrens Title 4/8043 (B) REGISTERED Number Torrens Title DEALING (C) LODGED BY Document Name, Address or DX and Telephone CODE Collection HAZ (ETTS Box 38114 Reference: NORRIS STOPS (D) DECEASED PATRICK JOHN CARR REGISTERED PROPRIETOR (E) APPLICANT KATHLEEN MARY HAWDON & TIMOTHY JOSEPH CARR (F) I, the applicant, being entitled as Executors _____ of the estate of the deceased registered proprietor (who died on 30 June 2005) pursuant to probate No. 116346/05 to them granted on 17 October 2005 and the second of the second o (a certified copy of which is lodged herewith) apply to be registered as the proprietor of the estate or interest of the deceased registered proprietor in the abovementioned land. 3 November 2005 I certify that the person(s) signing opposite, with whom Certified correct for the purposes of the Real I am personally acquainted or as to whose identity I am Property Act 1900 by the Applicant. otherwise satisfied, signed this instrument in my presence. Signature of witness: (a. #awdon) Signature of Applicant: Name of witness: A.HAWDON. Address of witness: 2 JAMES ST. CHATSWOOD (H) CONSENT OF EXECUTOR, ADMINISTRATOR OR TRUSTEE WE I KATHLEEN MARY HAWDON & TIMOTHY JOSEPH CARR executor of the will of the deceased registered proprietor, consent to this application. Signature of witness: A Hawden Signature of executor of the will: Name of witness: A. HAWDON Address of witness: 2 JAMES ST. CHATSWOOD ALL HANDWRITING MUST BE IN BLOCK CAPITALS. Office use only-LAND AND PROPERTY INFORMATION DIVISION Evidence sighted/sighted and returned: Page 1 of

Form: OIT Release: 3.0

www.lands.nsw.gov.au (i)

TRANSFER

New South Wales Real Property Act 1900



PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the

AC513193X

			o any person for search upon		NEW SOUTH WALES	
	STAMP DUTY		ite Revenue use only		31-07-2006 SECTION 63(C) DUTY	0003629270-001 \$ *************10.00
	70005U0 VIZ. 5					107-144
Α)	TORRENS TITLE	4/8043				
B)	LODGED BY	Document Collection Box	Name, Address or DX and T	, 	5 a-t 7W	CODES
		381H	Reference: N97-0P	: CARR		TW (Sheriff)
C)	TRANSFEROR	ТІМОТНҮ	JOSEPH CARR and KATH	ileen mary hawdon		
D)	CONSIDERATION	The transferor	acknowledges receipt of the c	consideration of \$ ENT	ITLED PURSUANT	To and as regards
E)			ified above transfers to the tra			705 . and as regards
F)	SHARE TRANSFERRED	• • • •	<u>.</u>			
G)		Encumbrance	s (if applicable):			
H)	TRANSFEREE	PATRICK MARK STE	ICK CARR,KATHLEEN MA FREDERICK CARR, DANN PHEN CARR Tenants in Common in	NY MICHAEL CARR,		CARR,
	DATE ZP	July.				
	I am personally ac	quainted or as	ng opposite, with whom to whose identity I am instrument in my presence.		ct for the purposes of the 1900 by the transferor.	ne Real
	Signature of witne	ss:		Signature of tr		
	Name of witness: Address of witness	S:		FOR EXE SEE 1	ECUTION OF T ANNEXURE	KANSFEROR "A"
				Certified correct for Act 1900 by the p	or the purposes of the Reerson whose signature a	leal Property appears helow.
			\	Signature:		
				Signatory's name: Signatory's capaci		

ANNEXURE "A"

Certified correct for purposes of the Real Property Act 1900 by the Transferor.

I certify that the person signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied signed this instrument in my presence

Signature of witness:

Signature of Applicant:

KATHLEEN MARY HAWDOWN

Name of witness:
Address of Witness

TIMOTHY JOHN STOPS SUITE 109, 160 ROWE ST. EASTWOOD NSW 2122 SOLICITOR

I certify that the person signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied signed this instrument in my presence

Signature of witness

Signature of Applicant: TIMOTHY JOSEPH CARR

Name of witness:

Address of Witness:TIMOTHY JOHN STOPS SUITE 109, 160 ROWE ST. EASTWOOD NSW 2122 SOLICITOR

		TRANSFER New South Wales Real Property Act 1900 Section 31B of the Real Property Act 1900 (RP Act) authorises to the establishment and maintenance of the Real Proper nade available to any person for search upon payment of a fee, it any Office of State Revenue use only	
	STAMP DUTY	Office of State Revenue use only Clica No: 90346503 Duty: 52-90 Trans No: Aset dotals:	1463 3642520
(A)	TORRENS TITLE	4/8043	
(B)	LODGED BY	Document Collection Box HAZ COTTS 123257W Reference: NSTOP: CARR	CODES T TW (Sheriff)
(C)	TRANSFEROR	LES PATRICK CARR	
(D)	CONSIDERATION	The transferor acknowledges receipt of the consideration of \$ 111,430.00	and as regards
(E)	ESTATE	the land specified above transfers to the transferee an estate in fee simple	J
(F)	SHARE TRANSFERRED		
(G)		Encumbrances (if applicable):	
(H)	TRANSFEREE	KATHLEEN MARY HAWDON, TIMOTHY JOSEPH CARR, PATRICK FREDERICK CA DANNY MICHAEL CARR, TERRENCE KEVIN CARR, MARK STEPHEN CARR	RR,
(l)		TENANCY: Tenants in Common in Equal Shares	T /-
	DATE 28	JULY 2006	
	l am personally acc	person(s) signing opposite, with whom cquainted or as to whose identity I am d, signed this instrument in my presence. Certified correct for the purposes of the R Property Act 1900 by the transferor.	eal
	Signature of witnes	ess: Signature of transferor:	
	Name of witness: Address of witness		
		Contilled correct for the purposes of the Real	Property

Certified correct for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Signatory's name: Signatory's capacity:

TIMOTHY JOHN STOPS transferee's solicitor

Req:R660206 /Doc:DL AE231571 /Rev:25-Sep-2008 /Sts:SC.OK /Pgs:ALL /Prt:27-Oct-2016 11:26 /Seq:1 of 1 Ref:PSH-GROLLY-Eastwood /Src:H RANSFER Form: OIT Release: 3.0 **New South Wales** www.lands.nsw.gov.au AE231571M Real Property Act 1900 PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the Real Property Act 1900 (RP Act) authorises to the section 31B of the by this form for the establishment and maintenance of the Real Property Act Register Section 968 RP Act requires that the Register is made available to any person for search upon payment of a fee, if any. Se NSW Treasury STAMP DUTY Office of State Revenue use only Client No: 90846503 1463 \$3740 Trans No. 5149 1043 (A) TORRENS TITLE 4/8043 (B) LODGED BY Document Name, Address or DX and Telephone CODES (63 Collection Box LLPN: 123835G 236 Reference: (Sheriff) (C) TRANSFEROR DANNY MICHAEL CARR (D) CONSIDERATION The transferor acknowledges receipt of the consideration of \$ 150,000.00 the land specified above transfers to the transfered an estate in fee simple (E) ESTATE SHARE **TRANSFERRED** (G) Encumbrances (if applicable): __ TRANSFEREE KATHLEEN MARY HAWDON, TIMOTHY JOSEPH CARR, PATRICK FREDERICK CARR. TERRENCE KEVIN CARR & MARK STEPHEN CARR (1) TENANCY: Tenants in Common in Equal Shares (J) I certify that the person(s) signing opposite, with whom Certified correct for the purposes of the Real I am personally acquainted or as to whose identity I am Property Act 1900 by the transferor. otherwise satisfied, signed this instrument in my presence. Signature of witness: Signature of transferor: Name of witness: Address of witness: TIMOTHY JOHN STOPS SUITE 109, 160 ROWE-ST EASTWOOD NSW 2122 SOLICITOR Certified correct for the purposes of the Real Property Act 1900 by the person whose signature appears below.

ALL HANDWRITING MUST BE IN BLOCK CAPITALS. 0507

DEPARTMENT OF LANDS
LAND AND PROPERTY INFORMATION DIVISION

TIMOTHY JOHN STOPS

transferee's solicitor

Signature

Signatory's name:

Signatory's capacity:

•			-2014 /Sts;NO,C	K /Pgs:ALL /Prt:27-Oct	-2016 11:27 <i> </i>	Seq:1 of 4	•
Ref:PS	H-GROLLY-Eas	lwood /Src:H	T	RANSFER			
```	Release: 6:1		ם	New South Wates			
•	PRIVACY NOTE	: Section 31B of the Rea		teal Property Act 1900 00 (RP Act) authorises the	A T	7/ E0E0	·····
	by this form f	or the establishment a	and maintenance	e of the Real Property		765959	t
	STAMP DUTY			ipon payment of a fee, if a		Mice of State Reveni ISW Treasury	īG
	STAINT DOTT	Office of State Reve	enue use only		Client No:	2931676	3242
					Duty: \$10	)-00 Ten 13761	3629-00
					Asst details	•	\
(A)	TORRENS TITLE	4/8043					
(1.5)	(1)	1,0013					
(B)	LODGED BY	Document Name.	Address of DV.	Taloniana and Cartan			I annes
		Collection Name,	1 Homebush	Talpphone, and Customer			CODES
		Box	Rhodes NS	N 2138	M: 12201	13	
		45A					T\n/
(0)	TRANSFEROR	Refere		468 1502			IVV
(C)	TRANSFEROR	Kathleen Mary Terrence Kevir	HAWDON, Tim CARR and M	othy Joseph CARR, ark Stephen CARR	Patrick F	Frederick CARR	,
(D)	CONSIDERATION	L		the consideration of \$ 2,	500,000.00	) .	_and as regards
(E)	ESTATE			he transferee an estat			_and as regates
(F)	SHARE TRANSFERRED				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
(G)		Encumbrances (if app	licable):			<del>\</del>	·
(H)	TRANSFEREE	RAPHAEL SHIN E		PTY LIMITED ACN	103 452 4	173 ·	
		i					ĺ
(1)		TENANCY:			크		
	DATE	The state of the s					
<b>(J)</b>	I certify I am an signed this deali	eligible witness and thang in my presence.	t the transferor	Certified co	orrect for the p c transferor.	urposes of the Real	Property Act
	[See note* below					JRE "A"	
					st amed		
	Signature of with	iess:		Signature o	of transferor:		
					,		
	Name of witness Address of witne						
				FOR ADA	SITIONIAL SIN	GNATURES	
				SOF AND	<del>JEXULE 14</del>	•	
				Certified con 1900 on beh	rrect for the pu	rposes of the Real F sferce by the person	roperty Act
				signature ap	pears below.	stored by the person	whose
				Signature:			
				Signature.		Bolow	str
				Signatory's		J	
				Signatory's	capacity:	Ben Stuart JOHN solicitor	STON
(K)	The transfer	ee's solicitor ▼	certifies that th	c eNOS data relevant to t	his dealing bar	s heen submitted and	ctored under
	eNOS ID No. 6	20827 Full	name: Ben St	uart JOHNSTON	Sig	nature:	stewer.
	* s117 RP Act red		e known the sign	atory for more than 12 m			ocumentation.
	ALL HANDWRITING	MUST DE IN BLOCK CAPITA	LS Pa	age 1 of 4		0	1303

ANNEXURE "A" TO TRANSFER BETWEEN KATHLEEN MARY HAWDON, TIMOTHY JOSEPH CARR, PATRICK FREDERICK CARR, TERRENCE KEVIN CARR AND MARK STEPHEN CARR AS TRANSFERORS AND RAPHAEL SHIN ENTERPRISES PTY LIMITED (ACN 103 452 473) AS TRANSFEREE DATED 2014 IN RESPECT TO FOLIO ID 4/8043

Certified correct for the purposes of the Real Property Act 1900 by the transferors

I certify that I am an eligible witness and that the first named transferor signed this dealing in my presence [see note below]

a. Hawdox SIGNATURE OF WITNESS

KATHLEEN MARY HAWDON
Signature of transferor

ALAN RAYMOND HAWDON FULL NAME OF WITNESS

2/58 OSBORNE ROAD

MANLY. 2095

ADDRESS OF WITNESS

I certify that I am an eligible witness and that the second named transferor signed this dealing in my presence [see note below]

SIGNATURE OF WITNESS

TIMOTHY JOSEPH CARR
Signature of transferor

CES PATRICK CARK

FULL NAME OF WITNESS

1/39MEADOW CES

MEADOVIANK

ADDRESS OF WITNESS

Page 2 of 4

s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation

I certify that I am an eligible witness and that the

2/58 OSBORNE ROAD

MANLY 2095

ADDRESS OF WITNESS

third named transferor signed this dealing in my presence [see note below] R. Hawden PATRICK FREDERICK CARR Signature of transferor ALAN RAYMOND HAWDON **FULL NAME OF WITNESS** 2/58 OSBORNE ROAD MANLY 2095 ADDRESS OF WITNESS I certify that I am an eligible witness and that the fourth named transferor signed this dealing in my presence [see note below] SIGNATURE OF WITNESS TERRENCE KEVIN CARR Signature of transferor ALAN RAYMOND HAWDON FULL NAME OF WITNESS

Page 3 of 4

s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation

Req:R660210 /Doc:DL Ai765959 /Rev:30-Jul-2014 /Sts:NO.OK /Pgs:ALL /Prt:27-Oct-2016 11:27 /Seq:4 of 4 Ref:PSH-GROLLY-Eastwood /Src:H

I certify that I am an eligible witness and that the fifth named transferor signed this dealing in my presence [see note below]

SIGNATURE OF WITNESS

MARK STEPHEN CARR Signature of transferor

Mean

FULL NAME OF WITNESS

Joseph Pater Dominello NSW PC 1233
Bond & Bond Solicitors
Suite 2D, Level 2
16-18 Bridge Street Epping NSW 2121

ADDRESS OF WITNESS

## Page 4 of 4

s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation

______

FOLIO: 4/8043

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LAND

____

LOT 4 IN DEPOSITED PLAN 8043

AT EASTWOOD

LOCAL GOVERNMENT AREA RYDE

PARISH OF FIELD OF MARS COUNTY OF CUMBERLAND

TITLE DIAGRAM DP8043

ROMECITI EASTWOOD PTY LTD

FIRST SCHEDULE

-----

(T AK218929)

SECOND SCHEDULE (3 NOTIFICATIONS)

______

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 B15944 COVENANT
- 3 AK218930 MORTGAGE TO PKS ADMIN PTY LIMITED

NOTATIONS

_____

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Any entries preceded by an asterix do not appear on the current edition of the certificate of title.

Warning: the information appearing under notations has not been formally recorded on the Register.

Hazlett Information Services 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.



_____

SEARCH DATE

-----26/10/2016 12:26PM

FOLIO: 5/8043

_____

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 4352 FOL 10

Recorded	Number	Type of Instrument	C.T. Issue
18/2/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
18/7/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
22/2/1990	Y856163	TRANSMISSION APPLICATION	EDITION 1
26/5/1995	0261739	TRANSMISSION APPLICATION	EDITION 2
22/9/1995	0554552	TRANSFER	EDITION 3
15/4/1999	5752150	DEPARTMENTAL DEALING	
10/4/2006 10/4/2006	AC230307 AC230308	CHANGE OF NAME MORTGAGE	EDITION 4
25/5/2013 25/5/2013		DISCHARGE OF MORTGAGE MORTGAGE	EDITION 5
20/2/2015	AJ274703	CAVEAT	
13/2/2016 13/2/2016 13/2/2016 13/2/2016	AK218469	WITHDRAWAL OF CAVEAT DISCHARGE OF MORTGAGE TRANSFER MORTGAGE	EDITION 6

*** END OF SEARCH ***

PSH-GROLLY-Eastwood

PRINTED ON 26/10/2016

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	660238 /Doc:DL O261739 /Rev:08-M 6H-GROLLY-Eastwood /Src:H 97-03TA	B AF	NSMISSION DELICATION Non 93 Read Property Act 1900  Office of State Revenue use only
(A)	LAND Show no more than 20 References to Title.	Folio	Identifier 5/804 <b>3</b>
(B)	REGISTERED DEALING If applicable.		
(C)	LODGED BY	L.T.O. Box	Name, Address or DX and Telephone  R. A. DAVIES SOLICITOR 77 ROWE ST., EASTWOOD 2122 D.X. 23509 EASTWOOD. PH: 858 1311 REFERENCE (max. 15 characters): 235U
(D)	DECEASED REGISTERED PROPRIETOR	ANITA	FRANCES ROSSETTO
(E)	APPLICANT	TA M	ARIA FRANCES ADORINI
(F)	died on .1.3thFebruary 199 on 4th.April 199.5	5) pursuant to P . toMAR .e estate or interest	of the will/estate of the Deceased Registered Proprietor (who probate/betters at Administration No. 104.7.5.9/95
	Signature of Witness  Name of Witness (BLOCK LETTERS)	who is personally	known to me.

Ref:PS	H-GROLLY-Eastwood /Src:H
	CONSENT OF EXECUTOR OR ADMINISTRATOR
(H)	
	I, Executor of the will /Administrator of the estate
	of the Deceased Registered Proprietor, hereby consent to this application.
1 1	
İ	Signature of Witness
ļ	Name of Witness (BLOCK LETTERS)
	1144 5. 1144 5. 1144 5. 1145 5. 1145 5. 1145 5. 1145 5. 1145 5. 1145 5. 1145 5. 1145 5. 1145 5. 1145 5. 1145 5.
1	Address of Witness Signature of Executor/Administrator

Reg:R660238 /Doc:DL O261739 /Rev:08-Mar-2010 /Sts:OK.OK /Pgs:ALL /Prt:27-Oct-2016 11:27 /Seg:2 of 2

#### INSTRUCTIONS FOR COMPLETION

STAMP DUTY: If the Applicant is a devisee, beneficiary, next-of-kin or otherwise beneficially entitled or if the Deceased Registered Proprietor died prior to 31 December 1981 the application must be presented to the Office of State Revenue prior to lodgment at the Land Titles Office.

- 1. The Application must be completed clearly and legibly in permanent, dense, black or dark blue non-copying ink. If using a dot-matrix printer the print must be letter-quality.
- 2. Do not use an eraser or correction fluid to make alterations; rule through rejected material. Initial each alteration in the lefthand margin.
- 3. If the space provided at any point is insufficient, you may annex additional pages. These must be the same size as the form; paper quality, colour. etc, must conform to the requirements set out in Land Titles Office Information Bulletin No. 19. All pages of any annexure must be signed by the person executing the Application and any attesting witness.
- The following instructions relate to the marginal letters on the application.

#### (A) LANE

Show the relevant Reference to Title. If there are more than 20 show none in this panel. Place ALL of them on an annexure (see 3 above) with 20 per sheet.

#### (B) REGISTERED DEALING

Show the registration number of any lease, mortgage or charge in regard to which the Applicant is applying to be registered as a proprietor.

#### (C) LODGED BY

This section relates to the person or firm lodging the Application at the Land Titles Office.

Reference (max. 15 characters) This is optional. Any slashes, dots, blank spaces, etc, will be counted as characters.

### (D) DECEASED REGISTERED PROPRIETOR

Show the name in full. Address and occupation need not be shown.

#### (E) APPLICANT

Show the name in full. Address and occupation need not be shown.

#### (F) WILL/ESTATE, etc.

Amend "will/estate", "Probate/Letters of Administration" and "Land/Registered Dealing" as appropriate.

In the relevant spaces show the capacity (executor, devisee, etc.) in which the Applicant is entitled to apply, the number and date of grant of the Probate or Letters of Administration pursuant to which the application is made, and the name of the person to whom the grant was made.

#### (G) EXECUTION

General The application must be executed by or on behalf of the Applicant.

By the Applicant Personally The application must be signed in the presence of an adult witness who is not an Applicant and who knows the party executing personally. The witness should complete the appropriate section of the application.

By the Applicant's Attorney The Power of Attorney must be registered in the General Register of Deeds at the Land Titles Office. The execution should take the form, "AB by her attorney XY [full name] pursuent to Power of Attorney Book 1234 Number 567".

Under Authority If the application is made pursuant to any statutory, judicial or other authority, except a Power of Attorney (see above), the nature of the authority should be disclosed.

By a Corporation under Seal The execution should include a statement that the seal has been properly affixed, for example, "... pursuant to a resolution of the board of directors ...". Alternatively, all those attesting the affixing of the seal must state their position in the corporation.

### (H) CONSENT OF EXECUTOR OR ADMINISTRATOR

This is required only where the Applicant claims to be entitled other than as executor, administrator or trustee.

The completed Application must be lodged by hand at the LAND TITLES OFFICE, Queen's Square, Sydney, together with the Certificate of Title, the probate or letters of administration (or a copy thereof certified by a solicitor to be a true copy) and a completed Notice of Sale.

If you have any questions about filling out the form, please call 228-6666 and ask for our Customer Services Branch.

Req:R660251 /Doc: DL AC230307 /Rev:10-Apr-2006 /Sts:NO.OK /Pgs:ALL /Prt:27-Oct-2016 11:28 /Eaq:1 of 1

Ref:PSH-GROLLY-Eastwood /Src:H

Fornt: 10CN
Release: 1.1

www.lpi.nsw.com.au

Rew South Wales
Real Property Act 1900

AC2303071

		PRIVACY NOTE: this information is legally re	equired and will become թաւ օր առ բանում record	,,,,,
(A)	LAND	Torrens Title 5/8043		
(B)	REGISTERED DEALING	Number	Torrens Title	
(C)	LODGED BY	Delivery Name, Address or DX and Telesox	ephone	CODE
		45 A Reference: 06 H K	National Australia Bank Limited 197 Prospect Highway Seven Hills New 2147 Tel:402) 8825 0898	CN
(D)	REGISTERED PROPRIETOR	Hsin Kuel Yu		
(E)	NEW NAME	Hsin Kuei Yu		
(F) (G)	land and re	proprietor referred to above, apply to have gistered dealing LARATION BY THE APPLICANT	my new name recorded in the Register in resp	pect of the above
	l <u>Hsin Kuei</u>			
	solemnly and sin	cerely declare that—		
		ical with the registered propri	letor referred to above.  corded at original regi:	_
	I make this solem 1900.		ame to be true and by virtue of the provisions of the	
		bed at KASTWOOD	in the State of New South Wales	
		FEBRUARY 2006 in the presence of-		* * * ********************************
	\- <del></del>	ess: Cline Rwest	Signature of applicant:	
	Name of witness: Address of witnes	Diane Lesley West	- 科教	
	Qualification of v	\		

_____

FOLIO: 5/8043

_____

LAND

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LOT 5 IN DEPOSITED PLAN 8043
AT EASTWOOD
LOCAL GOVERNMENT AREA RYDE
PARISH OF FIELD OF MARS COUNTY OF CUMBERLAND
TITLE DIAGRAM DP8043

FIRST SCHEDULE

ROMECITI EASTWOOD PTY LTD

(T AK218469)

SECOND SCHEDULE (3 NOTIFICATIONS)

______

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 A295362 COVENANT
- 3 AK218470 MORTGAGE TO PKS ADMIN PTY LIMITED & NORMA SMITHERS

NOTATIONS

_____

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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SEARCH DATE

26/10/2016 12:27PM

FOLIO: 6/8043

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First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 3338 FOL 151

Recorded	Number	Type of Instrument	C.T. Issue
18/2/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
16/7/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
30/9/1993 30/9/1993		DISCHARGE OF MORTGAGE MORTGAGE	EDITION 1
8/3/2002	8420049	TRANSFER OF MORTGAGE	EDITION 2
15/1/2004	AA329866	TRANSFER OF MORTGAGE	EDITION 3
21/3/2004	AA501351	DEPARTMENTAL DEALING	
15/5/2014	AI580195	DEPARTMENTAL DEALING	
16/12/2014	AJ118832	DEPARTMENTAL DEALING	
20/2/2015	AJ274704	CAVEAT	
13/2/2016	AK219198 AK219199 AK219200 AK219201	WITHDRAWAL OF CAVEAT DISCHARGE OF MORTGAGE TRANSFER MORTGAGE	EDITION 4

*** END OF SEARCH ***

PSH-GROLLY-Eastwood

PRINTED ON 26/10/2016

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______

FOLIO: 6/8043

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LAND

____

LOT 6 IN DEPOSITED PLAN 8043

AT EASTWOOD

LOCAL GOVERNMENT AREA RYDE

PARISH OF FIELD OF MARS COUNTY OF CUMBERLAND

TITLE DIAGRAM DP8043

FIRST SCHEDULE

ROMECITI EASTWOOD PTY LTD

(T AK219200)

SECOND SCHEDULE (3 NOTIFICATIONS)

______

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 A829721 COVENANT
- 3 AK219201 MORTGAGE TO NORMA SMITHERS & KEITH SMITHERS

NOTATIONS

_____

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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SEARCH DATE

26/10/2016 12:27PM

FOLIO: 7/8043

_____

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 3793 FOL 5

Recorded	Number	Type of Instrument	C.T. Issue
16/2/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
12/7/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
23/8/1990		AMENDMENT: PARISH-COUNTY	
27/4/1992 27/4/1992 27/4/1992	E412053	DISCHARGE OF MORTGAGE CHANGE OF NAME MORTGAGE	EDITION 1
14/8/1995	0453924	DISCHARGE OF MORTGAGE	EDITION 2
29/11/2005 29/11/2005	AB946981 AB946982	TRANSFER MORTGAGE	EDITION 3
5/11/2007 5/11/2007	AD538695 AD538696	DISCHARGE OF MORTGAGE MORTGAGE	EDITION 4
20/2/2015	AJ274705	CAVEAT	
25/2/2016 25/2/2016		WITHDRAWAL OF CAVEAT DISCHARGE OF MORTGAGE TRANSFER MORTGAGE	EDITION 5

*** END OF SEARCH ***

PSH-GROLLY-Eastwood

PRINTED ON 26/10/2016

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:P5H	ODOLLY E	10. 11
	-GROLLY-Eastw Form: 01T Release: 2.1 www.lpi.nsw.go	TRANSFER
	www.ipi.itsw.go	Real Property Act 1900 PRIVACY NOTE: this information is legally required and w AB946981E
	STAMP DUTY	OFFICE STATE REPORT OF THE SUUTH WHILES DUTT  OFFICE STATE STATE REPORT OF THE SUUTH WHILES DUTT  OFFICE STATE STA
(A)	TORRENS TITLE	Folio Identifier 7/8043
(B)	LODGED BY	Delivery Box CHURCH & GRACE LEVEL 3, RESERVE BANK BUILDING 65 MARTIN PLACE SYDNEY NSW 2000 Reference: 5 177 b R・ル TELEPHONE: 9233 1155 FAX: 9221 677と (Sheriff)
(C)	TRANSFEROR	KAMAL AHMED KHURSHED & SALLY ANN KHURSHED
(D)	CONSIDERATION	The transferor acknowledges receipt of the consideration of \$ 800,000.00 and as regards
(E)	ESTATE	the land specified above transfers to the transferee an estate in fee simple
(F)	SHARE TRANSFERRED	
(G) (H)	TRANSFEREE	Encumbrances (if applicable):
(I) (J)	I am personally a	TENANCY: Joint Tenants  27/10/2005  person(s) signing opposite, with whom acquainted or as to whose identity I am act, signed this instrument in my presence.  Certified correct for the purposes of the Real Property Act 1900 by the transferor.
	Signature of witness: Address of witness:  (MAR)	Signature of transferon.  Signature of transferon.  Signature of transferon.
		Signature:

______

FOLIO: 7/8043

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LAND

____

LOT 7 IN DEPOSITED PLAN 8043
AT EASTWOOD
LOCAL GOVERNMENT AREA RYDE
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND

FIRST SCHEDULE

_____

ROMECITI EASTWOOD PTY LTD

TITLE DIAGRAM DP8043

(T AK232182)

SECOND SCHEDULE (3 NOTIFICATIONS)

_____

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 B248878 COVENANT
- 3 AK232185 MORTGAGE TO PERPETUAL NOMINEES LIMITED

NOTATIONS

_____

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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a

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





NEW SOUTH WALES

Application No. 15260 Prior Title Volume 3098 Folio 217



11100 Fot 249

Edition issued 23-7-1969 1473419

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.

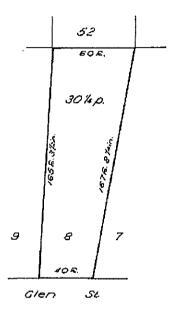
Wilness S. Shirchey

Registrar General.



PLAN SHOWING LOCATION OF LASTE AUTO FOLIO

ID



<u>Scale: 50 feet to one inch</u>

### ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 8 in Deposited Plan 8043 in the Municipality of Ryde Parish of Hunters Hill and County of Cumberland being part of Portion 54 granted to John Love on 14-3-1795.

#### FIRST SCHEDULE

CATHERINE ANN AND of Eastwood, Widow.

### SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

2. Covenant created by Transfer No. A610422p

Registrar General

WARNING THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE

SH-GROLLY-Eastwood /Src:H)	Vol. 11100 Fol 249
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SECOND SCHEDULE (continued) PARTICULARS  AUTO FOLIO	FIRST SCHEDULE (continued)  FIRST SCHEDULE (continued)  FIRST SCHEDULE (continued)  FIRST SCHEDULE (continued)
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	ENTERED Signature of Registrar-General 114
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SEARCH DATE

26/10/2016 12:28PM

FOLIO: 8/8043

First Title(s): SEE PRIOR TITLE(S) Prior Title(s): VOL 11100 FOL 249

Recorded	Number	Type of Instrument	C.T. Issue
21/8/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
27/10/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
26/9/1991	Z948359	MORTGAGE	EDITION 1
20/1/1993 20/1/1993	I60458 I60459	DISCHARGE OF MORTGAGE TRANSFER	EDITION 2
21/4/1993	1271034	MORTGAGE	EDITION 3
23/12/1994 23/12/1994	U896753 U896754	DISCHARGE OF MORTGAGE TRANSFER	EDITION 4
20/2/2015	AJ274706	CAVEAT	
3-, 3, 3, 1	AK241490 AK232183	WITHDRAWAL OF CAVEAT TRANSFER	
25/2/2016	AK232185	MORTGAGE	EDITION 5

*** END OF SEARCH ***

PSH-GROLLY-Eastwood

PRINTED ON 26/10/2016

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Req:R660703 /Doc:DL U896754 /Rev:16-Mar-2010 /Sts:OK.SC /Pgs:ALL /Prt:27-Oct-2016 11:55 /Seq:1 of 1				
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(A)	Show no more than 20 References to Title.	FI: 8/8043		
	If appropriate, specify the sbare transferred.			
(B)	LODGED BY	L.T.O. Box Name, Address or DX and Telephone CCCS		
		REFERENCE (max. 15 characters): PC 'Shih		
(C)	TRANSFEROR .	Liang Tsu TSAI and Hwang Meei Hwa TSAI		
(D)	(D) acknowledges receipt of the consideration of \$3.09,000.00 and as regards the land specified above transfers to the Transferee an estate in fee simple			
(E)	subject to the following ENCUMBRANCES	<b>1. 2. 3.</b>		
(F) (G)	TRANSFEREE	Tsun Man SHIH and Lee Shei Hsia SHIH  Joint Tenants		
(H) We certify this dealing correct for the purposes of the Real Property Act, 1900. DATED 218t December, 1974  Signed in my presence by the Transferor who is personally known to me.  Organium of Witness  Name of Witness (BLOCK LETTERS)  23 HARRAM  Address of Witness  Address of Witness				
Signed in my presence by the Transferee who is personally known to				
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FOLIO: 8/8043

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LAND

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LOT 8 IN DEPOSITED PLAN 8043 LOCAL GOVERNMENT AREA RYDE PARISH OF FIELD OF MARS COUNTY OF CUMBERLAND TITLE DIAGRAM DP8043

FIRST SCHEDULE

_____

ROMECITI EASTWOOD PTY LTD

(T AK232183)

SECOND SCHEDULE (3 NOTIFICATIONS)

_____

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 A610422 COVENANT
- 3 AK232185 MORTGAGE TO PERPETUAL NOMINEES LIMITED

NOTATIONS

-----

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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

NEW SOUTH WALES

First Title Old System

Prior Title Vol. 2658 Fol. 99



vol. 15392 Fol. 122

EDITION ISSUED

29 10 1985

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

Registrar General.

SEE AUTO FOLIO

### LAND REFERRED TO

Lot 9 in DP8043 at Eastwood in the Municipality of Ryde Parish of Hunters Hill County of Cumberland.

Title Diagram: DP8043.

5

## FIRST SCHEDULE

ANTHONY CHARLES CANDY and HELEN CANDY, as Joint Tenants.

V962340

4129

### SECOND SCHEDULE

Reservations and conditions in the Crown grant.
 V9623417Mortgage to Advance Bank Australia Limited.

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

Page 1) Vol

(Page 2 of 2 pages
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vol	Fot 122
	1101 A 25 S

FIRST SCHEDULE (continued) REGISTERED PROPRIETOR SECOND SCHEDULE (continued) PARTICULARS Registrar General CANCELLATION NOTATIONS AND UNREGISTERED DEALINGS

_____

### SEARCH DATE

26/10/2016 12:28PM

FOLIO: 9/8043

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First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 15392 FOL 122

Recorded	Number	Type of Instrument	C.T. Issue
21/8/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
20/12/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
6/2/1991 6/2/1991	Z492391	DISCHARGE OF MORTGAGE TRANSFER	PRIMION 1
6/2/1991	Z492392	MORTGAGE	EDITION 1
19/9/2012	AH247221	CHANGE OF NAME	EDITION 2
	AH563036 AH563037	DISCHARGE OF MORTGAGE NOTICE OF DEATH	EDITION 3
5/3/2013	AH591202	TRANSFER WITHOUT MONETARY CONSIDERATION	EDITION 4
18/7/2013	AH884413	DEPARTMENTAL DEALING	
24/2/2015	AJ274711	CAVEAT	
2/4/2015	AJ380252	CAVEAT	
17/12/2015 17/12/2015	AK70118 AK70119	WITHDRAWAL OF CAVEAT TRANSFER WITHOUT MONETARY CONSIDERATION	EDITION 5
17/12/2015	AK70120	CAVEAT	
25/2/2016	AK241491 AK232184 AK232185	WITHDRAWAL OF CAVEAT TRANSFER MORTGAGE	EDITION 6
23,2,2010			

*** END OF SEARCH ***

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Req:R660709 /Doc:D	L Z492391 /Rev:19-Jul-2010 /Sts:OK.OK /Pgs:A	LL /Prt:27-Oct-2016 11:56 /Seq:1 of 1	
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	Formerly Vol.15392 Fol.122		Eastwood
	102.120		Bastwood
			[-
TRANSFEROR			
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	ANTHONY CHARLES CANDY and HEL	EN CANDY	
ESTATE	(the abovenamed TRANSFEROR) hereby acknowledges	receipt of the consideration of \$ 220,000.00	
Note (c)	and transfers on estate in fee simple in the land above described to the TRANSFEREE		
TRANSFEREE			OFFICE USE ONLY
Noto (a)	SUNG HSIUNG LIU of 369 Anzac Par	cade, Shopkeeper and	
	LAN-YANG TSUI of the same addres	ss, Domestic Duties.	
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	Address and occupation of Witness		Signature of Transferor
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	Signed Extra Fee	Delivery	
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Ref:PSH-GROLLY-Eastwood /Src:H

02ND Form: Release: 5-1

### NOTICE OF DEATH

**New South Wales** Section 101 Real Property Act 190.



AH563037F

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

(A)	TORRENS TITLE	9/8043			
(B)	REGISTERED DEALING	Number		Torrens Title	
(C)	LODGED BY	Document Collection Box	Name, Address or DX. Telephone.  Chan Li & Co., Solicitor P.O. Box 288 Eastwood NS tel: 9858 3022 fax: 985  Reference: Liu-3211-lprb	SW 2122	CODE
(D)	DECEASED JOINT TENANT		ons for Completion: Instruction (D)	regarding discrepancies in the name	:
(E)	SURVIVING JOINT TENANT	SUNG HSI	JNG LIU		
(G)	on 23 December this application) in DATE  I certify I am an eleterant signed this in the part of the p	er 2012 In the above 1 Ingible witness dealing in my Tess:  Else 402	as stated in the copy of death	certificate No.101573/2013  Certificate No.101573/2013  Certified correct for the purposes of the Re 1900 by the surviving joint tenant.  Signature of surviving joint tenant:	accompanying cal Property Act
(11)	The eNOS ID No.	uives that you	certifies that the eNOS data Full name; must have known the signatory for n	nd the relevant data has been forwarded to leave the relevant to this dealing has been submitted Signature:  now than 12 months or have sighted identifying Office use only— Evidence sighted and returns	and stored under

Ref:PSH-GROLLY-Eastwood /Src:H

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www.lpma.nsw.gov.au



# TRANSFER

New South Wales Real Property Act 1900



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(C)	TRANSFEROR	SUNG HSI	UNG LIU		and the same of th		
(D)	CONSIDERATION	The transfero	r acknowledges rece	ipt of the consid	eration of \$ 1.00		and as regards
(E)	ESTATE	the abovement	ntioned land transfe	ers to the transfe	erce an estat	e in fee simple	
(F)	SHARE TRANSFERRED						
(G)	TRANSFEREE	Encumbrance	es (if applicable):				
(H)	IRANSFEREE	YUNG YU	LIU AND YUNG	FENG LIU			i
(1)		TENANCY:	Tenants in Co	ommon in Eq	ual Shares		
	DATE	•					
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			·			the purposes of the Real Proof whose signature appear	
					Signature:	Law K	llan
					Signatory's name: Signatory's capacity:	ELSIE SAU KUEN transferee's solicitor	CHAN
(J)	The transfer	ee .		that the eNOS	data relevant to this de	caling has been submitted a	and stored under
33	eNOS ID No.		Full name:	er sammere annar annar samm. West i		Signature:	
1003	ALL HANDWRITING	MUST BE IN BE	OCK CAPITALS.	Page 1 of	{	LAND AND PROPERTY MANAGE	EMENT AUTHORITY

Ref:PSH-GROLLY-Eastwood /Src:H

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> **New South Wales** Real Property Act 1900

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PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RPAct) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that

	the Register is ma	de available to any person for search upon payment of a fee, if any.	NEW SOUTH WALES OUTY	•						
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(A)	TORRENS TITLE	9/8043								
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(C)	TRANSFERÖR	YUNG YU LIU and YUNG FENG LIU								
(D)	CONSIDERATION	Pursuant to an Order of the Supreme Court of NS	₹ 2015/188121							
(E)	ESTATE	and as regards the above land transfers to the transferce an estate	in fee simple							
(F)	SHARE TRANSFERRED									
(G)		Encumbrances (if applicable):								
(H)	TRANSFEREE	SUNG HSIUNG LIU								
(1)		TENANCY:								
	DATE3	December 2015								
(J)		eligible witness and that the transferor Certified correct g in my presence. 1900 by the trans	for the purposes of the Rea feror.	il Property Act						

Signature of witness:

Name of witness: Address of witness:

Allen Hsu Solicitor

Suite 26, 181 Church Street Parramatta NSW 2150

Signature of transferor:

Certified correct for the purposes of the Real Property Act 1900 on behalf of the transferee by the person whose signature appears below.

Signature:

Signatory's name: Signatory's capacity:

hustoph

certifies that the eNOS data relevant to this dealing has been submitted and stored under (K) The transferee's solicitor eNOS ID No. 1968763 Full name: CHRISTOPHER MATTHEW ZUCKER

* s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation. ALL HANDWRITING MUST BE IN BLOCK CAPITALS Page 1 of 2

Req:R660725 /Doc:DL AK070119 /Rev:21-Dec-2015 /Sts:NO.OK /Pgs:ALL /Prt:27-Oct-2016 11:57 /Seq:2 of 2 Ref:PSH-GROLLY-Eastwood /Src:H

Annexure A to Transfer dated Transferor and SUNG HSIUNG LIU, Transferee 2015 between YUNG YU LIU and YUNG FENG LIU,

#### Schedule

(J) I certify that I am an eligible witness and that the transferor's attorney signed this dealing in my presence.

Signature of witness:

Name of witness: Address of witness:

> Allen Hsu Solicitor Suite 26, 181 Church Street Parramatta NSW 2150

Certified correct for the purposes of the Real Property Act 1900 by the transferor's attorney who signed this dealing pursuant to the power of attorney specified.

Signature of attorney:

Attorney's name: Signing on behalf of:

Yung Feng Liu Yung Yu Liu

Power of attorney-Book: 4644 -No.: 891

19 February 2013

# LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 9/8043

_____

LAND

____

LOT 9 IN DEPOSITED PLAN 8043
AT EASTWOOD
LOCAL GOVERNMENT AREA RYDE
PARISH OF FIELD OF MARS COUNTY OF CUMBERLAND

FIRST SCHEDULE

-----

ROMECITI EASTWOOD PTY LTD

TITLE DIAGRAM DP8043

(T AK232184)

SECOND SCHEDULE (2 NOTIFICATIONS)

_____

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 AK232185 MORTGAGE TO PERPETUAL NOMINEES LIMITED

NOTATIONS

-----

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Any entries preceded by an asterix do not appear on the current edition of the certificate of title.

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Hazlett Information Services 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.

Level 4, 122 Castlereagh Street, Sydney 2000 - DX 1078 SYDNEY PHONE: (02) 9261 5211 FAX: (02) 9264 7752 www.haziett.com.au





# **APPENDIX D**

DATA QUALITY OBJECTIVES



# INTRODUCTION

The Data Quality Objectives (DQOs) process was used to define the type, quantity and quality of the data needed to support decisions relating to the environmental condition of a site (reference D1). The process consists of seven steps, with the output from each step influencing the choices that will be made later in the process.

According to USEPA (reference D2), DQOs are qualitative and quantitative statements, derived from the first six steps of the process, that:

- Clarify the study objective;
- Define the most appropriate type of data to collect;
- Determine the most appropriate conditions from which to collect the data;
   and
- ♦ Specify tolerable limits on decision errors which will be used as the basis for establishing the quantity and quality of data needed to support the decision.

The DQOs are then used to develop a scientific and resource-effective data collection design.

#### STEP 1 - STATE THE PROBLEM

The problem is the potential for the site to be impacted by contamination caused by past activities undertaken on or adjacent to the site, at levels in excess of those permissible for the proposed commercial and residential land-use with no access to soil, and which could impact upon anticipated receiving environments and the intended purchase of the property. According to the Stage 1 PSI information the risk of contamination was low however, a detailed soil sampling program was conducted as requested by Council. Also an assessment of groundwater was conducted using an existing groundwater monitoring well.

Appendix D DQO Page 1 of 4



#### STEP 2 - IDENTIFY THE DECISION STATEMENT

Identify contamination at the site which would pose an unacceptable risk as defined by relevant guidelines endorsed by the NSW Office of Environment and Heritage (references D3, D4 and D5) for the proposed residential land-use for the site and/or that would impact upon anticipated receiving environments.

### STEP 3 - IDENTIFY INPUTS TO THE DECISION

The following information inputs are required to resolve the decision statement:

- ♦ Collection of environmental soil and groundwater samples using appropriate methods;
- ♦ Analysis of selected samples for the contaminants of concern;
- ♦ Comparison of the results with relevant Site Assessment Criteria (SAC) as defined in the main body of the report; and
- ♦ Accurate measurements of sample locations to allow for accurate mapping and contouring of contamination (if identified).

#### STEP 4 - DEFINE THE BOUNDARIES OF THE STUDY

The site covers a combined area of 5,798m² and comprises seven allotments which are legally referred to as Lot 3 to Lot 9 in Deposited Plan 8043.

The lateral extent of the study is the boundaries of the site (as depicted on **Figure 2**). The vertical extent of the study is approximately 3.0m below ground surface (bgs), or 0.5m into natural soils, or drilling / excavation method refusal.

#### STEP 5 - DEVELOP A DECISION RULE

The purpose of this step is to define the parameter of interest, specify the action level, and integrate previous DQO outputs into a single "if...then..." statement that describes a logical basis for choosing among alternative actions.

The parameters of interest (or contaminants of concern) are a broad group of common contaminant compounds known to occur within the Sydney area.

Appendix D DQO Page 2 of 4



The action level or Site Assessment Criteria (SAC) will be used to decide if the parameter represents an unacceptable risk for the proposed land-use and/or the receiving environment. If the measured concentration of a parameter or compound exceeds the action levels (SAC) in soils, then this is deemed to present an unacceptable risk if the site is developed for commercial/residential land-use or to environmental receptors.

If the concentrations of a parameter or compound, whichever is representative for of the site, are above the nominated action levels, then further sampling may be proposed to determine the extent of contamination.

### STEP 6 - SPECIFY ACCEPTABLE LIMITS ON DECISION ERRORS

There are two types of errors:

- Deciding that the site is acceptable for residential land-use and that there
  is a low risk to receiving environments when it actually is not. The
  consequence of this error may be unacceptable health risk for current and
  future users of the sites.
- 2) Deciding that the site is unacceptable for the proposed land-use and that there is a risk to receiving environments when it is acceptable. The consequence of this error is that the client will pay for further investigation / remediation that are not necessary.

The more severe consequences are with decision error (1) since the risk of jeopardising human health outweighs the consequences of paying more for remediation. It will not be possible to conduct statistical hypothesis tests as the proposed sampling programme consists of the collection of one round of samples only.

Appendix D DQO Page 3 of 4



#### STEP 7 - OPTIMISING THE DESIGN FOR OBTAINING DATA

The purpose of this step is to identify a resource-effective data collection design for generating data that are expected to satisfy the DQOs.

The resource effective data collection design that is expected to satisfy the DQOs is described in detail in Section 7 of the report. To ensure the design satisfies the DQOs a comprehensive Quality Assurance and Quality Control Plan will be implemented.

#### References

- D1. NSW DEC (2006) Contaminated Sites: Guidelines for NSW Site Auditor Scheme, 2nd Edition.
- D2. USEPA, 2000: Guidance for Data Quality Objectives Process. EPA QA/G-4.
- D3. NEPC, 2013: National Environment Protection Council (1999). National Environment Protection (Assessment of Site Contamination) Measure. Schedule B(1) Guideline on the Investigation Levels for Soil and Groundwater.
- D4. Friebel & Nadebaum (2011): Technical Report No. 10 Health screening levels for petroleum hydrocarbons in soil and groundwater Part 1: Technical development document. CRC for Contamination Assessment and Remediation of the Environment.
- D5. ANZECC/ARMCANZ, 2000: Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, 2000: *Guidelines for Fresh and Marine Water Quality, National Water Quality Management Strategy.* October 2000.

Appendix D DQO Page 4 of 4



# **APPENDIX E**

**BOREHOLE LOGS** 

Geo Environmental Engineering 82 Bridge St Lane Cove NSW 2066 T 02 9420 3361



Hole ID.

BH101

Hole Depth:

1.00 m

1 of 1

Project Name: Environmental Site Assessment

Project Number: E

Sheet:

E16017EAS

Location / Site:

Drilling Company:

1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW

31/10/2016 Ground Level: RL 76.0m AHD (estimate)

Drill Method: Equipment: GEE Manual

**Hand Auger** 

Date Completed: 31/10/2016

Date Started:

Easting: -----

Northing: -----

Client: Romeciti Eastwood Pty Ltd

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	Moisture	Samples / Tests ID No.	Observations / Comments
		0.2					Surface: Grass  TOPSOIL. Clayey SILT- dark grey, roots in upper 0.2m.	firm	dry	SM311016-1 0.0-0.15m	
Hand Auger		0.4			СН	Natural	Silty CLAY- brown, becoming red brown from 0.45m, medium to high plasticty.	firm to stiff	moist	SM311016-2/3 0.40-0.6m	
		1.0					End of Hole at 1.00m Target depth reached.				
NOD E16017EAS.GPJ GEE.GDT 9/11/16 1:46:33 PM											
D E16017EAS.GPJ GEE.		2.0									

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Moisture

No adverse odour and no obvious Asbestos Containing Material (ACM).

Logged By: Stephen McCormack Date: 31/10/2016

Additional Comments

Checked By:

Stephen McCormack Date: 8/11/2016

Geo Environmental Engineering 82 Bridge St Lane Cove NSW 2066 T 02 9420 3361



Hole ID.

BH102

Hole Depth:

1.00 m

1 of 1

Project Name: Environmental Site Assessment

Project Number:

Sheet:

E16017EAS

Location / Site: 1-

1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW

31/10/2016

Ground Level: RL 72.0m AHD (estimate)

Drill Method: Equipment:

Drilling Company:

GEE Manual

**Hand Auger** 

Date Completed: 31/10/2016

Date Started:

Easting: -----

Client: Romeciti Eastwood Pty Ltd

Northing: -----

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Grass				
		0.2					<b>TOPSOIL. Clayey SILT</b> - dark grey, roots in upper 0.2m.	firm	dry	SM311016-4 0.0-0.2m	
		_		$\bigotimes$		Fill	FILL- Silty CLAY, dark grey brown, trace gravel.	firm	moist	SM311016-5 0.20-0.35m	
Hand Auger		0.4					Silty CLAY- red brown, medium to high	firm to stiff	moist		
Har		0.6				le	plasticty.	iiiiii to suii	moist	SM311016-6 0.5-0.7m	
		0.8			СН	Natural					
		1.0									
		1.2					End of Hole at 1.00m Target depth reached.				
		1.4									
		-									
		1.6									
		1.8									
		2.0									
		2.2									

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Additional Comments

D Dry
Dp Damp
SM Slightly Moist
M Moist
VM Very Moist
W Wet

Moisture

No adverse odour and no obvious Asbestos Containing Material (ACM).

Logged By: Stephen McCormack Date: 31/10/2016 Checked By: Stephen McCormack Date: 8/11/2016

Geo Environmental Engineering 82 Bridge St Lane Cove NSW 2066 T 02 9420 3361



Hole ID.

BH103

Hole Depth:

1.00 m 1 of 1

Project Name: Environmental Site Assessment

Project Number:

Sheet:

E16017EAS

Location / Site:

1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW

31/10/2016 Ground Level: RL 74.0m AHD (estimate)

Client: Romeciti Eastwood Pty Ltd

Drilling Company:
Drill Method:

GEE Manual

Date Completed: 31/10/2016

Date Started:

Easting: -----

Equipment:

Hand Auger

Northing: -----

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	Moisture	Samples /Tests	DUP TRIP	Observations / Comments
Σ	>		<u>«</u>	9	n	M	Surface: Grass	00	Σ		11311	
		0.2					TOPSOIL. Clayey SILT- dark grey, roots in upper 0.2m.	firm	dry	SM311016-7 0.0-0.15m		
							Silty CLAY- brown, becoming red brown from 0.45m, medium to high plasticty.	firm to stiff	moist	SM311016-8/9		
Hand Auger		0.4				Natural	p.actics).			0.3-0.45m		
		0.8			СН						Dup	
		1.0										
		1.2					End of Hole at 1.00m Target depth reached.					
		1.4										
:34 PM		1.6										
00D E16017EAS.GPJ GEE.GDT 9/11/16 1:46:34 PM		1.8										
GPJ GEE.GD		2.0										
D E16017EAS		2.2										

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Moisture Additional Comments

D Dry
Do Damp No adverse odour and no

D Dry
Dp Damp
SM Slightly Moist
M Moist
VM Very Moist
W Wet
Sd Saturated

No adverse odour and no obvious Asbestos Containing Material (ACM).

Logged By: Stephen McCormack Date: 31/10/2016 Checked By: Stephen McCormack Date: 8/11/2016

Geo Environmental Engineering 82 Bridge St Lane Cove NSW 2066 T 02 9420 3361



Hole ID.

Sheet:

**BH104** 

Hole Depth:

0.90 m 1 of 1

**Environmental Site Assessment** Project Name:

**GEE** 

E16017EAS Project Number:

Client: Romeciti Eastwood Pty Ltd

Location / Site:

1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW

31/10/2016 Ground Level: RL 71.0m AHD (estimate)

Drilling Company: Drill Method: Manual

Date Completed: 31/10/2016

Date Started:

Easting:

Equipment: **Hand Auger**  Northing:

_	Equipment. Hand Auger								Northing				
Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	Moisture	Samples / Tests ID No.	Observations / Comments		
				<b>)</b>			Surface: Grass TOPSOIL. Clayey SILT- dark grey.	firm	dry	0110110101010			
		0.2				Fill	<b>3,7</b>			SM311016-10 0.0-0.15m			
							FILL- Silty CLAY, dark grey dark brown, trace gravel.	firm	moist	SM311016-11 0.2-0.35m			
Hand Auger		0.4					<b>Silty CLAY</b> - red brown, medium to high plasticty.	firm to stiff	moist	SM311016-12			
Ī		0.6			СН	Natural				0.4-0.55m			
		0.8				Na							
		1.0		ии.			End of Hole at 0.90m Target depth reached.						
		1.2											
		F											
		1.4											
46:35 PM		1.6											
T 9/11/16 1:46:35 PM		1.8											
OD E16017EAS.GPJ GEE.GDT													
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Dry Damp Slightly Moist Moist Very Moist Wet

Moisture

No adverse odour and no obvious Asbestos Containing Material (ACM).

Stephen McCormack Date: 31/10/2016 Checked By: Stephen McCormack Date: 8/11/2016 Logged By:

Geo Environmental Engineering 82 Bridge St Lane Cove NSW 2066 T 02 9420 3361



Hole ID.

BH105

Hole Depth:

0.90 m 1 of 1

Project Name: Environmental Site Assessment

Project Number:

Sheet:

E16017EAS

Location / Site:

1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW

31/10/2016

Ground Level: RL 70.0m AHD (estimate)

Drilling Company:
Drill Method:

GEE Manual

Date Completed: 31/10/2016

Date Started:

Easting: -----

Client: Romeciti Eastwood Pty Ltd

Equipment: Hand Auger

Northing: -----

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	Moisture	Samples / Tests	Observations / Comments
							Surface: Grass				
							TOPSOIL. Clayey SILT- dark grey.	firm	dry	SM311016-13 0.0-0.15m	
_		0.2				III	FILL- Silty CLAY, dark grey dark brown, trace gravel.	firm	moist	SM311016-14 0.2-0.35m	
Hand Auger		0.6					Silty CLAY- red brown, medium to high plasticty.	firm to stiff	moist	SM311016-15 0.4-0.55m	
		0.8			СН	Natural					
		1.0					End of Hole at 0.90m Target depth reached.				
		1.2									
		1.4									
46:36 PM		1.6									
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D E16017EAS.GPJ GEE.GDT 9/11/16 1:46:36 PM		2.0									
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Hole ID.

**BH106** 

Hole Depth:

0.80 m

1 of 1

**Environmental Site Assessment** Project Name:

Project Number:

Sheet:

E16017EAS

1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW Location / Site:

Date Started:

31/10/2016

Ground Level: RL 73.3m AHD (estimate)

Drill Method: Equipment:

Drilling Company:

**GEE** Manual

**Hand Auger** 

Date Completed: 31/10/2016

Easting:

Client: Romeciti Eastwood Pty Ltd

Northing:

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Grass				
		0.2					<b>TOPSOIL. Clayey SILT</b> - dark grey, roots in upper 0.2m.	firm	dry	SM311016-16 0.0-0.15m	
							Silty CLAY- brown, becoming red brown from 0.45m, medium to high plasticty.	firm to stiff	moist		
Hand Auger		0.4				Natural	0.45m, medium to high plasticty.			SM311016-17 0.3-0.45m	
		0.6			СН						
		-									
		0.8					End of Hole at 0.80m Target depth reached.				
		1.0									
		1.2									
		F									
		1.4									
N L 00.0		1.6									
0 / 1		-									
		1.8									
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		2.2									

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Moisture

Very Moist Wet

Dry Damp Slightly Moist D Dp SM M VM VM W Sd No adverse odour and no obvious Asbestos Containing Material (ACM). Moist

Additional Comments

Stephen McCormack Date: 31/10/2016 Checked By: Stephen McCormack Date: 8/11/2016 Logged By:

Geo Environmental Engineering 82 Bridge St Lane Cove NSW 2066 T 02 9420 3361



Hole ID.

BH107

Hole Depth:

0.70 m 1 of 1

Project Name: Environmental Site Assessment

Project Number:

Sheet:

E16017EAS

Location / Site: 1.

1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW

Ground Level: RL 69.5m AHD (estimate)

Drilling Company:
Drill Method:

GEE Manual

Date Completed: 31/10/2016

Date Started:

Easting: -----

Client: Romeciti Eastwood Pty Ltd

Equipment:

Hand Auger

Northing: ---

31/10/2016

Samples / Tests USCS Symbol Material Type Graphic Log Water Level Depth (m) Material Description Observations / Comments Moisture RL (m) DUP TRIP ID No. Surface: Grass TOPSOIL. Clayey SILT- dark grey, firm dry SM311016-18 0.0-0.15m Silty CLAY- red brown, medium to high firm to stiff moist 0.2 plasticty. SM311016-19/20 Hand Auge 0.2-0.35m Natural 0.4 Dup 0.6 End of Hole at 0.70m Target depth reached. 0.8 1.0 1.2 D E16017EAS.GPJ GEE.GDT 9/11/16 1:46:37 PM 1.6 1.8 2.0

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D Dry
Dp Damp
SM Slightly Moist
M Moist
VM Very Moist
W Wet
Sd Saturated

Moisture

No adverse odour and no obvious Asbestos Containing Material (ACM).

Logged By: Stephen McCormack Date: 31/10/2016 Checked By: Stephen McCormack Date: 8/11/2016

Geo Environmental Engineering 82 Bridge St Lane Cove NSW 2066 T 02 9420 3361



Date Started:

Hole ID.

BH108

Hole Depth:

Sheet:

0.80 m

1 of 1

Project Name: Environmental Site Assessment

Project Number: **E16017EAS** 

Client: Romeciti Eastwood Pty Ltd

Location / Site: 1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW

1/11/2016 Ground Level: RL 72.0m AHD (estimate)

Drill Method: Manual

Drilling Company:

Date Completed: 1/11/2016 Easting: ----

Equipment: Hand Auger

**GEE** 

Northing: -----

_	Equipment: Hand Auger							Nortning:				
Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	Moisture	Samples / Tests ID No.	Observations / Comments	
							Surface: Grass					
							<b>TOPSOIL. SAND with Silt-</b> grey, fine to medium grained, roots.	loose	dry			
		0.2								AC011116-04 0.1-0.2m		
Jer		-				_	<b>Silty CLAY</b> - brown red brown, medium to high plasticty.	firm to stiff	dry to sl.moist			
Hand Auger		0.4				Natural				AC011116-05/06 0.35-0.5m		
		0.6			СН							
		-										
		0.8										
		-					End of Hole at 0.80m Target depth reached.					
		1.0										
		-										
		1.2										
		1.4										
9/11/16 1:46:38 PM		1.6										
11/16 1:		-										
		1.8										
PJ GEE		2.0										
WOOD E16017EAS.GPJ GEE.GDT												
OD E160		2.2										
ŏ—	1/10	isture	_				Additional Comments					

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EAS	D	Dry
É	Dp	Dam
Ō	SM	Sligh
9	M	Moist
H	VM	Very
	W	Wet
ES	Sd	Satur

Additional Comments

No adverse odour and no obvious Asbestos Containing Material (ACM).

Wet Saturated

Logged By:

Dry Damp Slightly Moist Moist

Very Moist

Andy Chiem

Date: 1/11/2016

Checked By:

Stephen McCormack Date: 8/11/2016

Geo Environmental Engineering 82 Bridge St Lane Cove NSW 2066 T 02 9420 3361



Hole ID.

BH109

Hole Depth:

0.80 m

1 of 1

Project Name: Environmental Site Assessment

Project Number:

Sheet:

E16017EAS

Location / Site: 1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW

Date Started: 1/11/2016

Ground Level: RL 74.7m AHD (estimate)

Drilling Company:
Drill Method:

GEE Manual

Date Completed: 1/11/2016

Easting: -----

Client: Romeciti Eastwood Pty Ltd

Equipment: Hand Auger

Northing: -----

_								Notuning				
Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	Moisture	Samples /Tests ID No.	Observations / Comments	
Hand Auder Method		0.2 0.4 0.6		Graphic	S SOSO CH	Natural	Surface: Grass  TOPSOIL. Silty CLAY- dark grey, low plasticity.  Silty CLAY- red brown, medium to high plasticty.  End of Hole at 0.80m Target depth reached.	firm  stiff to very stiff	moist	AC011116-07 0.1-0.2m AC011116-08 0.3-0.4m AC011116-09 0.7-0.8m		
OD E16017EAS.GPJ GEE.GDT 9/11/16 1:46:38 PM												

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Moisture Additional Comments

D Dry Damp Damp Slightly Moist M Moist Vry Wet Sd Saturated

Additional Comments

No adverse odour and no obvious Asbestos Containing Material (ACM).

Logged By: Andy Chiem Date: 1/11/2016 Checked By: Stephen McCormack Date: 8/11/2016

Geo Environmental Engineering 82 Bridge St Lane Cove NSW 2066 T 02 9420 3361



Hole ID.

Sheet:

**BH110** 

Hole Depth:

0.70 m

1 of 1

**Environmental Site Assessment** Project Name:

Project Number: E16017EAS

Location / Site: 1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW Client: Romeciti Eastwood Pty Ltd

Drilling Company: **GEE**  Date Started: 1/11/2016 Date Completed: 1/11/2016 Ground Level: RL 77.5m AHD (estimate)

Drill Method: Manual Easting:

Equipment: **Hand Auger** Northing:

_											
Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Grass				
							TOPSOIL. Silty CLAY- dark grey, low plasticity, roots.	firm	moist	AC011116-10	
_		0.2				-	Silty CLAY- brown red brown, medium to high plasticty.	firm to stiff	moist	0.1-0.2m AC011116-11 0.2-0.3m	
Hand Auger		0.4			СН	Natural	p.ac.ic.y.				
		0.6									
		0.0			СН		Silty CLAY- red brown mottled light grey orange, medium to high plasticty, trace	firm to stiff	moist	AC011116-12 0.6-0.7m	
		0.8					ironstone gravel.  End of Hole at 0.70m  Target depth reached.				
		1.0									
		_									
		1.2									
		1.4									
		1.6									
		1.8									
		2.0									
		2.2									
	/loi	sture		•	•		Additional Comments	•			
	p M 1 M	Dry Dar Slig Moi Ver We	mp Intly M st y Mois	st			No adverse odour and no obvious Asbestos Containin	g Material (AC	CM).		
	Logged By: Andy Chiem Date: 1/11/2016 Checked By: Stephen McCormack Date: 8/11/2016									cCormack Date: 8/11/2016	

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ĕ.	Moisture		Additional Comments
IES BH LOG EAST	D Dp SM M VM VM W	Dry Damp Slightly Moist Moist Very Moist Wet Saturated	No adverse odour and no obvious Asbestos Containing Material (ACM).
> .			

Geo Environmental Engineering 82 Bridge St Lane Cove NSW 2066 T 02 9420 3361



Hole ID.

**BH111** 

Hole Depth:

Sheet:

0.40 m

1 of 1

**Environmental Site Assessment** Project Name:

Project Number:

E16017EAS

Location / Site:

1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW

Client: Romeciti Eastwood Pty Ltd

Drilling Company: Drill Method:

**GEE** Manual

Date Completed: 1/11/2016

1/11/2016

Date Started:

Easting:

Ground Level: RL 79.0m AHD (estimate)

Equipment:

**Hand Auger** 

Northing:

Method Water Level Depth (m)	RL(m)	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	Moisture	Samples / Tests ID No.	Observations / Comments
Hand Auger	2			Fill	Surface: Grass  FILL- Silty CLAY, grey brown, low to medium plasticity, trace fine to medium gravel, roots.	stiff	dry	AC011116-13 0.1-0.2m	Charcoal.
0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 1.8 1.8					End of Hole at 0.40m Refusal on boulders.				

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Dry Damp Slightly Moist D Dp SM M VM VM Moist Very Moist Wet Sd

Moisture

No adverse odour and no obvious Asbestos Containing Material (ACM). Nearby hole refused at same depth.

Additional Comments

**Andy Chiem** Date: 1/11/2016 Checked By: Stephen McCormack Date: 8/11/2016 Logged By:

Geo Environmental Engineering 82 Bridge St Lane Cove NSW 2066 T 02 9420 3361



Hole ID.

**BH112** 

Hole Depth:

Sheet:

1.00 m

1 of 1

**Environmental Site Assessment** Project Name:

**GEE** 

E16017EAS Project Number:

Client: Romeciti Eastwood Pty Ltd

Location / Site: 1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW

> 1/11/2016 Ground Level: RL 80.5m AHD (estimate)

Drill Method: Manual

Drilling Company:

Date Completed: 1/11/2016 Easting:

Northing: Equipment: **Hand Auger** 

Date Started:

Method	Water Level	Depth (m)	RL(m)	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	Moisture	Samples /Tests ID No.	Observations / Comments
		0.2				Fill	FILL- Silty CLAY, dark brown, low plasticity, trace fine gravel.	firm	slightly moist	AC011116-14 0.1-0.2m	
Hand Auger		0.4				:н	<b>Silty CLAY</b> - brown red brown, medium to high plasticty.	firm to stiff	slightly moist	AC011116-15 0.4-0.5m	
		0.8			СН	Natural	Silty CLAY- red brown mottled grey orange, medium to high plasticty, shale fragments.	firm to stiff	slightly moist	AC011116-16 0.8-0.9m	
		1.2		ruz			End of Hole at 1.00m Target depth reached.				
9/11/16 1:46:40 PM		1.4									
GEE.GDT		1.8									
եջ <u>—</u>	Moi D Dp	2.2 Sture	,				Additional Comments  No adverse odour and no obvious Asbestos Containin	g Material (A0	CM).		
S BH LOG	SM M VM W Sd	Slig Moi Ver We Sat	ghtly M ist ry Mois it urated	st		And	ly Chiem Date: 1/11/2016	Checke		Stephen M	cCormack Date: 8/11/2016

$\circ$			
Š	Mois	ture	Additional Comments
EAS.	D Dp	Dry Damp	No adverse odour and no obvious Asbestos Containing Material (ACM).
IES BH LOG	VM	Slightly Moist Moist Very Moist Wet Saturated	
₹		Catalated	

Geo Environmental Engineering 82 Bridge St Lane Cove NSW 2066 T 02 9420 3361



Date Started:

Hole ID.

**BH113** 

Hole Depth:

Sheet:

0.60 m

1 of 1

Project Name: Environmental Site Assessment

Project Number: **E16017EAS** 

Location / Site: 1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW

1/11/2016 Ground Level: RL 73.0m AHD (estimate)

Client: Romeciti Eastwood Pty Ltd

Drilling Company: **GEE**Drill Method: **Manual** 

Date Completed: 1/11/2016 Easting: ------

Equipment: Hand Auger

Northing: -----

	Water Level	(m)		Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	e.r.	Samples / Tests	Observations / Comments
Metho	Water	Depth (m)	RL (m)	Graph	nscs	Mater		Consi	Moisture	ID No.	
				uu.			Surface: Grass Silty CLAY- brown red brown, medium to high	firm to stiff	sliahtly		
		0.2					plasticty.	firm to stiff	moist	AC011116-17 0.1-0.2m	
Hand Auger	>	-			СН	Natural				0.1 0.211	
Han		0.4				Ž					
		0.6								AC011116-18 0.5-0.6m	
		-					End of Hole at 0.60m Target depth reached.				
		0.8									
		1.0									
		1.2									
		ļ.,,									
		1.4									
3:41 PM		1.6									
9/11/16 1:46:41 PM											
EE.GDT 9/		1.8									
OOD E16017EAS.GPJ GEE.GDT		2.0									
E16017EA		2.2									

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Additional Comments

D Dry
Dp Damp
SM Slightly Moist
M Moist
VM Very Moist
W Wet
Sd Saturated

Moisture

No adverse odour and no obvious Asbestos Containing Material (ACM).

Logged By: Andy Chiem Date: 1/11/2016 Checked By: Stephen McCormack Date: 8/11/2016

Geo Environmental Engineering 82 Bridge St Lane Cove NSW 2066 T 02 9420 3361



Hole ID.

**BH114** 

Hole Depth:

Sheet:

1.00 m 1 of 1

**Environmental Site Assessment** Project Name:

**GEE** 

Manual

Project Number:

E16017EAS

Location / Site: 1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW

Ground Level: RL 72.5m AHD (estimate)

Drilling Company: Drill Method:

Date Started: 1/11/2016 Date Completed: 1/11/2016

Easting:

Equipment:

**Hand Auger** 

Northing:

Client: Romeciti Eastwood Pty Ltd

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Grass  TOPSOIL. Silty CLAY- grey brown, low plasticity, roots.	firm	slightly moist		
		0.2					Silty CLAY- dark brown, medium to high plasticty.	firm to stiff	slightly moist	AC011116-19 0.1-0.2m	
Hand Auger		0.6			СН	Natural					
		0.8			СН		Silty CLAY- red brown, medium to high plasticty.	firm to stiff	slightly moist	AC011116-20 0.7-0.8m	
		1.2					End of Hole at 1.00m Target depth reached.				
5		1.4									
9/11/16 1:46:41 P		1.6									
00D E16017EAS.GPJ GEE.GDI 9/11/16 1:46:41 PM		2.0									
U E16017EA		2.2									

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Dry Damp Slightly Moist D Dp SM M VM VM W Sd Moist Very Moist

Wet

Moisture

No adverse odour and no obvious Asbestos Containing Material (ACM).

Additional Comments

**Andy Chiem** Date: 1/11/2016 Checked By: Stephen McCormack Date: 8/11/2016 Logged By:

Geo Environmental Engineering 82 Bridge St Lane Cove NSW 2066 T 02 9420 3361



Hole ID.

**BH115** 

Hole Depth:

Sheet:

1.00 m

1 of 1

**Environmental Site Assessment** Project Name:

E16017EAS Project Number:

Client: Romeciti Eastwood Pty Ltd

Location / Site:

1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW

1/11/2016 Ground Level: RL 72.0m AHD (estimate)

Drilling Company: Drill Method:

**GEE** Manual

Date Completed: 1/11/2016

Date Started:

Easting:

Equipment: Northing: **Hand Auger** 

_	_										
Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	Moisture	Samples / Tests ID No.	Observations / Comments
							TOPSOIL. Silty CLAY- dark grey, low	firm	moist		
		0.2					plasticity, roots.			AC011116-21 0.1-0.2m	
Hand Auger		0.4				Natural	Silty CLAY- brown red brown, medium to high	firm to stiff	moist	AC011116-22	
Har		0.6				2	plasticty.	iiiiii to otiii	molec	0.5-0.6m	
		0.8			СН						
		1.0					Find of Hole at 4 00m			AC011116-23 0.9-1.0m	
		1.2					End of Hole at 1.00m Target depth reached.				
		_									
		1.4									
GEE.GDT 9/11/16 1:46:44 PM		1.6									
DT 9/11/16		1.8									
GPJ GEE.G		2.0									
EASTWOOD E16017EAS.GPJ		2.2									
					<u> </u>	닉			·		
S BH LOG	DDP SM M VM W Sd	Moi Ver We	mp ghtly M ist y Mois	st			Additional Comments  No adverse odour and no obvious Asbestos Containin	g Material (AC	CM).		
GEE DA\		Log	gged	d By:		And	ly Chiem Date: 1/11/2016	Checke	ed By:	Stephen M	cCormack Date: 8/11/2016

ğ_			
ĕ- _	Mois	sture	Additional Comments
/IES BH LOG EASI	D Dp SM M VM W Sd	Dry Damp Slightly Moist Moist Very Moist Wet Saturated	No adverse odour and no obvious Asbestos Containing Material (ACM).

Geo Environmental Engineering 82 Bridge St Lane Cove NSW 2066 T 02 9420 3361



Hole ID.

**BH116** 

Hole Depth:

Sheet:

0.80 m

1 of 1

**Environmental Site Assessment** Project Name:

Project Number: E16017EAS

Client: Romeciti Eastwood Pty Ltd

Location / Site: 1-5 Glen Street & 2-8 Lakeside Road, Eastwood NSW

> 1/11/2016 Ground Level: RL 69.0m AHD (estimate)

Drilling Company: **GEE** Drill Method: Manual

Date Completed: 1/11/2016 Easting:

Equipment: **Hand Auger** Northing:

Date Started:

_	-1-	p.iii									torumig.
p _i	Water Level	(m)	()	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	ıre	Samples / Tests	Observations / Comments
Metho	Water	Depth (m)	RL (m)	Graph	nscs	Materi		Consis	Moisture	ID No.	
-	H			$\times$	┝		Surface: Grass  FILL- Gravelly SAND, brown, fine to coarse	loose	dry		
		-		$\bigotimes$		E	sand, fine to medium gravel.			AC011116-01	
		0.2		$\bowtie$						0.1-0.2m	
er		-					<b>Silty CLAY</b> - red brown streaked grey, medium to high plasticty.	firm to stiff	dry	AC011116-02	Charcoal.
Hand Auger		0.4								0.3-0.4m	
뿐		-		c	СН	Natural					
		0.6				N					
		ŀ								AC011116-03	
		0.8			_		End of Hole at 0.80m			0.7-0.8m	
		-					Target depth reached.				
		1.0									
		ŀ									
		1.2									
		-									
		1.4									
		ŀ									
		1.6									
		-									
		1.8									
		-									
		2.0									
3		-									
	Moi	sture					Additional Comments	Į		I .	L
	D Dp	Dry Dar	mp				No adverse odour and no obvious Asbestos Containin	g Material (AC	CM).		
1 2	SM M VM W	Moi Ver We	y Mois t	st							
	Sd		urated				 				
<u>,                                    </u>		Log	gged	d By:	- 4	And	dy Chiem Date: 1/11/2016	Checke	ed By:	Stephen M	IcCormack Date: 8/11/2016

ğ_			
≥-	Mois	ture	Additional Comments
EAS_	D Dp	Dry Damp	No adverse odour and no obvious Asbestos Containing Material (ACM).
F0G	SM M	Slightly Moist Moist	
H	VM W	Very Moist Wet	
SE -	Sd	Saturated	



# **APPENDIX F**

FIELD DATA SHEETS



# **GROUNDWATER** SAMPLING FIELD DATA

WELL ID: CIALOT

			PROJECT IN	FORMATI	ON				
ROJECT N	AME: S	tage 2 ESA	PI	ROJECT NUM	BER:	16017	SAS		
OCATION /	SITE: J-5	Clen St & 2	-8 Latesial C	LIENT:	Rangat	i Pana	of Mon	agement	
		, fastwood		ETAILS		J		Phy	
VELL DIAME	TER (mm):	50 WEL	L SCREEN INTERVAL	(m):	CAS	SING STICK	UP (+) / DOWN	(-) m:	
CONDITION (Comments B		mage: YES / M		NO NO		Around Well:	and Gatic/ Monume	YES NO	
(0)110014110	vve	II ID VISIBLE. TES	WELL MEAS					E DEST	
TATIO 1818		W		7011211	m BTOC	or m BG	Or m BTOM		
7.5.7.0	ER LEVEL (S			Thistinger (m	100000000000000000000000000000000000000	<u> </u>	<u> </u>		
REE PROD	UCT:	Yes or No		Thickness (m	The Control of the Co	-	PTON		
OTAL DEP	TH OF WELL	, ,			m BTOC		L or m BTOM		
		PU	IRGING DETAILS	S / OBSER	RVATION	S			
MET	HOD:	Bladder Pump	Peristaltic High Volum	ne Pump	Foot Valve	Bailer	Other		
DATE	2/11	116	WATER LEVEL AFTER	PURGE:	DR	1	mBTOC	mBGL / mBTON	
MAX. DRAV	VDOWN (m)		INTAKE D	EPTH:	/	/	mBTOC	mBGL / mBTON	
TIME	VOLUME PURGED	PURGE RATE	DO (mg/L)	E.C. mS/cm or µS/cm	pH (standard units)	Redox (mV)	The second secon	TURB. (NTUs)	
	(Litres) Equilibrium Re	equirements	± 10 %	±3%	± 0.05	± 10	± 0.2		
					-	-			
			RECHARGE C	BSERVAT	TIONS				
	Slow (8	80% recharge > 2 Ho	urs)		Fast	(80% rechar	ge < 2 Hours)		
			SAMPLIN	G DETAIL	s			- 4	
MET	HOD:	Bladder Pump	Peristaltic High Volu	me Pump	Foot Valve	Bailer	Other		
DATE & TIME		2/11/16		WATER L	EVEL (m)	2.13	mBTOC	MBGL7 mBTON	
		711/10		Blind Rep	licate ID:				
SAMPLE ID:		SM0211	16-GWT	Split Dupl	icate ID				
FINAL WATE	RQUALITY	DO (mg/L)	E.C. mS/cm or μS/cm	pH (standard un	The second secon	Redox (mV)	TEMP. (°C)	TURB, (NTUs)	
READINGS		134	752	615	32		21-1	10000	
DESCRIPTIO	N:	Colour	Turbidity		Odou	ur:	Other		
PURGE VOL	UME CALCULA	TOR: Length of Wa One Well Vol Three Well Vo	ter Column (m) = TD (m) — umes (L) = Length of Water olumes (L) =	SWL (m) = Column x 2 (50	mm Dia.) or 7.5	8 (100mm Dia.	) =	_	



# **APPENDIX G**

QUALITY ASSURANCE ASSESSMENT REPORT



# G1. Introduction

A detailed Quality Assurance (QA) assessment, including the analysis of Quality Control (QC) samples, was carried out by GEE to determine the reliability of field procedures and analytical results.

# G2. QUALITY ASSURANCE

Quality Assurance (QA) involves all of the actions, procedures, checks and decisions undertaken to ensure the representativeness and integrity of samples and accuracy and reliability of analysis results (reference 1).

In accordance with AS4482.1 (reference 2) and AS5667.1 (reference 3), a series of QA procedures were integrated within the sampling and analysis plan and included:

- ♦ The collection of Quality Control (QC) samples.
- ♦ The use of standardised field sampling forms developed by GEE.
- ♦ Documentation of calibration and use of field instruments.

To ensure QA in the field, samples were collected by experienced and trained personnel using appropriate methods detailed herein, including appropriate sample handling, containment and transport, and calibrated equipment. Additionally QC samples were collected and analysed as discussed in Section G3.

To ensure QA in the laboratory, GEE used laboratories that are NATA accredited for the analytical tests carried out, therefore it is reasonable for GEE to rely on the laboratories to be proficient in all tests conducted. This encompasses all actions, procedures, checks and decisions undertaken, to ensure the accuracy and reliability of the analysis results. As part of the laboratory QA, QC samples were analysed with each batch of samples as part of this investigation as required by NATA. A discussion of the laboratory QC samples analysed as part of this investigation is provided in Section G3.3.2.

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# G3. QUALITY CONTROL

QC involves those parts of QA which serve to monitor and measure the effectiveness of QA procedures. QC samples assess sample integrity, accuracy and precision and can be separated into field and laboratory QC.

### **G3.1 DEFINITIONS**

Table G1 provides a description and objective of each of the field and laboratory QC samples used during this investigation.

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Table G1: QC Sample Types, Descriptions and Recommended Frequency of Analysis

Туре	Description	Purpose	Recommended Frequency
	FIELD QC SAMPLES		
Blind	A sample collected at the same time and from the same sampling point as the corresponding primary sample ¹ ,	Used to evaluate total sampling	In accordance with AS4482.1
Replicate	and analysed at the same laboratory. Blind replicates are collected, preserved, stored, transported and	and analysis precision and, in the	(reference 2) and NEPM
	analysed in the same manner as the primary sample, with the laboratory having no knowledge of the source	case of soil samples, sample	(reference 4) it is recommended
	of the replicate sample. The assessment of blind replicates samples is undertaken by calculating the Relative	variability.	that 1 blind replicate sample is
	Percent Difference (RPD) which is defined as:		collected for every 20 primary
			samples.
	Result No. 1 – Result No. 2		
	RPD (%) = 100 x Mean Result		
Split	A sample collected at the same time and from the same sampling point as the corresponding primary sample,	Used to provide a check on the	In accordance with AS4482.1
Duplicate	and analysed at a separate laboratory. Split duplicates are collected, preserved, stored, transported and	analytical proficiency of the	(reference 2) and NEPM
	analysed in the same manner as the primary sample, with the laboratories having no knowledge of the	laboratories and hence precision	(reference 4) it is recommended
	purpose of the sample. The assessment of split duplicates samples is undertaken by calculating the Relative	and comparability.	that 1 split duplicate sample is
	Percent Difference (RPD) which is defined as:		collected for every 20 primary
			samples.
	Result No. 1 – Result No. 2		
	RPD (%) = 100 x Mean Result		
Trip Blank	Trip blanks are laboratory supplied test samples of analyte-free media (either washed sand or de-ionised	Used to measure cross-	Industry standard is 1 trip blank
	water) which remain in the sample storage eskies during sampling activities and returned to the laboratory	contamination during sampling,	per batch of primary samples.
	unopened. For soil sampling programmes, the trip blank consists of acid-washed quartz sand that has been	transport, sample preparation and	
	heated to 400°C. For water sampling programs trip blanks comprise pre-washed glass vials containing	analysis.	
	distilled or de-ionised water with appropriate preservatives.		
	The USEPA has shown that cross-contamination only occurs with volatile organics (reference 5), therefore, trip		
	blanks are only analysed for volatile organics.		

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¹ Primary samples are the original representative samples of soil or groundwater collected for analysis to determine aspects of their chemical composition. Primary samples are the original sample taken from a particular location and other samples from the same location are duplicates, replicates or splits.



Trip Spike	Trip spikes, like trip blanks, are supplied by the primary laboratory using analyte-free media (either washed	Used to monitor VOC losses during	Industry standard is 1 trip spike
	sand or de-ionised water) and remain in the sample storage eskies during sampling activities and returned to	transit.	per batch of primary samples
	the laboratory unopened. The sample media, however, is spiked with BTEX.		where volatile concentrations
	For water sampling programmes the BTEX concentration is known and standardised by each laboratory, while		are being measured.
	for soil sampling programmes the exact spike concentration is not known, rather two identical jars of sand are		
	spiked the same concentration with one sample becoming the trip-spike and the other becoming a control		
	sample, which remains in a refrigerator at the laboratory.		
	The trip spike is analysed after returning from the field and the % recovery of the known spike (for water sampling programs), or of the control sample (for soil sampling programs), is calculated.		

# Table G1 Continued

Туре	Description	Purpose	Recommended Frequency			
	LABORATORY QC SAMPLES					
Laboratory	Laboratory duplicates are field samples which are prepared and analysed in the same manner twice.	Determines analytical precision for	NATA specifies 1 per 10 samples			
Duplicate		a sample batch	for trace element and inorganic			
	The assessment of laboratory duplicates is undertaken by calculating the (RPD) which is defined as:		analysis			
	Result No. 1 – Result No. 2					
	RPD (%) = $100 \text{ x}$ Mean Result					
Laboratory	Laboratory Control Samples (LCS) are analyte-free matrices (de-ionised water or clean sand) spiked with a	Determines analytical accuracy	NATA specifies 1 per batch of up			
Control	known concentration of target analytes and carried through the entire preparation and analysis.	and precision for a batch of	to 20 samples			
Sample		samples				
(LCS)	Assessment of LCS is undertaken by calculating the percent recovery (%R) of the spike which is defined as:					
	Spikes Sample Result (SSR) – Sample Result (SR)					
	Percent Recovery (%R) = $100 \text{ x}$ Concentration of Spike Added (SA)					
Surrogates	Surrogates are organic compounds added to field samples and laboratory QC samples prior to preparation.	Used to demonstrate that the	Added to every blank, field and			
	They are similar in chemical behaviour to the target analytes and are not expected to be present in samples	surrogate does not interfere with	laboratory QC sample			
	(reference 6). They form part of the laboratory QC for organic analyses, and are used to indicate the presence	the target analytes, therefore				
	of sample specific interferences. The surrogate is added at the extraction stage then analysed with the batch	determines analytical accuracy for				
	of samples. Like LCSs, surrogates are assessed by calculating the percent recovery (%R), although the	each sample				
	definition is slightly different as shown below:					
	Spiked Sample Result (SSR)					
	Percent Recovery (%R) = $100 \text{ x}$ Concentration of Spike Added (SA)					

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			T
Matrix Spikes	Field samples spiked with a known concentration of a target analytes and carried through the entire	Determine the effects of matrix	Performed at least 1 per batch
	preparation and analysis.	interferences on analytical	of up to 20 samples.
		accuracy of a sample.	
	Matrix spike samples are assessed by calculating the percent recovery (%R) of the spike which is defined as:		
	Spikes Sample Result (SSR) – Sample Result (SR)		
	Percent Recovery (%R) = 100 x Concentration of Spike Added (SA)		
Method	Method blanks are an analyte-free matrices (reagent water or clean sand) that is carried through the entire	Establishes that laboratory	Prepared with every batch of up
Blank	preparation and analysis.	contamination does not cause	to 20 samples for all organic and
		false positives.	inorganic analyses.

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### G3.2 CRITERIA / ACCEPTABLE RANGE

The QC Acceptance Criteria adopted for this investigation is provided in Table G2 and is in general accordance with the Table 4 of AS4482.1 (reference 2) and NEPM (reference 4).

Table G2: QC Sample Acceptance Criteria

QC Sample	Criteria / Acceptable Range
FIELD QC SAMPLES	
Blind Replicate & Split Duplicate	RPD < 50 % When average concentration is > 10 x LOR/PQL 2 RPD < 75 % When average concentration is 5 to 10 x LOR/PQL RPD < 100 % When average concentration is < 5 x LOR/PQL
Trip Blank	Analytical Result < LOR/PQL
Trip Spike	± 30%
LABORATORY QC SAMPLES	
Laboratory Duplicates	RPD < 30 % When average concentration is > 10 x LOR/PQL RPD < 50 % When average concentration is 4 to 10 x LOR/PQL RPD < 100 % When average concentration is < 4 x LOR/PQL
Laboratory Control Samples	%R of 70 – 130% (General analytes) %R of 50 – 130% (Phenols) %R of 60 – 130% (OCP/OPPs) %R of 62 – 130% (Chromium)
Surrogates	%R of 70 – 130% (General analytes) %R of 50 – 130% (Phenols) %R of 60 – 130% (OCP/OPPs)
Matrix Spikes	%R of 70 – 130% (General analytes) %R of 50 – 130% (Phenols) %R of 60 – 130% (OCP/OPPs) %R of 62 – 130% (Chromium)
Method Blanks	Analytical Results < LOR/PQL

If data do not meet the QC Acceptance Criteria then a judgement is made as to whether the exceedance is critical in relation to the suitability of the data set. Otherwise the following steps will be taken:

- ♦ Request that the laboratory re-check or even re-analyse the sample.
- ♦ Inspect the sample for anomalies which may be causing the failure.
- ♦ If necessary, undertake additional sampling and analyses.

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² Both the LOR and PQL are interchangeable terms used by laboratories and is defined as the lowest concentration that can be reliably achieved within specific limits of precision and accuracy during routine laboratory operating conditions (reference 6).



### G3.3 RESULTS

## G3.3.1 Field QC Samples

Field QC samples collected and analysed as part of this investigation comprised:

## Soil Sampling

- ♦ Two blind replicates (SM311016-9 & AC011116-06)
- ♦ One split duplicate (SM311016-20)
- ♦ One trip blank (labelled 'trip blank')
- ♦ One trip spike (labelled 'trip spike')

### Water Sampling

- ♦ One trip blank (labelled 'trip blank')
- ♦ One trip spike (labelled 'trip spike')

A split duplicate sample was not collected during the soil groundwater sampling event due to the small number of samples analysed.

Tabulated results are presented at the conclusion of this Appendix. Table G3 and G4 provides a summary of the frequency of QC samples and lists results which do not meet the criteria established in Table G2.

 Table G3: QC Sample Acceptance Criteria - Soil

Туре	Frequency Conducted	Results Not Meeting the Criteria
Blind Replicates	Metals - 2 per 31 primary samples (6.45%)	
Split Duplicate	Metals - 1 per 31 primary samples (3.2%)	
	TRH/BTEX - 1 per 15 primary samples (6.67%)	
	PAHs - 1 per 16 primary samples (6.2%)	
Trip Blank	1 per sample batch	
Trip Spike	1 per sample batch	

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Table G4: QC Sample Acceptance Criteria - Water

Туре	Frequency Conducted	Results Not Meeting the Criteria
Trip Blank	1 per sample batch	
Trip Spike	1 per sample batch	

The quality control results all conformed to the sample acceptance criteria.

### G3.3.2 Laboratory QC

Laboratory QC results are provided in the laboratory reports while a summary of the results which exceeded the acceptance criteria is provided in Table G5.

Table G5: QC Sample Acceptance Criteria

Туре	Results Exceeding Criteria
Laboratory Duplicates	<del></del>
Laboratory Control Samples	
Surrogates	
Matrix Spikes	
Method Blanks	

The laboratory RPD acceptance criteria were considered acceptable.

## G4. DATA QUALITY ASSESSMENT

In accordance with reference 7, Data Quality Indicators (DQIs), specifically, precision, accuracy, representativeness, completeness and comparability, were used to assess the reliability of field procedures and analytical results.

#### G4.1 PRECISION

This is the measure of the variability (or reproducibility) of the data. In the field precision is achieved by using standard operating procedures which were adopted by GEE during this investigation. For laboratory analysis precision is assessed using blind replicates and trip spikes. The measured RPDs for the blind replicate samples and split samples were considered acceptable as were the analytical results for the trip spike.

#### G4.2 ACCURACY

Accuracy is a measure of the closeness of a measurement to the true parameter value. In the field, accuracy is achieved by using standard operating procedures

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which were adopted by GEE. For laboratory analysis, accuracy is assessed using tip blanks, rinsate blanks, method blanks, matrix spikes, surrogates and laboratory control samples. Considering that these QC samples were of an acceptable standard, GEE considers the laboratory data set to be accurate.

## **G4.3 REPRESENTATIVENESS**

This is the confidence (expressed qualitatively) that the data are representative of each media present on the site. This is achieved in the field and laboratory by using an adequate number of sampling points to characterise the site and ensuring that the samples collected were representative of the media from which they were collected. Additionally, samples should be analysed within necessary holding times depending on the analyte.

Environmental soil samples were collected from each borehole in general accordance with techniques described in Australian Standards AS4482.1 (reference 2), AS4482.2 (reference 8) and NEPM (reference 1), to maintain the representativeness and integrity of the samples. The number of sampling points exceeded the minimum required sampling density as defined by NSW EPA (reference 9), however, were considered sufficient for the purpose of this investigation.

The groundwater samples were collected in a manner consistent with the collection, handling and preservation principles enunciated in AS/NZS 5667.1:1998 (reference 3) and more specifically the procedures outlined AS/NZS 5667.11:1998 (reference 10) and USEPA's (1991) *Handbook: Groundwater – Volume II: Methodology* (reference 11), to maintain the representativeness and integrity of the samples.

Finally all samples were analysed within holding times.

#### G4.4 COMPLETENESS

This is a measure of whether all the data necessary to meet the project objectives, were collected. In the field and laboratory, this is achieved by sampling all critical locations and depths using acceptable methods and ensuring samples are analysed for appropriate chemicals.

GEE selected sufficient a sufficient number of sample points for the purpose of the investigation as defined by the NSW EPA (reference 9) and collected groundwater samples from all available monitoring wells on the site. Additionally,

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samples were analysed for chemicals of concern based on appropriate field screening measures and logging of unusual aesthetics which may indicate contamination. Combined with the fact that standard operating procedures were adopted by GEE, the investigation is assessed as being complete.

## G4.5 COMPARABILITY

This is a measure of confidence that data may be considered to be equivalent for each sampling and analysis event. Soil samples were collected by experienced GEE personnel using standard operating procedures and analysed in accordance with NATA accredited laboratory methods. The comparability of the data should be consistent as sampling protocols were employed throughout the duration of the fieldwork and analysis was undertaken by NATA registered laboratories using accredited analytical methods.

## G5. CONCLUSION

A review of the DQIs indicates that the field procedures and analytical results adopted for this investigation are able to be relied upon for making conclusions and recommendations regarding the contamination status of the site.

Appendix G QAQC Page 10 of 11



### References

- 1. NEPC, 1999: National Environment Protection Council (1999). National Environment Protection (Assessment of Site Contamination) Measure. Schedule B(2) Data Collection, Sample Design and Reporting.
- 2. Australian Standard AS4482.1 2005: Guide to the sampling and investigation of potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds.
- 3. Australian / New Zealand Standard AS/NZS5667.1 1998: Water Quality Sampling. Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples
- 4. NEPC, 1999: National Environment Protection Council (1999). National Environment Protection (Assessment of Site Contamination) Measure. Schedule B(3) Guideline of Laboratory Analysis of Potentially contaminated Soils.
- 5. Keith, 1991: Environmental sampling and Analysis, A practical guide. Lewis Publishers.
- 6. Popek (2003). Sampling and Analysis of Environmental Chemical Pollutants. Academic Press.
- 7. NSW DEC (2006) Contaminated Sites: Guidelines for NSW Site Auditor Scheme, 2nd Edition.
- 8. Australian Standard AS4482.2 1999: Guide to the sampling and investigation of potentially contaminated soil Part 2: Volatile substances.
- 9. NSW EPA, 1995: Environment Protection Authority NSW, 1995: Contaminated Sites: Sampling Design Guidelines, EPA NSW.
- 10. Australian / New Zealand Standard AS/NZS5667.11 1998: Water Quality Sampling. Part 1: Guidance on sampling of groundwaters.
- 11. US Environmental Protection Agency (USEPA), 1991: Handbook Groundwater Volume II: Groundwater.

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# **SOIL - Blind Replicate Results**

Sample Date		31/10/2016	31/10/2016		1/11/2016	1/11/2016	
Sample Identification		SM311016-08	SM311016-09	RPD	AC011116-05	AC011116-06	RPD
Analyte	Units	31013 1 10 10-06	31013 1 10 10-09		ACU11116-05	ACU11110-06	
Total Metals		Envirolab	Envirolab		Envirolab	Envirolab	
Arsenic	mg/kg	7	7	0%	6	6	0%
Cadmium	mg/kg	< 0.4	< 0.4		< 0.4	< 0.4	
Chromium	mg/kg	16	16	0%	16	16	0%
Copper	mg/kg	26	26	0%	16	16	0%
Lead	mg/kg	20	18	11%	27	20	30%
Mercury	mg/kg	<0.1	<0.1		<0.1	< 0.1	
Nickel	mg/kg	4	4	0%	10	9	11%
Zinc	mg/kg	27	25	8%	45	28	47%

Values in Bold Indicate: RPD > 50 % When average concentration is > 10 x LOR

RPD > 75 % When average concentration is 5 to 10 x LOR

RPD > 100 % When average concentration is < 5 x LOR

**SOIL - Blind Replicate Results** 

Sample Date		31/10/2016	31/10/2016	
Sample Identification		CN1044047 40	CN1044047 00	RPD
Analyte	Units	SM311016-19	SM311016-20	
Total Metals		Envirolab	Eurofins MGT	
Arsenic	mg/kg	6	7	18%
Cadmium	mg/kg	<0.4	<0.4	
Chromium	mg/kg	14	15	7%
Copper	mg/kg	18	20	11%
Lead	mg/kg	19	21	10%
Mercury	mg/kg	<0.1	<0.05	
Nickel	mg/kg	6	8	22%
Zinc	mg/kg	22	26	17%
Polycyclic Aromatic Hydroc	arbons			
Naphthalene	mg/kg	<0.1	<0.5	
Acenaphthylene	mg/kg	<0.1	<0.5	
Acenaphthene	mg/kg	<0.1	<0.5	
Fluorene	mg/kg	<0.1	<0.5	
Phenanthrene	mg/kg	<0.1	<0.5	
Anthracene	mg/kg	<0.1	<0.5	
Fluoranthene	mg/kg	<0.1	<0.5	
Pyrene	mg/kg	<0.1	<0.5	
Benz(a)anthracene	mg/kg	<0.1	<0.5	
Chrysene	mg/kg	<0.1	<0.5	
Benzo(b&k)fluoranthene	mg/kg	<0.1	<0.5	
Benzo(a)pyrene	mg/kg	<0.1	<0.5	
Indeno(1.2.3.cd)pyrene	mg/kg	<0.1	<0.5	
Dibenz(a.h)anthracene	mg/kg	<0.1	<0.5	
Benzo(g.h.i)perylene	mg/kg	<0.1	<0.5	
TOTAL PAHs	mg/kg	<0.5	<0.5	
BTEX				
Benzene	mg/kg	<0.2	<0.1	
Toluene	mg/kg	<0.5	<0.1	
Ethylbenzene	mg/kg	<1	<0.1	
meta- & para-Xylene	mg/kg	<2	<0.2	
ortho-Xylene	mg/kg	<1	<0.1	
Total Petroleum Hydrocarb				
F1 (C6-C10)	mg/kg	<25	<20	
F2 (>C10-C16)	mg/kg	<50	<50	
F3 (>C16-C34)	mg/kg	<100	<100	
F4 (>C34-C40)	mg/kg	<100	<100	

**Values in Bold Indicate:** RPD > 50 % When average concentration is > 10 x LOR

RPD > 75 % When average concentration is 5 to 10 x LOR RPD > 100 % When average concentration is < 5 x LOR

**SOIL - Trip Blank Results** 

301L - TTIP BIATIK RESUITS						
Laboratory:	Envirolab					
Laboratory Report N	umber:	156594				
Sample ID		Trin Plank				
Analyte	Units	Trip Blank				
ВТЕХ						
Benzene	mg/kg	< 0.2				
Toluene	mg/kg	< 0.5				
Ethylbenzene	mg/kg	<1				
meta- & para-Xylene	mg/kg	<2				
ortho-Xylene	mg/kg	<1				
Total Petroleum Hydrocarbo	ns					
C6 - C9 Fraction	mg/kg	<25				
C10 - C14 Fraction	mg/kg					
C15 - C28 Fraction	mg/kg					
C29 - C36 Fraction	mg/kg					

## Notes:

⁻⁻⁻ Not Analysed

**SOIL - Trip Spike Results** 

Laboratory	Envirolab	
Laboratory Report	Number:	156594
Sample I	D	Tuin Cuilco
Analyte	Trip Spike	
BTEX		
Benzene	mg/kg	84%
Toluene	mg/kg	91%
Ethylbenzene	mg/kg	92%
meta- & para-Xylene	mg/kg	90%
ortho-Xylene	mg/kg	89%

### Notes:

--- Not Analysed

**WATER - Trip Blank Results** 

WATER - TIP Blank Results						
Laboratory:	Envirolab					
Laboratory Report No	umber:	156594				
Sample ID		Trip Blank				
Analyte						
ВТЕХ						
Benzene	μg/L	<1				
Toluene μg/L		<1				
Ethylbenzene μg/L		<1				
meta- & para-Xylene	μg/L	<2				
ortho-Xylene μg/L		<1				
Total Petroleum Hydrocarbo						
C6 - C9 Fraction	<10					

### Notes:

--- Not Analysed

**WATER - Trip Spike Results** 

With Ent Trip opinio results						
Laboratory	Envirolab					
Laboratory Report	Number:	156594				
Sample I	D	Trin Cuilco				
Analyte	Trip Spike					
ВТЕХ						
Benzene	μg/L	120%				
Toluene	μg/L	110%				
Ethylbenzene	μg/L	100%				
meta- & para-Xylene	μg/L	110%				
ortho-Xylene	μg/L	110%				

## Notes:

--- Not Analysed



# **APPENDIX H**

LABORATORY REPORTS AND CERTIFICATES



email: sydney@envirolab.com.au envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

156594

CERTIFICATE OF ANALYSIS

Client:

**Geo-Environmental Engineering** 

82 Bridge St Lane Cove NSW 2066

Attention: Stephen McCormack

Sample log in details:

Your Reference: <u>E16017EAS</u>
No. of samples: 43 soils 3 waters

Date samples received / completed instructions received 02/11/16 / 02/11/16

**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: / Issue Date: 9/11/16 / 9/11/16

Date of Preliminary Report: Not Issued

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Accredited for compliance with ISO/IEC 17025 - Testing

Tests not covered by NATA are denoted with *.

### **Results Approved By:**

David Springer General Manager



	I					
vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	156594-1	156594-5	156594-7	156594-11	156594-13
Your Reference		SM311016-01	SM311016-05	SM311016-07	SM311016-11	SM311016-13
	-					
Date Sampled		31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 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
Surrogate aaa-Trifluorotoluene	%	105	103	108	101	102

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	156594-14	156594-18	156594-19	156594-20	156594-23
Your Reference		SM311016-14	SM311016-18	SM311016-19	AC011116-01	AC011116-04
	-					
Date Sampled		31/10/2016	31/10/2016	31/10/2016	1/11/2016	1/11/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 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
Surrogate aaa-Trifluorotoluene	%	104	102	109	108	106

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	156594-30	156594-32	156594-33	156594-36	156594-38
Your Reference		AC011116-11	AC011116-13	AC011116-14	AC011116-17	AC011116-19
	-					
Date Sampled		1/11/2016	1/11/2016	1/11/2016	1/11/2016	1/11/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 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
Surrogate aaa-Trifluorotoluene	%	108	111	109	105	106

vTRH(C6-C10)/BTEXN in Soil			
Our Reference:	UNITS	156594-43	156594-44
Your Reference		Trip Blank	Trip Spike
	-		
Date Sampled		31/10/2016	31/10/2016
Type of sample		soil	soil
Date extracted	-	04/11/2016	04/11/2016
Date analysed	-	07/11/2016	07/11/2016
TRHC6 - C9	mg/kg	<25	[NA]
TRHC6 - C10	mg/kg	<25	[NA]
vTPHC6 - C10 less BTEX (F1)	mg/kg	<25	[NA]
Benzene	mg/kg	<0.2	84%
Toluene	mg/kg	<0.5	91%
Ethylbenzene	mg/kg	<1	92%
m+p-xylene	mg/kg	<2	90%
o-Xylene	mg/kg	<1	89%
naphthalene	mg/kg	<1	[NA]
Surrogate aaa-Trifluorotoluene	%	115	87

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	156594-1	156594-5	156594-7	156594-11	156594-13
Your Reference		SM311016-01	SM311016-05	SM311016-07	SM311016-11	SM311016-13
	-					
Date Sampled		31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	05/11/2016	05/11/2016	05/11/2016	05/11/2016
TRHC10 - C14	mg/kg	<50	<50	<50	<50	<50
TRHC 15 - C28	mg/kg	<100	<100	<100	<100	<100
TRHC29 - C36	mg/kg	<100	<100	<100	<100	<100
TRH>C10-C16	mg/kg	<50	<50	<50	<50	<50
TRH>C10 - C16 less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C16-C34	mg/kg	<100	<100	<100	<100	<100
TRH>C34-C40	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	97	95	95	92	95

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	156594-14	156594-18	156594-19	156594-20	156594-23
Your Reference		SM311016-14	SM311016-18	SM311016-19	AC011116-01	AC011116-04
	-					
Date Sampled		31/10/2016	31/10/2016	31/10/2016	1/11/2016	1/11/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	05/11/2016	05/11/2016	05/11/2016	05/11/2016	05/11/2016
TRHC10 - C14	mg/kg	<50	<50	<50	<50	<50
TRHC 15 - C28	mg/kg	<100	<100	<100	<100	<100
TRHC29 - C36	mg/kg	<100	<100	<100	<100	<100
TRH>C10-C16	mg/kg	<50	<50	<50	<50	<50
TRH>C10 - C16 less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C16-C34	mg/kg	<100	<100	<100	<100	<100
TRH>C34-C40	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	102	102	100	92	95

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	156594-30	156594-32	156594-33	156594-36	156594-38
Your Reference		AC011116-11	AC011116-13	AC011116-14	AC011116-17	AC011116-19
Date Sampled	-	1/11/2016	1/11/2016	1/11/2016	1/11/2016	1/11/2016
· ·		1/11/2016 soil	soil			
Type of sample		SOII	SOII	soil	soil	soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	05/11/2016	05/11/2016	05/11/2016	05/11/2016	05/11/2016
TRHC10 - C14	mg/kg	<50	<50	<50	<50	<50
TRHC 15 - C28	mg/kg	<100	<100	<100	<100	<100
TRHC29 - C36	mg/kg	<100	<100	<100	<100	<100
TRH>C10-C16	mg/kg	<50	<50	<50	<50	<50
TRH>C10 - C16 less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C16-C34	mg/kg	<100	<100	<100	<100	<100
TRH>C34-C40	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	102	95	92	98	111

PAHs in Soil						
Our Reference:	UNITS	156594-1	156594-5	156594-7	156594-11	156594-13
Your Reference		SM311016-01	SM311016-05	SM311016-07	SM311016-11	SM311016-13
Date Sampled	-	31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
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	0.2
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.1	<0.1	0.5
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.5
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	0.2
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	0.4
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.05	0.1	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
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	0.2
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
Total+ve PAH's	mg/kg	NIL(+)VE	NIL(+)VE	0.16	0.15	2.6
Surrogate p-Terphenyl-d14	%	87	82	84	94	81

PAHs in Soil						
Our Reference:	UNITS	156594-14	156594-16	156594-18	156594-19	156594-20
Your Reference		SM311016-14	SM311016-16	SM311016-18	SM311016-19	AC011116-01
	-					
Date Sampled		31/10/2016	31/10/2016	31/10/2016	31/10/2016	1/11/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
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	0.3	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	0.6	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	0.5	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.3	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.07	0.2	<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
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
Total +ve PAH's	mg/kg	0.32	2.6	NIL(+)VE	NIL(+)VE	NIL(+)VE
Surrogate p-Terphenyl-d14	%	84	88	82	78	89

PAHs in Soil						
Our Reference:	UNITS	156594-23	156594-30	156594-32	156594-33	156594-36
Your Reference		AC011116-04	AC011116-11	AC011116-13	AC011116-14	AC011116-17
	-					
Date Sampled		1/11/2016	1/11/2016	1/11/2016	1/11/2016	1/11/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
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	0.2	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	0.2	<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	0.1	<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
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
Total +ve PAH's	mg/kg	NIL(+)VE	NIL(+)VE	NIL(+)VE	1.4	NIL(+)VE
Surrogate p-Terphenyl-d14	%	78	82	82	77	94

PAHs in Soil		
Our Reference:	UNITS	156594-38
Your Reference		AC011116-19
5.0	-	4/44/0040
Date Sampled		1/11/2016 soil
Type of sample		5011
Date extracted	-	04/11/2016
Date analysed	-	04/11/2016
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	0.3
Anthracene	mg/kg	0.1
Fluoranthene	mg/kg	1.0
Pyrene	mg/kg	1.1
Benzo(a)anthracene	mg/kg	0.5
Chrysene	mg/kg	0.7
Benzo(b,j+k)fluoranthene	mg/kg	1
Benzo(a)pyrene	mg/kg	0.65
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	0.5
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.8
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.8
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.8
Total +ve PAH's	mg/kg	6.2
Surrogate p-Terphenyl-d14	%	82

Asbestos ID - soils					
Our Reference:	UNITS	156594-1	156594-11	156594-13	156594-32
Your Reference		SM311016-01	SM311016-11	SM311016-13	AC011116-13
	-				
Date Sampled		31/10/2016	31/10/2016	31/10/2016	1/11/2016
Type of sample		soil	soil	soil	soil
Date analysed	-	8/11/2016	8/11/2016	8/11/2016	8/11/2016
Sample mass tested	g	Approx. 15g	Approx. 35g	Approx. 35g	Approx. 20g
Sample Description	-	Brown coarse- grained soil & rocks			
Asbestos ID in soil	-	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

Organochlorine Pesticides in soil				
Our Reference:	UNITS	156594-1	156594-11	156594-32
Your Reference		SM311016-01	SM311016-11	AC011116-13
	-			
Date Sampled		31/10/2016	31/10/2016	1/11/2016
Type of sample		soil	soil	soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016
Date analysed	=	05/11/2016	05/11/2016	05/11/2016
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
Surrogate TCMX	%	69	67	67

PCBs in Soil				
Our Reference:	UNITS	156594-1	156594-11	156594-32
Your Reference		SM311016-01	SM311016-11	AC011116-13
5.0	-	0.4.4.0.400.4.0	0.4.4.0.400.4.0	4/44/0040
Date Sampled		31/10/2016	31/10/2016	1/11/2016
Type of sample		soil	soil	soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	05/11/2016	05/11/2016	05/11/2016
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
Surrogate TCLMX	%	69	67	67

Acid Extractable metals in soil						
Our Reference:	UNITS	156594-1	156594-2	156594-4	156594-5	156594-7
Your Reference		SM311016-01	SM311016-02	SM311016-04	SM311016-05	SM311016-07
D . O	-	04/40/0040	04/40/0040	04/40/0040	04/40/0040	04/40/0040
Date Sampled		31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Arsenic	mg/kg	12	13	<4	5	6
Cadmium	mg/kg	1	<0.4	<0.4	<0.4	0.5
Chromium	mg/kg	26	13	18	16	15
Copper	mg/kg	33	24	36	27	62
Lead	mg/kg	790	56	550	65	260
Mercury	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	8	9	4	8	9
Zinc	mg/kg	170	46	36	47	200

Acid Extractable metals in soil						
Our Reference:	UNITS	156594-8	156594-9	156594-10	156594-11	156594-13
Your Reference		SM311016-08	SM311016-09	SM311016-10	SM311016-11	SM311016-13
	-					
Date Sampled		31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Arsenic	mg/kg	7	7	5	5	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	16	16	15	16	16
Copper	mg/kg	26	26	41	22	29
Lead	mg/kg	20	18	56	23	99
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	4	8	8	10
Zinc	mg/kg	27	25	56	25	150

Acid Extractable metals in soil						
Our Reference:	UNITS	156594-14	156594-15	156594-16	156594-17	156594-18
Your Reference		SM311016-14	SM311016-15	SM311016-16	SM311016-17	SM311016-18
Data Campled	-	24/40/2046	31/10/2016	31/10/2016	31/10/2016	31/10/2016
Date Sampled		31/10/2016				
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Arsenic	mg/kg	6	8	8	5	5
Cadmium	mg/kg	<0.4	<0.4	1	<0.4	<0.4
Chromium	mg/kg	16	18	16	14	13
Copper	mg/kg	20	22	78	16	13
Lead	mg/kg	33	20	470	19	21
Mercury	mg/kg	<0.1	<0.1	0.1	<0.1	0.2
Nickel	mg/kg	9	8	10	8	8
Zinc	mg/kg	170	110	230	24	31

Acid Extractable metals in soil Our Reference:	UNITS	156594-19	156594-20	156594-21	156594-23	156594-24
Your Reference		SM311016-19	AC011116-01	AC011116-02	AC011116-04	AC011116-05
Date Sampled Type of sample		31/10/2016 soil	1/11/2016 soil	1/11/2016 soil	1/11/2016 soil	1/11/2016 soil
Date prepared	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Arsenic	mg/kg	6	6	6	<4	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	14	13	15	6	16
Copper	mg/kg	18	17	16	4	16
Lead	mg/kg	19	19	19	6	27
Mercury	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Nickel	mg/kg	6	8	6	5	10
Zinc	mg/kg	22	28	20	26	45

Acid Extractable metals in soil						
Our Reference:	UNITS	156594-25	156594-26	156594-27	156594-29	156594-30
Your Reference		AC011116-06	AC011116-07	AC011116-08	AC011116-10	AC011116-11
	-					
Date Sampled		1/11/2016	1/11/2016	1/11/2016	1/11/2016	1/11/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Arsenic	mg/kg	6	6	7	5	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	16	12	15	12	12
Copper	mg/kg	16	24	21	19	23
Lead	mg/kg	20	40	21	23	18
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	9	10	12	9	8
Zinc	mg/kg	28	74	44	28	28

Acid Extractable metals in soil						
Our Reference:	UNITS	156594-32	156594-33	156594-34	156594-36	156594-38
Your Reference		AC011116-13	AC011116-14	AC011116-15	AC011116-17	AC011116-19
Date Sampled	-	1/11/2016	1/11/2016	1/11/2016	1/11/2016	1/11/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Arsenic	mg/kg	4	21	7	8	7
Cadmium	mg/kg	<0.4	0.6	<0.4	<0.4	<0.4
Chromium	mg/kg	11	21	11	16	14
Copper	mg/kg	24	54	24	21	21
Lead	mg/kg	16	110	14	32	50
Mercury	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	11	7	12	11
Zinc	mg/kg	29	180	34	49	64

Acid Extractable metals in soil						
Our Reference:	UNITS	156594-39	156594-40	156594-41	156594-48	156594-49
Your Reference		AC011116-20	AC011116-21	AC011116-22	SM311016-01-	AC011116-04 -
	-				[TRIPLICATE]	[TRIPLICATE]
Date Sampled		1/11/2016	1/11/2016	1/11/2016	31/10/2016	01/11/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Arsenic	mg/kg	8	6	7	12	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	1	<0.4
Chromium	mg/kg	16	13	17	27	7
Copper	mg/kg	20	19	16	35	7
Lead	mg/kg	18	23	20	880	20
Mercury	mg/kg	<0.1	<0.1	<0.1	0.2	0.1
Nickel	mg/kg	9	9	9	8	6
Zinc	mg/kg	40	37	28	170	42

	T			T	T	T
Moisture						
Our Reference:	UNITS	156594-1	156594-2	156594-4	156594-5	156594-7
Your Reference		SM311016-01	SM311016-02	SM311016-04	SM311016-05	SM311016-07
Date Sampled		31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016
Type of sample		soil	soil	soil	soil	soil
		3011	3011	3011	3011	
Date prepared	-	4/11/2016	4/11/2016	4/11/2016	4/11/2016	4/11/2016
Date analysed	-	7/11/2016	7/11/2016	7/11/2016	7/11/2016	7/11/2016
Moisture	%	18	15	22	21	15
	ı					T
Moisture						
Our Reference:	UNITS	156594-8	156594-9	156594-10	156594-11	156594-13
Your Reference		SM311016-08	SM311016-09	SM311016-10	SM311016-11	SM311016-13
Date Sampled	-	31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	4/11/2016	4/11/2016	4/11/2016	4/11/2016	4/11/2016
Date analysed	<u>-</u>	7/11/2016	7/11/2016	7/11/2016	7/11/2016	7/11/2016
Moisture	%	24	19	18	17	18
	ı			T	T	T
Moisture						
Our Reference:	UNITS	156594-14	156594-15	156594-16	156594-17	156594-18
Your Reference		SM311016-14	SM311016-15	SM311016-16	SM311016-17	SM311016-18
Date Sampled	-	31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	4/11/2016	4/11/2016	4/11/2016	4/11/2016	4/11/2016
Date analysed	-	7/11/2016	7/11/2016	7/11/2016	7/11/2016	7/11/2016
Moisture	%	15	19	13	17	17
	1			T	T	T
Moisture						
Our Reference:	UNITS	156594-19	156594-20	156594-21	156594-23	156594-24
Your Reference		SM311016-19	AC011116-01	AC011116-02	AC011116-04	AC011116-05
Date Sampled		31/10/2016	1/11/2016	1/11/2016	1/11/2016	1/11/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	4/11/2016	4/11/2016	4/11/2016	4/11/2016	4/11/2016
Date analysed	-	7/11/2016	7/11/2016	7/11/2016	7/11/2016	7/11/2016
Moisture	%	17	12	16	8.7	15
Moieture						
Moisture Our Reference:	UNITS	156594-25	156594-26	156594-27	156594-29	156594-30
Your Reference		AC011116-06	AC011116-07	AC011116-08	AC011116-10	AC011116-11
TOUT INDICIONE	-	7.0011110-00	7.0011110-01	7.0011110-00	7.0011110-10	7.0011110-11
Date Sampled		1/11/2016	1/11/2016	1/11/2016	1/11/2016	1/11/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	4/11/2016	4/11/2016	4/11/2016	4/11/2016	4/11/2016
	_					
Date analysed	-	7/11/2016	7/11/2016	7/11/2016	7/11/2016	7/11/2016
Moisture	%	15	15	17	21	20

Moisture Our Reference: Your Reference	UNITS	156594-32 AC011116-13	156594-33 AC011116-14	156594-34 AC011116-15	156594-36 AC011116-17	156594-38 AC011116-19
Date Sampled Type of sample		1/11/2016 soil	1/11/2016 soil	1/11/2016 soil	1/11/2016 soil	1/11/2016 soil
Date prepared	-	4/11/2016	4/11/2016	4/11/2016	4/11/2016	4/11/2016
Date analysed	-	7/11/2016	7/11/2016	7/11/2016	7/11/2016	7/11/2016
Moisture	%	15	13	15	13	14

Moisture				
Our Reference:	UNITS	156594-39	156594-40	156594-41
Your Reference		AC011116-20	AC011116-21	AC011116-22
	-			
Date Sampled		1/11/2016	1/11/2016	1/11/2016
Type of sample		soil	soil	soil
Date prepared	-	4/11/2016	4/11/2016	4/11/2016
Date analysed	-	7/11/2016	7/11/2016	7/11/2016
Moisture	%	15	15	16

		T	T	T	T	T
Misc Inorg - Soil	LINITO	450504.4	450504.0	450504.4	450504.5	450504.7
Our Reference:	UNITS	156594-1	156594-2	156594-4	156594-5	156594-7
Your Reference		SM311016-01	SM311016-02	SM311016-04	SM311016-05	SM311016-07
Date Sampled		31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016
Type of sample		soil	soil	soil	soil	soil
		07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
Date prepared	-					
Date analysed	-	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
pH 1:5 soil:water	pHUnits	6.0	6.7	5.3	5.9	6.2
Misc Inorg - Soil						
Our Reference:	UNITS	156594-8	156594-10	156594-11	156594-13	156594-14
Your Reference		SM311016-08	SM311016-10	SM311016-11	SM311016-13	SM311016-14
	-					
Date Sampled		31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
Date analysed	_	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
pH 1:5 soil:water	pHUnits	5.0	6.1	5.7	5.4	6.4
pri 1.0 con.water	prionito	0.0	0.1	0.7	0.4	0.4
Misc Inorg - Soil						
Our Reference:	UNITS	156594-15	156594-16	156594-17	156594-18	156594-19
Your Reference		SM311016-15	SM311016-16	SM311016-17	SM311016-18	SM311016-19
	-					
Date Sampled		31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
Date analysed	-	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
pH 1:5 soil:water	pH Units	6.5	5.8	6.3	6.6	7.2
Misc Inorg - Soil						
Our Reference:	UNITS	156594-20	156594-21	156594-23	156594-24	156594-26
Your Reference		AC011116-01	AC011116-02	AC011116-04	AC011116-05	AC011116-07
Deta Commission	-	4/44/0040	4/44/2040	1/11/2016	4/44/2040	4/44/2046
Date Sampled Type of sample		1/11/2016 soil	1/11/2016 soil	1/11/2016 soil	1/11/2016 soil	1/11/2016 soil
Date prepared	-	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
Date analysed	-	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
pH 1:5 soil:water	pHUnits	6.4	7.4	6.1	6.2	6.7
Mine Income Only						<u> </u>
Misc Inorg - Soil Our Reference:	UNITS	156594-27	156594-29	156594-30	156594-32	156594-33
Your Reference:	UNITS	AC011116-08	AC011116-10	AC011116-11	AC011116-13	AC011116-14
Tour Release	-	7.0011110-00	7.0011110-10	7.0011110-11	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	7.0011110-14
Date Sampled		1/11/2016	1/11/2016	1/11/2016	1/11/2016	1/11/2016
Type of sample		soil	soil	soil	soil	soil
 Date prepared	-	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
Date analysed	_	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
-	nUI leite					
pH 1:5 soil:water	pH Units	6.8	5.6	5.3	5.6	5.4

Misc Inorg - Soil Our Reference: Your Reference	UNITS	156594-34 AC011116-15	156594-36 AC011116-17	156594-38 AC011116-19	156594-39 AC011116-20	156594-40 AC011116-21
Date Sampled Type of sample		1/11/2016 soil	1/11/2016 soil	1/11/2016 soil	1/11/2016 soil	1/11/2016 soil
Date prepared	-	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
Date analysed	-	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
pH 1:5 soil:water	pH Units	6.7	5.9	5.8	5.7	5.3

Misc Inorg - Soil		
Our Reference:	UNITS	156594-41
Your Reference		AC011116-22
	-	
Date Sampled		1/11/2016
Type of sample		soil
Date prepared	-	07/11/2016
Date analysed	-	07/11/2016
pH 1:5 soil:water	pH Units	5.5

CEC						
Our Reference:	UNITS	156594-1	156594-2	156594-4	156594-5	156594-7
Your Reference		SM311016-01	SM311016-02	SM311016-04	SM311016-05	SM311016-07
	-					
Date Sampled		31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	08/11/2016	08/11/2016	08/11/2016	08/11/2016	08/11/2016
Date analysed	-	08/11/2016	08/11/2016	08/11/2016	08/11/2016	08/11/2016
Exchangeable Ca	meq/100g	7.9	12	3.3	7.4	12
Exchangeable K	meq/100g	0.3	0.2	0.3	0.1	1.1
Exchangeable Mg	meq/100g	1.2	0.66	1.2	0.66	2.5
Exchangeable Na	meq/100g	<0.1	0.14	<0.1	0.12	0.11
Cation Exchange Capacity	meq/100g	9.5	13	4.8	8.3	15

CEC						
Our Reference:	UNITS	156594-8	156594-10	156594-11	156594-13	156594-14
Your Reference		SM311016-08	SM311016-10	SM311016-11	SM311016-13	SM311016-14
	-					
Date Sampled		31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	08/11/2016	08/11/2016	08/11/2016	08/11/2016	08/11/2016
Date analysed	-	08/11/2016	08/11/2016	08/11/2016	08/11/2016	08/11/2016
Exchangeable Ca	meq/100g	3.3	9.3	4.8	5.1	10
Exchangeable K	meq/100g	0.3	0.7	0.2	0.3	0.2
Exchangeable Mg	meq/100g	2.2	2.3	1.5	0.97	1.2
Exchangeable Na	meq/100g	0.13	<0.1	0.17	<0.1	0.11
Cation Exchange Capacity	meq/100g	5.9	12	6.8	6.3	12

CEC						
Our Reference:	UNITS	156594-15	156594-16	156594-17	156594-18	156594-19
Your Reference		SM311016-15	SM311016-16	SM311016-17	SM311016-18	SM311016-19
	-					
Date Sampled		31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	08/11/2016	08/11/2016	08/11/2016	08/11/2016	08/11/2016
Date analysed	-	08/11/2016	08/11/2016	08/11/2016	08/11/2016	08/11/2016
Exchangeable Ca	meq/100g	7.9	8.6	6.9	6.5	8.9
Exchangeable K	meq/100g	0.2	0.5	0.2	0.2	0.2
Exchangeable Mg	meq/100g	1.4	0.89	0.83	0.71	2.1
Exchangeable Na	meq/100g	<0.1	<0.1	0.12	<0.1	<0.1
Cation Exchange Capacity	meq/100g	9.6	10	8.1	7.4	11

CEC						
Our Reference:	UNITS	156594-20	156594-21	156594-23	156594-24	156594-26
Your Reference		AC011116-01	AC011116-02	AC011116-04	AC011116-05	AC011116-07
Deta Canada d	-	4/44/0040	4/44/0040	4/44/0040	4/44/0040	4/44/0040
Date Sampled		1/11/2016	1/11/2016	1/11/2016	1/11/2016	1/11/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	08/11/2016	08/11/2016	08/11/2016	08/11/2016	08/11/2016
Date analysed	-	08/11/2016	08/11/2016	08/11/2016	08/11/2016	08/11/2016
Exchangeable Ca	meq/100g	8.2	7.9	3.1	5.9	13
Exchangeable K	meq/100g	0.3	0.2	0.1	0.4	0.2
Exchangeable Mg	meq/100g	0.72	2.0	0.64	1.1	1.1
Exchangeable Na	meq/100g	<0.1	<0.1	<0.1	<0.1	<0.1
Cation Exchange Capacity	meq/100g	9.3	10	3.9	7.5	14

CEC						
Our Reference:	UNITS	156594-27	156594-29	156594-30	156594-32	156594-33
Your Reference		AC011116-08	AC011116-10	AC011116-11	AC011116-13	AC011116-14
	-					
Date Sampled		1/11/2016	1/11/2016	1/11/2016	1/11/2016	1/11/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	08/11/2016	08/11/2016	08/11/2016	08/11/2016	08/11/2016
Date analysed	-	08/11/2016	08/11/2016	08/11/2016	08/11/2016	08/11/2016
Exchangeable Ca	meq/100g	11	3.8	1.5	5.5	9.7
Exchangeable K	meq/100g	0.2	0.2	0.2	0.7	0.2
Exchangeable Mg	meq/100g	1.7	1.9	1.5	2.2	0.82
Exchangeable Na	meq/100g	<0.1	<0.1	<0.1	<0.1	<0.1
Cation Exchange Capacity	meq/100g	13	5.9	3.2	8.4	11

CEC						
Our Reference:	UNITS	156594-34	156594-36	156594-38	156594-39	156594-40
Your Reference		AC011116-15	AC011116-17	AC011116-19	AC011116-20	AC011116-21
	-					
Date Sampled		1/11/2016	1/11/2016	1/11/2016	1/11/2016	1/11/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	08/11/2016	08/11/2016	08/11/2016	08/11/2016	08/11/2016
Date analysed	-	08/11/2016	08/11/2016	08/11/2016	08/11/2016	08/11/2016
Exchangeable Ca	meq/100g	8.0	4.9	8.3	3.4	2.8
Exchangeable K	meq/100g	0.2	0.5	0.4	0.2	0.2
Exchangeable Mg	meq/100g	1.9	1.8	1.6	1.8	0.98
Exchangeable Na	meq/100g	<0.1	<0.1	<0.1	0.18	<0.1
Cation Exchange Capacity	meq/100g	10	7.3	10	5.5	4.1

CEC		
Our Reference:	UNITS	156594-41
Your Reference		AC011116-22
	-	
Date Sampled		1/11/2016
Type of sample		soil
Date prepared	-	08/11/2016
Date analysed	-	08/11/2016
Exchangeable Ca	meq/100g	2.3
Exchangeable K	meq/100g	0.1
Exchangeable Mg	meq/100g	1.5
Exchangeable Na	meq/100g	0.11
Cation Exchange Capacity	meq/100g	4.0

VOCs in water		.=
Our Reference: Your Reference	UNITS	156594-45 SM021116-GW7
Your Reference	-	SIVIU21116-GVV7
Date Sampled		1/11/2016
Type of sample		water
Date extracted	-	04/11/2016
Date analysed	-	04/11/2016
Dichlorodifluoromethane	μg/L	<10
Chloromethane	μg/L	<10
Vinyl Chloride	μg/L	<10
Bromomethane	μg/L	<10
Chloroethane	μg/L	<10
Trichlorofluoromethane	μg/L	<10
1,1-Dichloroethene	μg/L	<1
Trans-1,2-dichloroethene	μg/L	<1
1,1-dichloroethane	μg/L	<1
Cis-1,2-dichloroethene	μg/L	<1
Bromochloromethane	μg/L	<1
Chloroform	μg/L	<1
2,2-dichloropropane	μg/L	<1
1,2-dichloroethane	μg/L	<1
1,1,1-trichloroethane	μg/L	<1
1,1-dichloropropene	μg/L	<1
Cyclohexane	μg/L	<1
Carbon tetrachloride	μg/L	<1
Benzene	μg/L	<1
Dibromomethane	μg/L	<1
1,2-dichloropropane	μg/L	<1
Trichloroethene	μg/L	<1
Bromodichloromethane	μg/L	<1
trans-1,3-dichloropropene	μg/L	<1
cis-1,3-dichloropropene	μg/L	<1
1,1,2-trichloroethane	μg/L	<1
Toluene	μg/L	<1
1,3-dichloropropane	μg/L	<1
Dibromochloromethane	μg/L	<1
1,2-dibromoethane	μg/L	<1
Tetrachloroethene	μg/L	<1
1,1,1,2-tetrachloroethane	μg/L	<1
Chlorobenzene	μg/L	<1
Ethylbenzene	μg/L	<1
Bromoform	μg/L	<1
m+p-xylene	μg/L	<2
Styrene	μg/L	<1
1,1,2,2-tetrachloroethane	μg/L	<1
o-xylene	μg/L	<1
1,2,3-trichloropropane	μg/L	<1

	I	
VOCs in water		
Our Reference:	UNITS	156594-45
Your Reference		SM021116-GW7
Date Sampled		1/11/2016
Type of sample		water
Isopropylbenzene	μg/L	<1
Bromobenzene	μg/L	<1
n-propyl benzene	μg/L	<1
2-chlorotoluene	μg/L	<1
4-chlorotoluene	μg/L	<1
1,3,5-trimethyl benzene	μg/L	<1
Tert-butyl benzene	μg/L	<1
1,2,4-trimethyl benzene	μg/L	<1
1,3-dichlorobenzene	μg/L	<1
Sec-butyl benzene	μg/L	<1
1,4-dichlorobenzene	μg/L	<1
4-isopropyl toluene	μg/L	<1
1,2-dichlorobenzene	μg/L	<1
n-butyl benzene	μg/L	<1
1,2-dibromo-3-chloropropane	μg/L	<1
1,2,4-trichlorobenzene	μg/L	<1
Hexachlorobutadiene	μg/L	<1
1,2,3-trichlorobenzene	μg/L	<1
Surrogate Dibromofluoromethane	%	92
Surrogate toluene-d8	%	94
Surrogate 4-BFB	%	104

	I			
vTRH(C6-C10)/BTEXNinWater				
Our Reference:	UNITS	156594-45	156594-46	156594-47
Your Reference		SM021116-GW7	Trip Blank	Trip Spike
	-			
Date Sampled		1/11/2016	1/11/2016	1/11/2016
Type of sample		water	water	water
Date extracted	-	04/11/2016	03/11/2016	03/11/2016
Date analysed	-	04/11/2016	03/11/2016	03/11/2016
TRHC6 - C9	μg/L	<10	<10	[NA]
TRHC6 - C10	μg/L	<10	<10	[NA]
TRHC6 - C10 less BTEX (F1)	μg/L	<10	<10	[NA]
Benzene	μg/L	<1	<1	120%
Toluene	μg/L	<1	<1	110%
Ethylbenzene	μg/L	<1	<1	100%
m+p-xylene	μg/L	<2	<2	110%
o-xylene	μg/L	<1	<1	110%
Naphthalene	μg/L	<1	<1	[NA]
Surrogate Dibromofluoromethane	%	92	104	111
Surrogate toluene-d8	%	94	102	90
Surrogate 4-BFB	%	104	98	98

svTRH (C10-C40) in Water		
Our Reference:	UNITS	156594-45
Your Reference		SM021116-GW7
	-	
Date Sampled		1/11/2016
Type of sample		water
Date extracted	-	04/11/2016
Date analysed	-	04/11/2016
TRHC10 - C14	μg/L	<50
TRHC 15 - C28	μg/L	<100
TRHC29 - C36	μg/L	<100
TRH>C10 - C16	μg/L	<50
TRH>C10 - C16 less Naphthalene (F2)	μg/L	<50
TRH>C16 - C34	μg/L	<100
TRH>C34 - C40	μg/L	<100
Surrogate o-Terphenyl	%	89

	I	
PAHs in Water		
Our Reference:	UNITS	156594-45
Your Reference		SM021116-GW7
Date Sampled		1/11/2016
Type of sample		water
		0.4/4.4/00.4.0
Date extracted	-	04/11/2016
Date analysed	-	04/11/2016
Naphthalene	μg/L	<1
Acenaphthylene	μg/L	<1
Acenaphthene	μg/L	<1
Fluorene	μg/L	<1
Phenanthrene	μg/L	<1
Anthracene	μg/L	<1
Fluoranthene	μg/L	<1
Pyrene	μg/L	<1
Benzo(a)anthracene	μg/L	<1
Chrysene	μg/L	<1
Benzo(b,j+k)fluoranthene	μg/L	<2
Benzo(a)pyrene	μg/L	<1
Indeno(1,2,3-c,d)pyrene	μg/L	<1
Dibenzo(a,h)anthracene	μg/L	<1
Benzo(g,h,i)perylene	μg/L	<1
Benzo(a)pyrene TEQ	μg/L	<5
Total +ve PAH's	μg/L	NIL(+)VE
Surrogate p-Terphenyl-d14	%	110

HM in water - dissolved		
Our Reference:	UNITS	156594-45
Your Reference		SM021116-GW7
	-	
Date Sampled		1/11/2016
Type of sample		water
Date prepared	-	04/11/2016
Date analysed	-	04/11/2016
Arsenic-Dissolved	μg/L	<1
Cadmium-Dissolved	μg/L	<0.1
Chromium-Dissolved	μg/L	<1
Copper-Dissolved	μg/L	1
Lead-Dissolved	μg/L	<1
Mercury-Dissolved	μg/L	<0.05
Nickel-Dissolved	μg/L	15
Zinc-Dissolved	μg/L	43

Method ID	Methodology Summary
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-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-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.  For soil results:-
	1. 'TEQ PQL' values are assuming all contributing PAHs reported as <pql actually="" and="" approach="" are="" at="" be="" calculation="" can="" conservative="" contribute="" false="" give="" given="" is="" may="" most="" not="" pahs="" positive="" pql.="" present.<="" td="" teq="" teqs="" that="" the="" this="" to=""></pql>
	2. 'TEQ zero' values are assuming all contributing PAHs reported as <pql and="" approach="" are="" below="" but="" calculation="" conservative="" contribute="" false="" is="" least="" more="" negative="" pahs="" pql.<="" present="" susceptible="" td="" teq="" teqs="" that="" the="" this="" to="" when="" zero.=""></pql>
	3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <pql a="" above.<="" and="" approaches="" are="" between="" conservative="" half="" hence="" least="" mid-point="" most="" pql.="" stipulated="" td="" the=""></pql>
	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.
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.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
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.
Metals-009	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.
Org-013	Water samples are analysed directly by purge and trap 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.
Metals-022 ICP-MS	Determination of various metals by ICP-MS.

	Client Reference: E16017EAS									
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate	Duplicate results				
vTRH(C6-C10)/BTEXNin					Sm#	Base II Duplicate II %RPD				
Soil						Base ii Bapiicate ii 701 ti B				
Date extracted	-			04/11/2	156594-1	04/11/2016  04/11/2016				
				016						
Date analysed	-			07/11/2 016	156594-1	07/11/2016  07/11/2016				
TRHC6 - C9	mg/kg	25	Org-016	<25	156594-1	<25  <25				
TRHC6 - C10	mg/kg	25	Org-016	<25	156594-1	<25  <25				
Benzene	mg/kg	0.2	Org-016	<0.2	156594-1	<0.2  <0.2				
Toluene	mg/kg	0.5	Org-016	<0.5	156594-1	<0.5  <0.5				
Ethylbenzene	mg/kg	1	Org-016	<1	156594-1	<1    <1				
m+p-xylene	mg/kg	2	Org-016	<2	156594-1	<2  <2				
o-Xylene	mg/kg	1	Org-016	<1	156594-1	<1    <1				
naphthalene	mg/kg	1	Org-014	<1	156594-1	<1    <1				
Surrogate aaa- Trifluorotoluene	%		Org-016	124	156594-1	105  102  RPD:3				
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate	Duplicate results				
svTRH (C10-C40) in Soil					Sm#	Base II Duplicate II %RPD				
						-				
Date extracted	-			04/11/2 016	156594-1	04/11/2016  04/11/2016				
Date analysed	-			04/11/2 016	156594-1	04/11/2016  05/11/2016				
TRHC10 - C14	mg/kg	50	Org-003	<50	156594-1	<50  <50				
TRHC 15 - C28	mg/kg	100	Org-003	<100	156594-1	<100  <100				
TRHC29 - C36	mg/kg	100	Org-003	<100	156594-1	<100  <100				
TRH>C10-C16	mg/kg	50	Org-003	<50	156594-1	<50  <50				
TRH>C16-C34	mg/kg	100	Org-003	<100	156594-1	<100  <100				
TRH>C34-C40	mg/kg	100	Org-003	<100	156594-1	<100  <100				
Surrogate o-Terphenyl	%		Org-003	70	156594-1	97  103  RPD:6				
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results				
PAHs in Soil						Base II Duplicate II %RPD				
Date extracted	-			04/11/2 016	156594-1	04/11/2016  04/11/2016				
Date analysed	-			04/11/2 016	156594-1	04/11/2016  04/11/2016				
Naphthalene	mg/kg	0.1	Org-012	<0.1	156594-1	<0.1  <0.1				
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	156594-1	<0.1  <0.1				
Acenaphthene	mg/kg	0.1	Org-012	<0.1	156594-1	<0.1  <0.1				
Fluorene	mg/kg	0.1	Org-012	<0.1	156594-1	<0.1  <0.1				
Phenanthrene	mg/kg	0.1	Org-012	<0.1	156594-1	<0.1  <0.1				
Anthracene	mg/kg	0.1	Org-012	<0.1	156594-1	<0.1  <0.1				
Fluoranthene	mg/kg	0.1	Org-012	<0.1	156594-1	<0.1  <0.1				
Pyrene	mg/kg	0.1	Org-012	<0.1	156594-1	<0.1  <0.1				
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	156594-1	<0.1  <0.1				
Chrysene	mg/kg	0.1	Org-012	<0.1	156594-1	<0.1  <0.1				
J 5 (1:1)					1-0-044	0.011.00				

Envirolab Reference: 156594 Revision No: R 00

mg/kg

0.2

Org-012

<0.2

156594-1

<0.2||<0.2

Benzo(b,j+k)

fluoranthene

	Client Reference: E16017EAS							
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results		
PAHs in Soil						Base II Duplicate II %RPD		
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	156594-1	<0.05  <0.05		
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	156594-1	<0.1  <0.1		
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	156594-1	<0.1  <0.1		
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	156594-1	<0.1  <0.1		
Surrogate p-Terphenyl- d14	%		Org-012	100	156594-1	87    81    RPD: 7		
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results		
Organochlorine Pesticides in soil						Base II Duplicate II %RPD		
Date extracted	-			04/11/2 016	156594-1	04/11/2016  04/11/2016		
Date analysed	-			05/11/2 016	156594-1	05/11/2016  05/11/2016		
HCB	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
alpha-BHC	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
gamma-BHC	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
beta-BHC	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
Heptachlor	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
delta-BHC	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
Aldrin	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
Endosulfan I	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
pp-DDE	mg/kg	0.1	Org-005	<0.1	156594-1	0.1    0.1    RPD: 0		
Dieldrin	mg/kg	0.1	Org-005	<0.1	156594-1	0.1    0.1    RPD: 0		
Endrin	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
pp-DDD	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
Endosulfan II	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
pp-DDT	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
Methoxychlor	mg/kg	0.1	Org-005	<0.1	156594-1	<0.1  <0.1		
Surrogate TCMX	%		Org-005	71	156594-1	69  68  RPD:1		

**Client Reference:** E16017EAS PQL QUALITYCONTROL UNITS METHOD Blank Duplicate **Duplicate results** Sm# PCBs in Soil Base II Duplicate II % RPD Date extracted 04/11/2 156594-1 04/11/2016 | 04/11/2016 016 05/11/2 05/11/2016 || 05/11/2016 Date analysed 156594-1 016 Org-006 Aroclor 1016 mg/kg 0.1 <0.1 156594-1 <0.1||<0.1 Org-006 Aroclor 1221 mg/kg 0.1 <0.1 156594-1 <0.1 || <0.1 Org-006 Aroclor 1232 mg/kg 0.1 <0.1 156594-1 <0.1||<0.1 Org-006 Aroclor 1242 mg/kg 0.1 <0.1 156594-1 <0.1||<0.1 Aroclor 1248 mg/kg 0.1 Org-006 <0.1 156594-1 <0.1||<0.1 Org-006 Aroclor 1254 mg/kg 0.1 <0.1 156594-1 <0.1 || <0.1 Aroclor 1260 mg/kg 0.1 Org-006 <0.1 156594-1 <0.1||<0.1 Surrogate TCLMX % Org-006 71 156594-1 69 | 68 | RPD: 1 QUALITYCONTROL UNITS PQL Blank METHOD **Duplicate results Duplicate** Sm# Acid Extractable metals Base II Duplicate II % RPD in soil 04/11/2 156594-1 04/11/2016 | 04/11/2016 Date prepared 016 04/11/2 156594-1 04/11/2016 | 04/11/2016 Date analysed 016 Metals-020 156594-1 12||10||RPD:18 Arsenic mg/kg 4 <4 Cadmium mg/kg 0.4 Metals-020 < 0.4 156594-1 1||1||RPD:0 Chromium mg/kg 1 Metals-020 <1 156594-1 26||32||RPD:21 Metals-020 156594-1 Copper mg/kg 1 <1 33 | 33 | RPD: 0 Lead mg/kg 1 Metals-020 <1 156594-1 790 | 750 | RPD: 5 Mercury mg/kg 0.1 Metals-021 <0.1 156594-1 0.2 || 0.1 || RPD: 67 Nickel Metals-020 156594-1 mg/kg 1 <1 8||14||RPD:55 Zinc mg/kg Metals-020 <1 156594-1 170 | 160 | RPD: 6 QUALITYCONTROL UNITS PQL METHOD Blank Duplicate **Duplicate results** Sm# Misc Inorg - Soil Base II Duplicate II % RPD 07/11/2 Date prepared 156594-1 07/11/2016 || 07/11/2016 016 07/11/2 07/11/2016 | 07/11/2016 Date analysed 156594-1 016 156594-1 6.0 || 5.9 || RPD: 2 pH 1:5 soil:water pH Units Inorg-001 [NT] QUALITYCONTROL UNITS PQL METHOD Blank CEC

08/11/2

016

08/11/2 016

<0.1

<0.1

<0.1

Metals-009

Metals-009

Metals-009

Envirolab Reference: 156594 Revision No: R 00

meq/100

meq/100

meq/100

g

0.1

0.1

0.1

Date prepared

Date analysed

Exchangeable Ca

Exchangeable K

Exchangeable Mg

QUALITY CONTROL CEC	UNITS	PQL	METHOD	Blank				
Exchangeable Na	meq/100	0.1	Metals-009	<0.1				
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate	Duplicate results	Spike Sm#	Spike %
VOCs in water					Sm#	Base II Duplicate II %RPD		Recovery
Date extracted	-			04/11/2 016	[NT]	[NT]	LCS-W2	04/11/2016
Date analysed	-			04/11/2 016	[NT]	[NT]	LCS-W2	04/11/2016
Dichlorodifluoromethane	μg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Chloromethane	μg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Vinyl Chloride	μg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Bromomethane	μg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Chloroethane	μg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Trichlorofluoromethane	μg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
1,1-Dichloroethene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Trans-1,2- dichloroethene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1-dichloroethane	μg/L	1	Org-013	<1	[NT]	[NT]	LCS-W2	100%
Cis-1,2-dichloroethene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromochloromethane	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Chloroform	μg/L	1	Org-013	<1	[NT]	[NT]	LCS-W2	100%
2,2-dichloropropane	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloroethane	μg/L	1	Org-013	<1	[NT]	[NT]	LCS-W2	100%
1,1,1-trichloroethane	μg/L	1	Org-013	<1	[NT]	[NT]	LCS-W2	97%
1,1-dichloropropene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Cyclohexane	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Carbon tetrachloride	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Benzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Dibromomethane	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloropropane	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Trichloroethene	μg/L	1	Org-013	<1	[NT]	[NT]	LCS-W2	121%
Bromodichloromethane	μg/L	1	Org-013	<1	[NT]	[NT]	LCS-W2	98%
trans-1,3- dichloropropene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
cis-1,3-dichloropropene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1,2-trichloroethane	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Toluene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichloropropane	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Dibromochloromethane	μg/L	1	Org-013	<1	[NT]	[NT]	LCS-W2	94%
1,2-dibromoethane	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Tetrachloroethene	μg/L	1	Org-013	<1	[NT]	[NT]	LCS-W2	96%
1,1,1,2- tetrachloroethane	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Chlorobenzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Ethylbenzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromoform	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
m+p-xylene	μg/L	2	Org-013	2	[NT]	[NT]	[NR]	[NR]

Client Reference: E16017EAS									
QUALITY CONTROL  VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results  Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery	
						·			
Styrene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
1,1,2,2- tetrachloroethane	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
o-xylene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
1,2,3-trichloropropane	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
Isopropylbenzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
Bromobenzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
n-propyl benzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
2-chlorotoluene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
4-chlorotoluene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
1,3,5-trimethyl benzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
Tert-butyl benzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
1,2,4-trimethyl benzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
1,3-dichlorobenzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
Sec-butyl benzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
1,4-dichlorobenzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
4-isopropyl toluene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
1,2-dichlorobenzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
n-butyl benzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
1,2-dibromo-3- chloropropane	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
1,2,4-trichlorobenzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
Hexachlorobutadiene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
1,2,3-trichlorobenzene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
Surrogate Dibromofluoromethane	%		Org-013	108	[NT]	[NT]	LCS-W2	87%	
Surrogate toluene-d8	%		Org-013	95	[NT]	[NT]	LCS-W2	97%	
Surrogate 4-BFB	%		Org-013	100	[NT]	[NT]	LCS-W2	102%	

Client Reference: E16017EAS									
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery	
vTRH(C6-C10)/BTEXNin Water						Base II Duplicate II %RPD			
Date extracted	-			04/11/2 016	[NT]	[NT]	LCS-W2	04/11/2016	
Date analysed	-			07/11/2 016	[NT]	[NT]	LCS-W2	04/11/2016	
TRHC6 - C9	μg/L	10	Org-016	<10	[NT]	[NT]	LCS-W2	106%	
TRHC6 - C10	μg/L	10	Org-016	<10	[NT]	[NT]	LCS-W2	106%	
Benzene	μg/L	1	Org-016	<1	[NT]	[NT]	LCS-W2	100%	
Toluene	μg/L	1	Org-016	<1	[NT]	[NT]	LCS-W2	103%	
Ethylbenzene	μg/L	1	Org-016	<1	[NT]	[NT]	LCS-W2	109%	
m+p-xylene	μg/L	2	Org-016	<2	[NT]	[NT]	LCS-W2	110%	
o-xylene	μg/L	1	Org-016	<1	[NT]	[NT]	LCS-W2	112%	
Naphthalene	μg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]	
Surrogate Dibromofluoromethane	%		Org-016	108	[NT]	[NT]	LCS-W2	87%	
Surrogate toluene-d8	%		Org-016	95	[NT]	[NT]	LCS-W2	97%	
Surrogate 4-BFB	%		Org-016	100	[NT]	[NT]	LCS-W2	102%	
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery	
svTRH(C10-C40)in Water						Base II Duplicate II %RPD			
Date extracted	-			04/11/2 016	[NT]	[NT]	LCS-W2	04/11/2016	
Date analysed	-			04/11/2 016	[NT]	[NT]	LCS-W2	04/11/2016	
TRHC10 - C14	μg/L	50	Org-003	<50	[NT]	[NT]	LCS-W2	111%	
TRHC 15 - C28	μg/L	100	Org-003	<100	[NT]	[NT]	LCS-W2	102%	
TRHC29 - C36	μg/L	100	Org-003	<100	[NT]	[NT]	LCS-W2	99%	
TRH>C10 - C16	μg/L	50	Org-003	<50	[NT]	[NT]	LCS-W2	111%	
TRH>C16 - C34	μg/L	100	Org-003	<100	[NT]	[NT]	LCS-W2	102%	
TRH>C34 - C40	μg/L	100	Org-003	<100	[NT]	[NT]	LCS-W2	99%	
Surrogate o-Terphenyl	%		Org-003	92	[NT]	[NT]	LCS-W2	71%	
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery	
PAHs in Water						Base II Duplicate II %RPD			
Date extracted	-			04/11/2 016	[NT]	[NT]	LCS-W1	04/11/2016	
Date analysed	-			04/11/2 016	[NT]	[NT]	LCS-W1	04/11/2016	
Naphthalene	μg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	93%	
Acenaphthylene	μg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]	
Acenaphthene	μg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]	
Fluorene	μg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	97%	
Phenanthrene	μg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	108%	
Anthracene	μg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]	
Fluoranthene	μg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	85%	
Pyrene	μg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	84%	
Benzo(a)anthracene	μg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]	

**Client Reference:** E16017EAS PQL QUALITYCONTROL UNITS METHOD Blank Duplicate **Duplicate results** Spike Sm# Spike % Sm# Recovery PAHs in Water Base II Duplicate II % RPD Chrysene μg/L [NT] 1 Org-012 <1 [NT] [NR] [NR] Benzo(b,j+k) μg/L 2 Org-012 <2 [NT] [NT] [NR] [NR] fluoranthene Benzo(a)pyrene μg/L 1 Org-012 <1 [NT] [NT] LCS-W1 122% Org-012 Indeno(1,2,3-c,d)pyrene 1 <1 [NT] [NT] [NR] [NR] μg/L Org-012 [NR] [NR] Dibenzo(a,h)anthracene μg/L [NT] [NT] 1 <1 Benzo(g,h,i)perylene μg/L Org-012 <1 [NT] [NT] [NR] [NR] % Org-012 90 [NT] [NT] LCS-W1 92% Surrogate p-Terphenyld14 QUALITYCONTROL UNITS PQL METHOD Blank Spike % **Duplicate Duplicate results** Spike Sm# Sm# Recovery Base II Duplicate II % RPD HM in water - dissolved 04/11/2 LCS-W2 04/11/2016 Date prepared [NT] [NT] 016 04/11/2 LCS-W2 04/11/2016 Date analysed [NT] [NT] 016 Metals-022 LCS-W2 Arsenic-Dissolved μg/L 1 <1 [NT] [NT] 99% ICP-MS Metals-022 Cadmium-Dissolved μg/L 0.1 <0.1 [NT] [NT] LCS-W2 102% ICP-MS Chromium-Dissolved Metals-022 100% μg/L 1 <1 [NT] [NT] LCS-W2 ICP-MS Copper-Dissolved Metals-022 LCS-W2 μg/L 1 <1 [NT] [NT] 92% ICP-MS Lead-Dissolved μg/L 1 Metals-022 <1 [NT] [NT] LCS-W2 106% ICP-MS Mercury-Dissolved μg/L 0.05 Metals-021 < 0.05 [NT] [NT] LCS-W2 98% Nickel-Dissolved Metals-022 LCS-W2 μg/L 1 <1 [NT] [NT] 97% ICP-MS Zinc-Dissolved μg/L Metals-022 <1 [NT] [NT] LCS-W2 99% ICP-MS QUALITYCONTROL UNITS Dup. Sm# Duplicate Spike Sm# Spike % Recovery vTRH(C6-C10)/BTEXNin Base + Duplicate + %RPD Soil Date extracted 156594-23 04/11/2016 || 04/11/2016 LCS-2 04/11/2016 Date analysed 156594-23 07/11/2016 || 07/11/2016 LCS-2 07/11/2016 LCS-2 117% TRHC6 - C9 mg/kg 156594-23 <25||<25 156594-23 <25||<25 LCS-2 117% TRHC6 - C10 mg/kg 156594-23 <0.2||<0.2 LCS-2 Benzene mg/kg 113% Toluene mg/kg 156594-23 <0.5||<0.5 LCS-2 123% Ethylbenzene mg/kg 156594-23 <1||<1 LCS-2 117% m+p-xylene mg/kg 156594-23 <2||<2 LCS-2 116%

<1||<1

<1 || <1

106||110||RPD:4

Envirolab Reference: 156594 Revision No: R 00

mg/kg

mg/kg

%

156594-23

156594-23

156594-23

o-Xylene

naphthalene

Surrogate aaa-Trifluorotoluene 128%

[NR]

101%

LCS-2

[NR]

LCS-2

Client Reference: E16017EAS									
QUALITYCONTROL	UNITS	Dup. Sm#	Duplicate	Spike Sm#	Spike % Recovery				
svTRH (C10-C40) in Soil			Base + Duplicate + %RPD						
Date extracted	-	156594-23	04/11/2016  04/11/2016	LCS-2	04/11/2016				
Date analysed	-	156594-23	05/11/2016  05/11/2016	LCS-2	04/11/2016				
TRHC10 - C14	mg/kg	156594-23	<50  <50	LCS-2	109%				
TRHC 15 - C28	mg/kg	156594-23	<100  <100	LCS-2	100%				
TRHC29 - C36	mg/kg	156594-23	<100  <100	LCS-2	96%				
TRH>C10-C16	mg/kg	156594-23	<50  <50	LCS-2	109%				
TRH>C16-C34	mg/kg	156594-23	<100  <100	LCS-2	100%				
TRH>C34-C40	mg/kg	156594-23	<100  <100	LCS-2	96%				
Surrogate o-Terphenyl	%	156594-23	95  95  RPD:0	LCS-2	83%				
QUALITYCONTROL	UNITS	Dup. Sm#	Duplicate	Spike Sm#	Spike % Recovery				
PAHs in Soil			Base + Duplicate + %RPD						
Date extracted	-	156594-23	04/11/2016  04/11/2016	LCS-2	04/11/2016				
Date analysed	-	156594-23	04/11/2016  04/11/2016	LCS-2	04/11/2016				
Naphthalene	mg/kg	156594-23	<0.1  <0.1	LCS-2	99%				
Acenaphthylene	mg/kg	156594-23	<0.1  <0.1	[NR]	[NR]				
Acenaphthene	mg/kg	156594-23	<0.1  <0.1	[NR]	[NR]				
Fluorene	mg/kg	156594-23	<0.1  <0.1	LCS-2	94%				
Phenanthrene	mg/kg	156594-23	<0.1  <0.1	LCS-2	92%				
Anthracene	mg/kg	156594-23	<0.1  <0.1	[NR]	[NR]				
Fluoranthene	mg/kg	156594-23	<0.1  <0.1	LCS-2	88%				
Pyrene	mg/kg	156594-23	<0.1  <0.1	LCS-2	90%				
Benzo(a)anthracene	mg/kg	156594-23	<0.1  <0.1	[NR]	[NR]				
Chrysene	mg/kg	156594-23	<0.1  <0.1	[NR]	[NR]				
Benzo(b,j+k)fluoranthene	mg/kg	156594-23	<0.2  <0.2	[NR]	[NR]				
Benzo(a)pyrene	mg/kg	156594-23	<0.05  <0.05	LCS-2	90%				
Indeno(1,2,3-c,d)pyrene	mg/kg	156594-23	<0.1  <0.1	[NR]	[NR]				
Dibenzo(a,h)anthracene	mg/kg	156594-23	<0.1  <0.1	[NR]	[NR]				
Benzo(g,h,i)perylene	mg/kg	156594-23	<0.1  <0.1	[NR]	[NR]				
Surrogate p-Terphenyl-d14	%	156594-23	78  85  RPD:9	LCS-2	138%				

		Client Reference	e: E16017EAS		
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate  Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	LCS-2	04/11/2016
Date analysed	-	[NT]	[NT]	LCS-2	05/11/2016
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	LCS-2	79%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	LCS-2	77%
Heptachlor	mg/kg	[NT]	[NT]	LCS-2	77%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	LCS-2	76%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	LCS-2	73%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	LCS-2	75%
Dieldrin	mg/kg	[NT]	[NT]	LCS-2	77%
Endrin	mg/kg	[NT]	[NT]	LCS-2	81%
pp-DDD	mg/kg	[NT]	[NT]	LCS-2	78%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	LCS-2	79%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	LCS-2	95%

		Client Referenc	e: E16017EAS		
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate  Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	LCS-2	04/11/2016
Date analysed	-	[NT]	[NT]	LCS-2	05/11/2016
Aroclor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	[NT]	[NT]	LCS-2	101%
Aroclor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	g/kg %	[NT]	[NT]	LCS-2	71%
QUALITYCONTROL	UNITS	Dup. Sm#	Duplicate	2002	7170
Acid Extractable metals in soil	CIVITO	Bup. Gm#	Base + Duplicate + %RPD		
Date prepared	-	156594-23	04/11/2016  04/11/2016		
Date analysed	-	156594-23	04/11/2016  04/11/2016		
Arsenic	mg/kg	156594-23	<4  <4		
Cadmium	mg/kg	156594-23	<0.4  <0.4		
Chromium	mg/kg	156594-23	6  6  RPD:0		
Copper	mg/kg	156594-23	4  6  RPD:40		
Lead	mg/kg	156594-23	6  11  RPD:59		
Mercury	mg/kg	156594-23	<0.1  <0.1		
Nickel	mg/kg	156594-23	5  6  RPD:18		
Zinc	mg/kg	156594-23	26  33  RPD:24		
QUALITYCONTROL	UNITS	Dup. Sm#	Duplicate	Spike Sm#	Spike % Recovery
Misc Inorg - Soil		'	Base + Duplicate + %RPD	•	,
Date prepared	-	[NT]	[NT]	LCS-1	07/11/2016
Date analysed	-	[NT]	[NT]	LCS-1	07/11/2016
pH 1:5 soil:water	pH Units	[NT]	[NT]	LCS-1	101%
QUALITYCONTROL	UNITS	Dup. Sm#	Duplicate	Spike Sm#	Spike % Recovery
CEC			Base + Duplicate + %RPD		
Date prepared	-	[NT]	[NT]	LCS-1	08/11/2016
Date analysed	-	[NT]	[NT]	LCS-1	08/11/2016
Exchangeable Ca	meq/100 g	[NT]	[NT]	LCS-1	108%
Exchangeable K	meq/100 g	[NT]	[NT]	LCS-1	107%
Exchangeable Mg	meq/100 g	[NT]	[NT]	LCS-1	107%
		İ			I

		Client Referenc	e: E16017EAS		
QUALITYCONTROL	UNITS	Dup.Sm#	Duplicate  Page 1 Duplicate 1 9/ P.P.D.	Spike Sm#	Spike % Recovery
vTRH(C6-C10)/BTEXNin Soil			Base + Duplicate + %RPD		
Date extracted	-	[NT]	[NT]	156594-11	04/11/2016
Date analysed	-	[NT]	[NT]	156594-11	07/11/2016
TRHC6 - C9	mg/kg	[NT]	[NT]	156594-11	103%
TRHC6 - C10	mg/kg	[NT]	[NT]	156594-11	103%
Benzene	mg/kg	[NT]	[NT]	156594-11	96%
Toluene	mg/kg	[NT]	[NT]	156594-11	99%
Ethylbenzene	mg/kg	[NT]	[NT]	156594-11	107%
m+p-xylene	mg/kg	[NT]	[NT]	156594-11	107%
o-Xylene	mg/kg	[NT]	[NT]	156594-11	109%
naphthalene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate aaa- Trifluorotoluene	%	[NT]	[NT]	156594-11	102%
QUALITYCONTROL	UNITS	Dup. Sm#	Duplicate	Spike Sm#	Spike % Recovery
svTRH (C10-C40) in Soil			Base + Duplicate + %RPD		
Date extracted	-	[NT]	[NT]	156594-11	04/11/2016
Date analysed	-	[NT]	[NT]	156594-11	05/11/2016
TRHC10 - C14	mg/kg	[NT]	[NT]	156594-11	107%
TRHC 15 - C28	mg/kg	[NT]	[NT]	156594-11	96%
TRHC29 - C36	mg/kg	[NT]	[NT]	156594-11	103%
TRH>C10-C16	mg/kg	[NT]	[NT]	156594-11	107%
TRH>C16-C34	mg/kg	[NT]	[NT]	156594-11	96%
TRH>C34-C40	mg/kg	[NT]	[NT]	156594-11	103%
Surrogate o-Terphenyl	%	[NT]	[NT]	156594-11	92%
QUALITY CONTROL PAHs in Soil	UNITS	Dup.Sm#	Duplicate	Spike Sm#	Spike % Recovery
			Base + Duplicate + %RPD		
Date extracted	-	[NT]	[NT]	156594-11	04/11/2016
Date analysed	-	[NT]	[NT]	156594-11	04/11/2016
Naphthalene	mg/kg	[NT]	[NT]	156594-11	92%
Acenaphthylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	[NT]	[NT]	156594-11	85%
Phenanthrene	mg/kg	[NT]	[NT]	156594-11	78%
Anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	[NT]	[NT]	156594-11	76%
Pyrene	mg/kg	[NT]	[NT]	156594-11	82%
Benzo(a)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(b,j+k)fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	[NT]	[NT]	156594-11	72%
Indeno(1,2,3-c,d)pyrene	mg/kg	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]

		Client Referenc	e: E16017EAS		
QUALITY CONTROL PAHs in Soil	UNITS	Dup.Sm#	Duplicate  Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
			Base : Bapiloate : 76141 B		
Benzo(g,h,i)perylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	[NT]	[NT]	156594-11	134%
QUALITYCONTROL	UNITS	Dup.Sm#	Duplicate	Spike Sm#	Spike % Recovery
Organochlorine Pesticides in soil			Base + Duplicate + %RPD		
Date extracted	-	[NT]	[NT]	156594-11	04/11/2016
Date analysed	-	[NT]	[NT]	156594-11	05/11/2016
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	156594-11	79%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	156594-11	77%
Heptachlor	mg/kg	[NT]	[NT]	156594-11	78%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	156594-11	76%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	156594-11	73%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	156594-11	76%
Dieldrin	mg/kg	[NT]	[NT]	156594-11	78%
Endrin	mg/kg	[NT]	[NT]	156594-11	81%
pp-DDD	mg/kg	[NT]	[NT]	156594-11	79%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	156594-11	82%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	156594-11	94%

Client Referen	ce: E16017EAS		
S Dup. Sm#	Duplicate  Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
[NT]	[NT]	156594-11	04/11/2016
[NT]	[NT]	156594-11	05/11/2016
g [NT]	[NT]	[NR]	[NR]
g [NT]	[NT]	[NR]	[NR]
g [NT]	[NT]	[NR]	[NR]
g [NT]	[NT]	[NR]	[NR]
g [NT]	[NT]	[NR]	[NR]
g [NT]	[NT]	156594-11	100%
g [NT]	[NT]	[NR]	[NR]
		156594-11	66%
		Spike Sm#	Spike % Recovery
·	Base + Duplicate + %RPD	·	,
156594-15	04/11/2016  04/11/2016	156594-11	04/11/2016
156594-15	04/11/2016  04/11/2016	156594-11	04/11/2016
g 156594-15	8  7  RPD:13	156594-11	79%
g 156594-15	<0.4  <0.4	156594-11	86%
g 156594-15	18  19  RPD:5	156594-11	91%
g 156594-15	22  21  RPD:5	156594-11	96%
g 156594-15	20  20  RPD:0	156594-11	81%
		156594-11	82%
		156594-11	86%
		156594-11	90%
'	Base + Duplicate + %RPD		
156594-15	07/11/2016  07/11/2016		
156594-15	07/11/2016  07/11/2016		
its 156594-15	6.5    6.4    RPD: 2		
S Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
156594-40	04/11/2016  04/11/2016	LCS-2	04/11/2016
156594-40	04/11/2016  04/11/2016	LCS-2	04/11/2016
g 156594-40	6  6  RPD:0	LCS-2	107%
450504.40	<0.4  <0.4	LCS-2	104%
g 156594-40	10.111 10.1		
g 156594-40 g 156594-40	13  13  RPD:0	LCS-2	110%
		LCS-2 LCS-2	110% 105%
g 156594-40	13  13  RPD:0		
g 156594-40 g 156594-40	13  13  RPD:0 19  18  RPD:5	LCS-2	105%
g 156594-40 g 156594-40 g 156594-40	13  13  RPD:0 19  18  RPD:5 23  27  RPD:16	LCS-2 LCS-2	105% 106%
	[NT] [NT] [NT] [NT] [NT] [NT] [NT] [NT]	Base + Duplicate + %RPD	Dup. Sm#   Duplicate   Spike Sm#

		Client Reference	e: E1601/EAS		
QUALITYCONTROL Misc Inorg - Soil	UNITS	Dup. Sm#	Duplicate  Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	_	[NT]	[NT]	LCS-2	07/11/2016
Date analysed	_	[NT]	[NT]	LCS-2	07/11/2016
•	ماناللم			LCS-2	100%
pH 1:5 soil:water	pHUnits	[NT]	[NT]		
QUALITY CONTROL CEC	UNITS	Dup. Sm#	Duplicate  Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	156594-40	08/11/2016  08/11/2016	LCS-2	08/11/2016
Date analysed	-	156594-40	08/11/2016  08/11/2016	LCS-2	08/11/2016
Exchangeable Ca	meq/100 g	156594-40	2.8  3.0  RPD:7	LCS-2	107%
Exchangeable K	meq/100 g	156594-40	0.2  0.2  RPD:0	LCS-2	103%
Exchangeable Mg	meq/100 g	156594-40	0.98  1.0  RPD:2	LCS-2	106%
Exchangeable Na	meq/100 g	156594-40	<0.1    <0.1	LCS-2	101%
QUALITY CONTROL Acid Extractable metals in	UNITS	Dup. Sm#	Duplicate  Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
soil					
Date prepared	-	[NT]	[NT]	LCS-3	04/11/2016
Date analysed	-	[NT]	[NT]	LCS-3	04/11/2016
Arsenic	mg/kg	[NT]	[NT]	LCS-3	109%
Cadmium	mg/kg	[NT]	[NT]	LCS-3	103%
Chromium	mg/kg	[NT]	[NT]	LCS-3	109%
Copper	mg/kg	[NT]	[NT]	LCS-3	103%
Lead	mg/kg	[NT]	[NT]	LCS-3	104%
Mercury	mg/kg	[NT]	[NT]	LCS-3	74%
Nickel	mg/kg	[NT]	[NT]	LCS-3	100%
Zinc	mg/kg	[NT]	[NT]	LCS-3	101%
QUALITY CONTROL Misc Inorg - Soil	UNITS	Dup. Sm#	Duplicate  Base + Duplicate + %RPD		
			•		
Date prepared	-	156594-41	07/11/2016  07/11/2016		
Date analysed	-	156594-41	07/11/2016  07/11/2016		
pH 1:5 soil:water	pHUnits	156594-41	5.5  5.5  RPD:0		Τ .
QUALITY CONTROL  Acid Extractable metals in	UNITS	Dup.Sm#	Duplicate  Page 1 Duplicate 1 9/ BBD	Spike Sm#	Spike % Recovery
soil			Base + Duplicate + %RPD		
Date prepared	-	[NT]	[NT]	156594-24	04/11/2016
Date analysed	-	[NT]	[NT]	156594-24	04/11/2016
Arsenic	mg/kg	[NT]	[NT]	156594-24	70%
Cadmium	mg/kg	[NT]	[NT]	156594-24	74%
Chromium	mg/kg	[NT]	[NT]	156594-24	81%
Copper	mg/kg	[NT]	[NT]	156594-24	87%
Lead	mg/kg	[NT]	[NT]	156594-24	82%
	•	•	•		•

Spike Sm#

156594-24

156594-24

156594-24

Spike % Recovery

76%

72%

79%

		Client Referenc	e: E16017EAS
QUALITYCONTROL	UNITS	Dup. Sm#	Duplicate
Acid Extractable metals in soil			Base + Duplicate + %RPD
Mercury	mg/kg	[NT]	[NT]
Nickel	mg/kg	[NT]	[NT]
Zinc	mg/kg	[NT]	[NT]
QUALITYCONTROL	UNITS	Dup. Sm#	Duplicate
Misc Inorg - Soil			Base + Duplicate + %RPD
Date prepared	-	156594-27	07/11/2016  07/11/2016
Date analysed	-	156594-27	07/11/2016  07/11/2016
pH 1:5 soil:water	pH Units	156594-27	6.8  6.9  RPD:1
QUALITYCONTROL	UNITS	Dup. Sm#	Duplicate
CEC			Base + Duplicate + %RPD
Date prepared	-	156594-4	08/11/2016  08/11/2016
Date analysed	-	156594-4	08/11/2016  08/11/2016
Exchangeable Ca	meq/100	156594-4	3.3    3.7    RPD: 11
	g		
Exchangeable K	meq/100	156594-4	0.3  0.3  RPD:0
	g	450504.4	4 0    4 0    DDD 0
Exchangeable Mg	meq/100 g	156594-4	1.2  1.3  RPD:8
Exchangeable Na	meq/100	156594-4	<0.1  <0.1
J J	g		- 11
QUALITYCONTROL	UNITS	Dup.Sm#	Duplicate
CEC			Base + Duplicate + %RPD
Date prepared	-	156594-16	08/11/2016  08/11/2016
Date analysed	-	156594-16	08/11/2016  08/11/2016
Exchangeable Ca	meq/100	156594-16	8.6  8.5  RPD:1
	g		
Exchangeable K	meq/100	156594-16	0.5  0.5  RPD:0
Evolung a ship Ma	g /400	450504.40	0.00    0.00    DDD, 4
Exchangeable Mg	meq/100 g	156594-16	0.89  0.88  RPD:1
Exchangeable Na	meg/100	156594-16	<0.1  <0.1
	g		"
QUALITYCONTROL	UNITS	Dup.Sm#	Duplicate
CEC			Base + Duplicate + %RPD
Date prepared	-	156594-29	08/11/2016  08/11/2016
Date analysed	-	156594-29	08/11/2016  08/11/2016
Exchangeable Ca	meq/100	156594-29	3.8  3.6  RPD:5
	g		
Exchangeable K	meq/100	156594-29	0.2  0.2  RPD:0
	g		
Exchangeable Mg	meq/100 g	156594-29	1.9  1.9  RPD:0
Exchangeable Na	meq/100	156594-29	<0.1  <0.1
Landingeableiva	g g	100004-20	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
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### **Report Comments:**

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 156594-1 for Ni. Therefore a triplicate result has been issued as laboratory sample number 156594-48.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 156594-23 for Pb. Therefore a triplicate result has been issued as laboratory sample number 156594-49.

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.

Note: Samples requested for asbestos testing were sub-sampled from jars provided by the client.

Asbestos ID was analysed by Approved Identifier: Paul Ching
Asbestos ID was authorised by Approved Signatory: Paul Ching

INS: Insufficient sample for this test PQL: Practical Quantitation Limit NT: Not tested

NR: Test not required RPD: Relative Percent Difference NA: Test not required

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### **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.

### **Laboratory Acceptance Criteria**

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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Revision No: R 00



CHEIL.	Geo-Environn	Geo-Environmental Engineering Pty Ltd	Pty Ltd	Client	roject	Name	Client Project Name and Number:	iper:					En	Envirolab Services	D Sel	Nice:	"	
Project Mgr	Igr S. McCormack	<u> </u>			E16017EAS	AS							127	shley	St, CI	atsw	ood, N	12 Ashley St, Chatswood, NSW, 2067
Sampler:	S. McCormack / A. Chiem	u		PO No.:									_					
Address:	82 Bridge Street			Enviro	ab Serv	ices Q	Envirolab Services Quote No.						Pho	Phone: 02 9910 6200	9910	6200		
	Lane Cove NSW 2066			Date re	Date results required:	aduirec							Fax:		9910	02 9910 6201		
Email:	stephen@geoenvironmental.com.au	nental.com.au		Or cho	se: st	andard	Or choose: standard / 1 day / 2 day / 3 day	/ 2 day	1/3 day		3 or	3 or 4 days	E-m	ail: a	nie@e	nvirol	abser	E-mail: ahie@envirolabservices.com.au
	andy@geoenvironmental.com.au	tal.com.au																
Phone:	0431 480 980			Note: Inform lab surcharge applies	orm lab ii applies	n advano	Note: Inform lab in advance if urgent turnaround is required surcharge applies	turnarour	nd is requi	- pa.			Con	Contact: Aileen Hie	ileen	Hë		
	Sample in	Sample information							Ĭ	ests Re	Tests Required				7			Comments
Envirolab Sample ID	b Client Sample ID	Date sampled	Type of sample	Combination 3	s& nothenidmoD	4 noitsnidmo	Combination 5b	Combination 5	Combination 5a	Metals (Std8)	Hq	VOCs	≥HAq	BTEX / Volatile HRT	ХЭТВ	СЕС/РН	хэта\нят	Provide as much information about the sample as you can
-	SM311016-01	31/10/2016	soil jar			T	-	-		H	L				1	1		
2	SM311016-02	31/10/2016	soil jar							1						1		
e	SM311016-03	31/10/2016	soil jar															
7	SM311016-04	31/10/2016	soil jar						-	1						1		Envirolab Services
5	SM311016-05	31/10/2016	soil jar	1												1	E	OROUNE Chatswo
9	SM311016-06	31/10/2016	soil jar					-										Ph: (02) 9910 62
#	SM311016-07	31/10/2016	soil jar	1												-1	31	ppcoci
95	SM311016-08	31/10/2016	soil jar							1						1	D	Date Received: 0 2 11-2016
6	SM311016-09	31/10/2016	soil jar							7							= 6	Time Received: 17:00
Q	SM311016-10	31/10/2016	soil jar							-						1	1	Temp: Cool/Ambient
=	SM311016-11	31/10/2016	soil jar						1							1	Ö	Coolings Toelloepack
12	SM311016-12	31/10/2016	soil jar						$\vdash$								Š	Security: Intact/Broken/None
13	SM311016-13	31/10/2016	soil jar		1		7									1		
Relinquis	Relinquished by (company):	Geo-Environmental Engineering	Engineering	Received by (		company):	ny): ELS	5					Sam	oles Re	:eived:	Cool or	Ambie	Samples Received: Cool or Ambient (circle one)
Print Name:	ne:	S. McCormack		Print Name:	ame:	3	smes.						Tem	Temperature Recieved at:	e Recie	ved at:		(if applicable)
Date & Time:	ime:	02-Nov-16		Date & Time:	Time:	20	11.2	2016	13.00	0			Tran	sported	by: H	and deli	ivered	Transported by: Hand delivered / courier
Signature:	ä	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		Signature:	ire:	1	9	1										Dans No. 1 of 4



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Client:	Geo-Environn	Geo-Environmental Engineering Pty Ltd	oty Ltd	Client Project		Vame a	Name and Number:	nper:						VILOID	0 26	Envirolab services		
Project Mgr	S. McCormack	<b>Y</b>			E16017EAS	AS							12	Ashley	St, C	hatswo	od, N	12 Ashley St, Chatswood, NSW, 2067
Sampler:	S. McCormack	k		PO No.:									1					
Address:	82 Bridge Street			Envirolab Services Quote No.	b Serv	ces Qu	ote No						풉	ne: 0	9910	Phone: 02 9910 6200		
	Lane Cove NSW 2066			Date results required:	sults re	quired							Fax:		166	02 9910 6201		
Email:	stephen@geoenvironmental.com.au	nental.com.au		Or choc	se: sta	ndard	/ 1 day	/ 2 da	Or choose: standard / 1 day / 2 day / 3 day	^	30	3 or 4 days		ail: a	hie@e	nvirol	abser	E-mail: ahie@envirolabservices.com.au
Phone:	0431 480 980			Note: Inform lab i surcharge applies	rm lab in applies	advance	if urgent	turnarou	in advance if urgent turnaround is required -	ired -			Cor	Contact: Aileen Hie	Aileen	Hie		
	Sample in	Sample information								Tests Required	equire	-						Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Combination 3	SE noinstion 3a	4 noitenidmo	Combination 5b	Combination 5	Combination 5a	0Cb/0bbs	Metals (Std8)	ΛοCs	sHAq	BTEX / Volatile TRH	ВТЕХ	сес/рн	хэта\нят	Provide as much information about the sample as you can
4	SM311016-14	31/10/2016	Soil jar	1	T				-	H	H	H	H			1		
15	SM311016-15	31/10/2016	Soil jar								1					1		
91	SM311016-16	31/10/2016	Soil jar										1			1		
立	SM311016-17	31/10/2016	Soil jar													1		
91	SM311016-18	31/10/2016	Soil jar	1									-			1		
19	SM311016-19	31/10/2016	Soil jar	1									-			1		
20	AC011116-01	1/11/2016	Soil jar	1									-			1		
7	AC011116-02	1/11/2016	Soil jar										-			1		
22	AC011116-03	1/11/2016	Soil jar							-	-	-	-					
23	AC011116-04	1/11/2016	Soil jar	1			H						+			1		
54	AC011116-05	1/11/2016	Soil jar								1		-			1		
25	AC011116-06	1/11/2016	Soil jar									-	+					
Relinquish	Relinquished by (company):	Geo-Environmental Engineering	Engineering	Received by (		company):	1y): ELG	57					San	ples Re	ceived	Cool or	Ambie	Samples Received: Cool or Ambient (circle one)
Print Name:		S. McCormack		Print Name:	ame:	Ž	Jenne?	_					Tem	Temperature Recieved at:	e Reci	eved at:		(if applicable)
Date & Time:	ie:	02-Nov-16		Date & Time:	Time:	02.	11.2016		4.00	0			Tra	sporte	by: H	and deli	vered	Transported by: Hand delivered / courier
								4					-					



Client:	Geo-Environr	Geo-Environmental Engineering Pty Ltd	Pty Ltd	Client Project Name and Number:	roject I	lame a	ny pu	mper:					ᇤ	virol	ab Se	<b>Envirolab Services</b>	s	
Project Mgr	gr S. McCormack	×		Е	E16017EAS	S							17	Ashle	y St, (	hatsw	ood, N	12 Ashley St, Chatswood, NSW, 2067
Sampler:	S. McCormack	×		PO No.:									7					
Address:	82 Bridge Street			Envirolab Services Quote No.	b Serv	ces Qu	ote No						F.	one: 0	2 991	Phone: 02 9910 6200	_	
	Lane Cove NSW 2066			Date results required:	sults re	quired							Fax:		2 991	02 9910 6201	_	
Email:	stephen@geoenvironmental.com.au	nental.com.au		Or choose: standard / 1 day / 2 day / 3 day	se: sta	ndard	/ 1 day	/ 2 da	y/3d	ay	30	3 or 4 days		nail:	ahie@	enviro	labser	E-mail: ahie@envirolabservices.com.au
Phone:	0431 480 980			Note: Inform lab in advance if urgent turnaround is required surcharge applies	rm lab in applies	advance	if urgen	t turnarou	und is req	uired -			S	tact:	Contact: Aileen Hie	Hie .		
	Sample ir	Sample information								Tests	<b>Tests Required</b>	-						Comments
Envirolab Sample ID	b Client Sample ID	Date sampled	Type of sample	Combination 3	S noitenidmo	4 noitenidmo	Combination 5b	Combination 5	62 noirenidmo3	OCP/OPPs	Metals (Std8)	γοCs	2HAq	BTEX / Volatile TRH	ВТЕХ	СЕС/рн	хэта\нят	Provide as much information about the sample as you can
26	AC011116-07	1/11/2016	Soil jar		F	H					1	H	H			1		
47	AC011116-08	1/11/2016	Soil jar								1	-				-1		
57	AC011116-09	1/11/2016	Soil jar															
20	AC011116-10	1/11/2016	Soil jar								1		-			-1		
30	AC011116-11	1/11/2016	Soil jar	1							-					-1		
121	AC011116-12	1/11/2016	Soil jar								=						1	
32	AC011116-13	1/11/2016	Soil jar						1							7		
22		1/11/2016	Soil jar	1												-1		
45	AC011116-15	1/11/2016	Soil jar								-1					1		
38	AC011116-16	1/11/2016	Soil jar						-		-	-						
36	AC011116-17	1/11/2016	Soil jar	1							-	-				П		
42	AC011116-18	1/11/2016	Soil jar									-						
R	AC011116-19	1/11/2016	Soil jar	1							-					1		
x	AC011116-20	1/11/2016	Soil jar				7				1					1		
Relinqui	Relinquished by (company):	Geo-Environmental Engineering	Engineering	Received by (	d by (c	ompar	company):	57					San	ples R	eceived	: Cool o	r Ambie	Samples Received: Cool or Ambient (circle one)
Print Name:	ne:	S. McCormack		Print Name:	,	Jes	ernes	2					Ten	peratu	re Rec	Temperature Recieved at:		(if applicable)
Date & Time:	me:	02-Nov-16		Date & Time:	Time:	20	-111-	02.11.2010		400			Tra	nsporte	d by:	land de	ivered	Transported by: Hand delivered / courier

**ENVIROLAB SERVICES** 



12 Ashley St, Chatswood, NS   25 McCormack   25 M	Client:	Geo-Environm	Geo-Environmental Engineering Pty Ltd	Pty Ltd	Client Project Name and Number:	roject	Name	and Nur	nber:					2	Envirolab services	200	3		
Standard Sunder Sunder   Standard Sunder Sunder Note	Project Mg		,		u	16017E	AS							12 A	shley	st, ch	atswo	od, N	SW, 2067
Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent Sample information   Colent	Sampler:	S. McCormack	,		PO No.														
Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part   Part	Address:	82 Bridge Street			Envirol	ab Sen	ices Q	note No						Phon	ie: 02	9910	6200		
Sample information   Contact: Sample of Choose: Standard of 1 day / 2 day / 3 day   Sort 4 days   E-mail: ablie@envirolabservice		Lane Cove NSW 2066			Date re	sults r	equirec							Fax:		9910	6201		
Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample information   Sample	Email:	stephen@geoenvironm	ental.com.au		Or cho	se: st	andard	/ 1 day	/ 2 day	//3 da	^	3 or	4 days	E-ma	il: ah	ie@en	virola	bserv	ices.com.au
Client Sample information   Combination   Sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type of sample   Type	Phone:	0431 480 980			Note: Inf surcharge	orm lab i	n advano	e if urgent	turnaroui	nd is requ	ired -			Cont	act: A	leen l	lie		
ACO11116-21 1/11/2016   Soil jar   ACO11116-22 1/11/2016   Soil jar   ACO11116-22 1/11/2016   Soil jar   ACO11116-22 1/11/2016   Soil jar   ACO11116-23 1/11/2016   Soil jar   ACO11116-23 1/11/2016   Soil jar   ACO11116-23 1/11/2016   Soil jar   ACO11116-23 1/11/2016   Soil jar   ACO11116-23 1/11/2016   Soil jar   ACO11116-23 1/11/2016   Soil jar   ACO11116-23 1/11/2016   Soil jar   ACO11116-23 1/11/2016   Soil jar   ACO11116-23 1/11/2016   Soil jar   ACO11116-23 1/11/2016   Soil jar   ACO11116-23 1/11/2016   Soil jar   ACO11116-23 1/11/2016   Acontain		Sample in	formation								ests Re	quired							Comments
AC011116-21 1/11/2016 Soil jar AC011116-22 1/11/2016 Soil jar AC011116-22 1/11/2016 Soil jar AC011116-23 1/11/2016 Soil jar Trip Blank 31/10/2016 Soil jar Trip Blank 31/10/2016 Water 1 Trip Blank 2/11/2016 Water 1 Trip Blank 2/11/2016 Water 1 Trip Spike 2/11/2016 Water 1 Trip Spike 2/11/2016 Water 1 Trip Spike 2/11/2016 Water Trip Spike 2/11/2016 Water Trip Spike 2/11/2016 Water Trip Spike 2/11/2016 Water Trip Spike 2/11/2016 Water Trip Spike 3/11/2016 Water Trip Spike 3/11/2	Envirolab Sample II		Date sampled	Type of sample	E noitenidmoD	Se noitenidmo	4 noitsnidmo						VOCs	sHAq	BTEX \ Volatile HЯT	ХЭТВ	СЕС/рн	хэта\нят	Provide as much information about the sample as you can
AC01116-22         1/11/2016         Soil jar         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1 <td>900</td> <td></td> <td>1/11/2016</td> <td>Soil jar</td> <td></td> <td>T</td> <td>t</td> <td>H</td> <td>H</td> <td>H</td> <td>-</td> <td></td> <td>L</td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td>	900		1/11/2016	Soil jar		T	t	H	H	H	-		L				1		
AC011116-23 1/11/2016   Soil jar   1   1   1   1   1   1   1   1   1	11	AC011116-22	1/11/2016	Soil jar							1						1		
Trip Blank   31/10/2016   Soil jar   1   1   1   1   1   1   1   1   1	24	AC011116-23	1/11/2016	Soil jar															
Trip Spike   31/10/2016   Water   1   1   1   1   1   1   1   1   1	43	Trip Blank	31/10/2016	Soil jar											1				
SM021116-GW7 2/11/2016 Water	なな	Trip Spike	31/10/2016	Soil jar												-1			
Trip Blank	45	SM021116-GW7	2/11/2016	Water	1						-	_	П						
Trip Spike	40	Trip Blank	2/11/2016	Water							-				1				
ed by (company):         Geo-Environmental Engineering         Received by (company):         \$\mathcal{L}\mathcal{L}\mathcal{S}\$         Samples Received:         Cool or Ambie           e:         S. McCormack         Print Name:         \mathcal{L}\mathcal{L}\mathcal{S}\$         Temperature Recieved at:           e:         02-Nov-16         Signature:         Signature:         Signature:	17	Trip Spike	2/11/2016	Water				1	+	+	+							T	
ed by (company):         Geo-Environmental Engineering         Received by (company):         \$\frac{2}{2}\frac{1}{3}\frac{2}{3}\frac{1}{3}\frac{2}{3}\frac{1}{3}\frac{2}{3}\frac{1}{3}\frac{2}{3}\frac{1}{3}\frac{2}{3}\frac{1}{3}\frac{2}{3}\frac{1}{3}\frac{2}{3}\frac{1}{3}\frac{2}{3}\frac{1}{3}\frac{2}{3}\frac{1}{3}\frac{2}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{						П			H				Ш						
ed by (company): Geo-Environmental Engineering Received by (company): ELS  Samples Received: Cool or Ambie  Samples Received: Cool or Ambie  Temperature Recieved at:  Temperature Recieved at:  Temperature Recieved at:  Signature:  Signature:		*								+	+	4				T	T	T	
ed by (company):       Geo-Environmental Engineering       Received by (company):       £LS       Samples Received: Cool or Ambie         e:       S. McCormack       Print Name:       Jown 29       Temperature Recieved at:         ne:       02-Nov-16       Date & Time:       Q.N. 2016       13.00         signature:       Signature:       Signature:								+		+		-						T	
Print Name: Jown29  Temperature Recieved at:  O2-Nov-16  Date & Time: C2-N-2010 13-00  Transported by: Hand delivered Journal Control of Signature:	Relinquish	ed by (company):	Geo-Environmental	Engineering	Receiv		compa	-1 1	57	$\  \ $	$\  \ $	$\  \ $		Samp	les Rec	eived: 0	ool or	Ambier	nt (circle one)
Date & Time: CANACIO 13:00 Transported by: Hand delivered Signature:	Print Nam	e:	S. McCormack		Print N	ame:	7	smel	2					Temp	erature	Reciev	ed at:		(if applicable)
Signature:	Date & Tir	ne:	02-Nov-16		Date &	Time:	8	1.80	2	3.0	0			Trans	ported	by: Ha	nd deliv	/ para/	courier
in installation	Signature:				Signat	ire:	1	d	1	\									Page No: 4 of 4



Geo-Environmental Engineering Pty Ltd 82 Bridge St Lane Cove NSW 2066 ilac-mra



# Certificate of Analysis

NATA Accredited Accreditation Number 1261 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: Stephen McCormack

Report521919-SProject nameE16017EASReceived DateNov 01, 2016

Client Sample ID			SM311016-20
Sample Matrix			Soil
Eurofins   mgt Sample No.			S16-No00763
Date Sampled			Oct 31, 2016
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM		Offic	
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
BTEX	1 00	ıg/ng	100
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	91
Total Recoverable Hydrocarbons - 2013 NEPM		,,,	Ţ.
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
Polycyclic Aromatic Hydrocarbons	<u> </u>	1 5 5	
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5



Client Sample ID Sample Matrix				SM311016-20 Soil
Eurofins   mgt Sample No.				S16-No00763
Date Sampled				Oct 31, 2016
Test/Reference		LOR	Unit	
Polycyclic Aromatic Hydrocarbons				
Phenanthrene		0.5	mg/kg	< 0.5
Pyrene		0.5	mg/kg	< 0.5
Total PAH*		0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)		1	%	108
p-Terphenyl-d14 (surr.)		1	%	95
Total Recoverable Hydrocarbons - 2013	NEPM Fraction	ons		
TRH >C10-C16		50	mg/kg	< 50
TRH >C16-C34		100	mg/kg	< 100
TRH >C34-C40		100	mg/kg	< 100
Heavy Metals				
Arsenic		2	mg/kg	7.2
Cadmium		0.4	mg/kg	< 0.4
Chromium		5	mg/kg	15
Copper		5	mg/kg	20
Lead		5	mg/kg	21
Mercury		0.05	mg/kg	< 0.05
Nickel		5	mg/kg	7.5
Zinc		5	mg/kg	26
% Moisture		1	%	15

Report Number: 521919-S



### Sample History

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

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Nov 08, 2016	14 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
BTEX	Sydney	Nov 07, 2016	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Nov 07, 2016	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Nov 08, 2016	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Nov 07, 2016	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Metals M8	Sydney	Nov 07, 2016	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
% Moisture	Sydney	Nov 01, 2016	14 Day

⁻ Method: LTM-GEN-7080 Moisture

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82 Bridge St

Lane Cove

NSW 2066

E16017EAS

**Company Name:** 

**Project Name:** 

Address:

Melbourne

2-5 Kingston Town Close Oakleigh VIC 3166 Phone: +61 3 8564 5000 NATA # 1261 Site # 1254 & 14271

Sydney Unit F3, Building F 16 Mars Road Lane Cove West NSW 2066 Phone: +61 2 9900 8400 NATA # 1261 Site # 18217

Received:

Priority:

Due:

Brisbane 1/21 Smallwood Place Murarrie QLD 4172 Phone: +61 7 3902 4600 NATA # 1261 Site # 20794

Nov 1, 2016 6:00 PM

Nov 9, 2016

5 Day

ABN - 50 005 085 521 e.mail: EnviroSales@eurofins.com web : www.eurofins.com.au

Order No.:

Report #: 521919

Phone: 02 9592 0218

Fax: 02 9519 9140

Stephen McCormack **Contact Name:** 

**Eurofins | mgt Analytical Services Manager : Andrew Black** 

		Sa	mple Detail			Moisture Set	Eurofins   mgt Suite B7			
Melb	ourne Laborato	ry - NATA Site	# 1254 & 142	71						
Sydr	ney Laboratory	- NATA Site # 1	8217			Х	Х			
Brist	oane Laboratory	y - NATA Site #	20794							
Exte	rnal Laboratory									
No Sample ID Sample Date Sampling Matrix LAB ID Time										
1 SM311016-20 Oct 31, 2016 Soil S16-No00763										
Test Counts										

Geo-Environmental Engineering P/L

Eurofins | mgt Unit F3, Building F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066 ABN: 50 005 085 521 Telephone: +61 2 9900 8400 Facsimile: +61 2 9420 2977

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### **Internal Quality Control Review and Glossary**

### General

- 1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
- 2. All soil results are reported on a dry basis, unless otherwise stated.
- 3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- 4. Results are uncorrected for matrix spikes or surrogate recoveries.
- 5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise
- 6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

### **Holding Times**

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

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

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

**NOTE: pH duplicates are reported as a range NOT as RPD

Units

 mg/kg: milligrams per Kilogram
 mg/l: milligrams per litre

 ug/l: micrograms per litre
 ppm: Parts per million

 ppb: Parts per billion
 %: Percentage

org/100ml: Organisms per 100 millilitres NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

**Terms** 

Dry Where a moisture has been determined on a solid sample the result is expressed on a dry basis.

LOR Limit of Reporting.

SPIKE Addition of the analyte to the sample and reported as percentage recovery.

RPD Relative Percent Difference between two Duplicate pieces of analysis.

LCS Laboratory Control Sample - reported as percent recovery
CRM Certified Reference Material - reported as percent recovery

Method Blank In the case of solid samples these are performed on laboratory certified clean sands

In the case of water samples these are performed on de-ionised water.

**Surr - Surrogate** The addition of a like compound to the analyte target and reported as percentage recovery.

**Duplicate**A second piece of analysis from the same sample and reported in the same units as the result to show comparison.

Batch Duplicate A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.

Batch SPIKE Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.

USEPA United States Environmental Protection Agency

APHA American Public Health Association

TCLP Toxicity Characteristic Leaching Procedure

COC Chain of Custody
SRA Sample Receipt Advice

CP Client Parent - QC was performed on samples pertaining to this report

NCP Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within

TEQ Toxic Equivalency Quotient

### QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%  $\,$ 

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs 20-130%

### **QC Data General Comments**

- 1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- 2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- 3. Organochlorine Pesticide analysis where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- 4. Organochlorine Pesticide analysis where reporting Spike data, Toxaphene is not added to the Spike.
- 5. Total Recoverable Hydrocarbons where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- 6. pH and Free Chlorine analysed in the laboratory Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time.

  Analysis will begin as soon as possible after sample receipt.
- 7. Recovery Data (Spikes & Surrogates) where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- 8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- 9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
- 10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

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### **Quality Control Results**

Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Method Blank		T T			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	mg/kg	< 20	20	Pass	
TRH C10-C14	mg/kg	< 20	20	Pass	
TRH C15-C28	mg/kg	< 50	50	Pass	
TRH C29-C36	mg/kg	< 50	50	Pass	
Method Blank				ı	
BTEX					
Benzene	mg/kg	< 0.1	0.1	Pass	
Toluene	mg/kg	< 0.1	0.1	Pass	
Ethylbenzene	mg/kg	< 0.1	0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2	0.2	Pass	
o-Xylene	mg/kg	< 0.1	0.1	Pass	
Xylenes - Total	mg/kg	< 0.3	0.3	Pass	
Method Blank					
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene	mg/kg	< 0.5	0.5	Pass	
TRH C6-C10	mg/kg	< 20	20	Pass	
Method Blank					
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	mg/kg	< 0.5	0.5	Pass	
Acenaphthylene	mg/kg	< 0.5	0.5	Pass	
Anthracene	mg/kg	< 0.5	0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5	0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5	0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5	0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5	0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5	0.5	Pass	
Chrysene	mg/kg	< 0.5	0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5	0.5	Pass	
Fluoranthene	mg/kg	< 0.5	0.5	Pass	
Fluorene	mg/kg	< 0.5	0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5	0.5	Pass	
Naphthalene	mg/kg	< 0.5	0.5	Pass	
Phenanthrene	mg/kg	< 0.5	0.5	Pass	
		< 0.5	0.5	Pass	
Pyrene Mathad Blank	mg/kg	< 0.5	0.5	Pass	
Method Blank Total Recoverable Hydrocarbons - 2013 NEPM Fractions		Т			
	m a/l.a	. 50	F0	Doos	
TRH > C16 C24	mg/kg	< 50	50	Pass	
TRH > C16-C34	mg/kg	< 100	100	Pass	
TRH >C34-C40	mg/kg	< 100	100	Pass	
Method Blank		T			
Heavy Metals	"			D-	
Arsenic	mg/kg	< 2	2	Pass	
Cadmium	mg/kg	< 0.4	0.4	Pass	
Chromium	mg/kg	< 5	5	Pass	
Copper	mg/kg	< 5	5	Pass	
Lead	mg/kg	< 5	5	Pass	
Mercury	mg/kg	< 0.05	0.05	Pass	
Nickel	mg/kg	< 5	5	Pass	
Zinc	mg/kg	< 5	5	Pass	
LCS - % Recovery					



Test			Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons -	1999 NEPM Fracti	ons					
TRH C6-C9			%	98	70-130	Pass	
TRH C10-C14			%	107	70-130	Pass	
LCS - % Recovery							
ВТЕХ							
Benzene			%	96	70-130	Pass	
Toluene			%	115	70-130	Pass	
Ethylbenzene			%	96	70-130	Pass	
m&p-Xylenes			%	97	70-130	Pass	
o-Xylene			%	99	70-130	Pass	
Xylenes - Total			%	98	70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons -	2013 NEPM Fracti	ons					
Naphthalene		-	%	101	70-130	Pass	
TRH C6-C10			%	103	70-130	Pass	
LCS - % Recovery			,,,	, ,,,,,			
Polycyclic Aromatic Hydrocarbons							
Acenaphthene			%	105	70-130	Pass	
Acenaphthylene			<del>%</del>	107	70-130	Pass	
Anthracene			<u> </u>	93	70-130	Pass	
			<del>%</del>			Pass	
Benz(a)anthracene				108	70-130		
Benzo(a)pyrene			%	93	70-130	Pass	
Benzo(b&j)fluoranthene			%	84	70-130	Pass	
Benzo(k)fluoranthene			%	81	70-130	Pass	
Chrysene			%	110	70-130	Pass	
Fluoranthene			%	114	70-130	Pass	
Fluorene			%	104	70-130	Pass	
Naphthalene			%	110	70-130	Pass	
Phenanthrene			%	123	70-130	Pass	
Pyrene			%	125	70-130	Pass	
LCS - % Recovery				<u> </u>			
Total Recoverable Hydrocarbons -	2013 NEPM Fracti	ons					
TRH >C10-C16			%	104	70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic			%	94	70-130	Pass	
Cadmium			%	106	70-130	Pass	
Chromium			%	93	70-130	Pass	
Copper			%	94	70-130	Pass	
Lead			%	103	70-130	Pass	
Mercury			%	94	70-130	Pass	
Nickel			%	90	70-130	Pass	
Zinc			%	98	70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery		J50100					3000
Total Recoverable Hydrocarbons -	1999 NEPM Fracti	ons		Result 1			
TRH C6-C9	S16-No01516	NCP	%	113	70-130	Pass	
TRH C10-C14	S16-No03259	NCP	<del>%</del>	108	70-130	Pass	
Spike - % Recovery	510-14003233	1101	/0	100	10-130	1 033	
BTEX				Result 1			
	Q16 No01516	NCP	%		70 120	Poss	
Benzene	S16-No01516			101	70-130	Pass	
Toluene	S16-No01516	NCP	%	104	70-130	Pass	
Ethylbenzene	S16-No01516	NCP	%	97	70-130	Pass	
m&p-Xylenes	S16-No01516	NCP	%	99	70-130	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
o-Xylene	S16-No01516	NCP	%	100			70-130	Pass	
Xylenes - Total	S16-No01516	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons -	2013 NEPM Fract	ions		Result 1					
Naphthalene	S16-No01516	NCP	%	96			70-130	Pass	
TRH C6-C10	S16-No01516	NCP	%	112			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons	3			Result 1					
Acenaphthene	S16-No04669	NCP	%	87			70-130	Pass	
Acenaphthylene	S16-No04669	NCP	%	95			70-130	Pass	
Anthracene	S16-No04669	NCP	%	85			70-130	Pass	
Benz(a)anthracene	S16-No02486	NCP	%	109			70-130	Pass	
Benzo(a)pyrene	S16-No02486	NCP	%	111			70-130	Pass	
Benzo(b&j)fluoranthene	S16-No02486	NCP	%	108			70-130	Pass	
Benzo(k)fluoranthene	S16-No02486	NCP	%	118			70-130	Pass	
Chrysene	S16-No02486	NCP	%	118			70-130	Pass	
Fluoranthene	S16-No02486	NCP	%	123			70-130	Pass	
Fluorene	S16-No04669	NCP	%	88			70-130	Pass	
Naphthalene	S16-No04669	NCP	%	95			70-130	Pass	
Phenanthrene	S16-No02486	NCP	%	121			70-130	Pass	
Pyrene	S16-No02486	NCP	%	124			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons -	2013 NEPM Fract	ions		Result 1					
TRH >C10-C16	S16-No03259	NCP	%	119			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S16-No01842	NCP	%	89			70-130	Pass	
Cadmium	S16-No07198	NCP	%	107			70-130	Pass	
Chromium	S16-No07198	NCP	%	86			70-130	Pass	
Copper	S16-No07198	NCP	%	72			70-130	Pass	
Lead	S16-No07198	NCP	%	86			70-130	Pass	
Mercury	S16-No07198	NCP	%	93			70-130	Pass	
Nickel	S16-No01842	NCP	%	95			70-130	Pass	
Zinc	S16-No07198	NCP	%	90			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits		Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons -	1999 NEPM Fract	ions		Result 1	Result 2	RPD			
TRH C6-C9	S16-No01514	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S16-No03258	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S16-No03258	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S16-No03258	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate	01011000200	110.	g/itg	1 100	1 100		0070	1 400	
BTEX				Result 1	Result 2	RPD			
Benzene	S16-No01514	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S16-No01514	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S16-No01514	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S16-No01514	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
o-Xylene	S16-No01514	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Xylenes - Total	S16-No01514	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate	1 010-11001014	INOF	mg/kg	_ \ 0.3	_ \ 0.3		JU /0	1 033	
Total Recoverable Hydrocarbons -	2013 NEDM Eroot	ione		Result 1	Result 2	RPD			
•	S16-No01514	NCP	ma/ka	1			30%	Pass	
Naphthalene		1	mg/kg	< 0.5	< 0.5	<1			
TRH C6-C10	S16-No01514	NCP	mg/kg	< 20	< 20	<1	30%	Pass	

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Duplicate										
Polycyclic Aromatic Hydrocarbo	ons			Result 1	Result 2	RPD				
Acenaphthene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Acenaphthylene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Anthracene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Benz(a)anthracene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Benzo(a)pyrene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Benzo(b&j)fluoranthene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Benzo(g.h.i)perylene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Benzo(k)fluoranthene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Chrysene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Dibenz(a.h)anthracene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Fluoranthene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Fluorene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Indeno(1.2.3-cd)pyrene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Naphthalene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Phenanthrene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Pyrene	S16-No02496	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Duplicate										
Total Recoverable Hydrocarbon	s - 2013 NEPM Fract	ions		Result 1	Result 2	RPD				
TRH >C10-C16	S16-No03258	NCP	mg/kg	< 50	< 50	<1	30%	Pass		
TRH >C16-C34	S16-No03258	NCP	mg/kg	< 100	< 100	<1	30%	Pass		
TRH >C34-C40	S16-No03258	NCP	mg/kg	< 100	< 100	<1	30%	Pass		
Duplicate										
Heavy Metals				Result 1	Result 2	RPD				
Arsenic	S16-No01992	NCP	mg/kg	6.7	6.5	4.0	30%	Pass		
Cadmium	S16-No07197	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass		
Chromium	S16-No01992	NCP	mg/kg	18	18	1.0	30%	Pass		
Copper	S16-No01992	NCP	mg/kg	12	12	2.0	30%	Pass		
Lead	S16-No01992	NCP	mg/kg	15	16	11	30%	Pass		
Mercury	S16-No01992	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass		
Nickel	S16-No01992	NCP	mg/kg	< 5	< 5	<1	30%	Pass		
Zinc	S16-No01992	NCP	mg/kg	11	9.5	15	30%	Pass		
Duplicate										
				Result 1	Result 2	RPD				
% Moisture	S16-No04537	NCP	%	20	19	7.0	30%	Pass		

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### **Quality Control Analyte Summary Compliance**

The table below is the actual occurrence of QC performed on the batch of samples within this report and as defined below

Analysis	Samples Analysed	Laboratory Duplicates Reported	Laboratory Matrix Spikes Reported	Method Blanks Reported	Laboratory Control Samples Reported
BTEX	1	1	1	1	1
Total Recoverable Hydrocarbons - 1999 NEPM	1	1	1	1	1
Total Recoverable Hydrocarbons - 2013 NEPM	1	1	1	1	1
Polycyclic Aromatic Hydrocarbons	1	1	1	1	1
Heavy Metals	1	1	1	1	1
% Moisture	1	1	NA	NA	NA

Quality Control Parameter Frequency Compliance follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure April 2011, Schedule B3, Guideline on Laboratory Analysis of Potentially Contaminated Soils and US EPA SW-846 Chapter 1: 'Quality Control'.

It comprises the following when a laboratory process batch is deemed to consist of up to 20 samples that are similar in terms of matrix and test procedure, and are processed as one unit for QC purposes. If more than 20 samples are being processed, they are considered as more than one batch.

### Method blank

One method blank per process batch.

### Laboratory duplicate

There should be at least one duplicate per process batch, or two duplicates if the process batch exceeds 10 samples.

### Laboratory control sample (LCS)

There should be at least one LCS per process batch.

### Matrix spikes

There should be one matrix spike per matrix type per process batch.



### Comments

### Sample Integrity

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

### **Qualifier Codes/Comments**

Code Description

F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).

N01

Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.

F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes. N04

Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs N07

### **Authorised By**

N02

Andrew Black Analytical Services Manager Rvan Hamilton Senior Analyst-Inorganic (NSW) Ryan Hamilton Senior Analyst-Metal (NSW) Ryan Hamilton Senior Analyst-Organic (NSW) Ryan Hamilton Senior Analyst-Volatile (NSW)



### Glenn Jackson

### **National Operations Manager**

Final report - this Report replaces any previously issued Report

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

Measurement uncertainty of test data is available on request or please click here.

Eurofins. Ingit shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mg be liable for consequential damages including, but not limited to, lost profits, damages for infallate to meet deadlines and lots production arising from this report. This document shall be reported used except in full and retrietates only to the letters tested. Unliess indicated otherwise, the tests were performed on the samples as received.

Report Number: 521919-S



ABN - 50 005 085 521

e.mail: EnviroSales@eurofins.com

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# Sample Receipt Advice

Company name: Geo-Environmental Engineering P/L

Contact name: Stephen McCormack

Project name: E16017EAS COC number: Not provided

Turn around time: 5 Day

Date/Time received: Nov 1, 2016 6:00 PM

Eurofins | mgt reference: 521919

# Sample information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- ✓ Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

### Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone: (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen McCormack - stephen@geoenvironmental.com.au.







email: sydney@envirolab.com.au envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

**CERTIFICATE OF ANALYSIS** 

156594-A

Client:

**Geo-Environmental Engineering** 

82 Bridge St Lane Cove NSW 2066

Attention: Stephen McCormack

Sample log in details:

Your Reference: E16017EAS

No. of samples:

1 water for additional testing

Date samples received / completed instructions received

02/11/16 / 09/11/2016

**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: / Issue Date: 10/11/16 / 10/11/16

Date of Preliminary Report: Not Issued

NATA accreditation number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing

Tests not covered by NATA are denoted with *.

## **Results Approved By:**

General Manager



Cations in water Dissolved		
Our Reference:	UNITS	156594-A-45
Your Reference		SM021116-GW7
	-	
Date Sampled		1/11/2016
Type of sample		water
Date digested	-	10/11/2016
Date analysed	-	10/11/2016
Calcium - Dissolved	mg/L	5.1
Magnesium - Dissolved	mg/L	6.6
Hardness	mgCaCO 3/L	40

Method ID	Methodology Summary
Metals-020	Determination of various metals by ICP-AES.

Envirolab Reference: 156594-A Page 3 of 6

Revision No: R 00

Cheff Reference. E10017EAS												
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery				
Cations in water Dissolved						Base II Duplicate II %RPD						
Date digested	-			10/11/2 016	[NT]	[NT]	LCS-W1	10/11/2016				
Date analysed	-			10/11/2 016	[NT]	[NT]	LCS-W1	10/11/2016				
Calcium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	LCS-W1	102%				
Magnesium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	LCS-W1	101%				
Hardness	mgCaCO 3/L	3		[NT]	[NT]	[NT]	[NR]	[NR]				

## **Report Comments:**

Asbestos ID was analysed by Approved Identifier:

Asbestos ID was authorised by Approved Signatory:

Not applicable for this job

Not applicable for this job

INS: Insufficient sample for this test PQL: Practical Quantitation Limit NT: Not tested

NR: Test not required RPD: Relative Percent Difference NA: Test not required

<: Less than >: Greater than LCS: Laboratory Control Sample

Envirolab Reference: 156594-A Page 5 of 6

Revision No: R 00

### **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.

### **Laboratory Acceptance Criteria**

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

Envirolab Reference: 156594-A Page 6 of 6

Revision No: R 00

## Simon Song

From: Stephen McCormack <stephen@geoenvironmental.com.au>

Sent: Wednesday, 9 November 2016 6:45 PM

To: Ken Nguyen Simon Song Cc:

Subject: RE: Results for Registration 156594 E16017EAS

Any chance of getting the hardness of the water from sample SM021116-GW7 (Envirolab reference 156594-45). ASAP? 145

From: Ken Nguyen [mailto:KNguyen@envirolab.com.au]

Sent: Wednesday, 9 November 2016 4:37 PM

To: Stephen McCormack <stephen@geoenvironmental.com.au>; Andy Chiem <andy@geoenvironmental.com.au>

Subject: Results for Registration 156594 E16017EAS

Please refer to attached for: a copy of the Certificate of Analysis a copy of the Invoice a copy of the COC an excel file containing the results

156594-A 24h, TAT Due 10/11

Please note that a hard copy will not be posted.

Enquiries should be made directly to: sydney@envirolab.com.au

### Regards

**Envirolab Services** 12 Ashley St Chatswood NSW 2067 ph 02 9910 6200 fax 02 9910 6201 www.envirolabservices.com.au

### Regards

Ken Nguyen | Chemist | Envirolab Services Pty Ltd (Monday to Friday 1pm to 9pm) Great Chemistry, Great Service.

12 Ashley Street Chatswood NSW 2067 T 612 9910 6200 F 612 9910 6201 knguyen@envirolab.com.au | www.envirolab.com.au







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