



Preliminary Site Investigation

15-19 Hughes Avenue
Ermington
NSW, 2115

Ermington Gospel Trust Pty Ltd

DL3560_S003281

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ABBREVIATIONS

ACM	Asbestos Containing Material
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
AST	Above-ground Storage Tank
ASS	Acid Sulfate Soil
B(a)P	Benzo(a)Pyrene
BGL	Below Ground Level
BH	Borehole
BTEX	Benzene, Toluene, Ethyl Benzene, Xylene
COC	Chain of Custody documentation
CLM	Contaminated Land Management
DA	Development Application
DEC	Department of Environment and Conservation (NSW)
DECC	Department of Environment and Climate Change (NSW)
DECCW	Department of Environment, Climate Change and Water (NSW)
DLA	DLA Environmental Services
DP	Deposited Plan
DQO	Data Quality Objective
EC	Electrical Conductivity
EIL	Ecological Investigation Level
EMP	Environmental Management Plan
EPA	Environment Protection Authority (NSW)
ESL	Ecological Screening Level
HIL	Health-Based Investigation Level
LOR	Limit of Reporting
MW	Monitoring Well
NATA	National Association of Testing Authorities, Australia
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NHMRC	National Health and Medical Research Council
NRMMC	Natural Resource Management Ministerial Council
NSW	New South Wales
OCP	Organochlorine Pesticides
OEH	Office of Environmental and Heritage
OPP	Organophosphorus Pesticides
OH&S	Occupational Health and Safety
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PID	Photo-Ionisation Detector
PQL	Practical Quantification Limit
QA/QC	Quality Assurance and Quality Control
RAP	Remedial Action Plan
RPD	Relative Percentage Difference
SAC	Site Acceptance Criteria
SAQP	Sampling Analysis and Quality Plan
SEPP	State Environmental Planning Policy
SWL	Standing Water Level
TCLP	Toxicity Characteristic Leaching Procedure
TRH	Total Recoverable Hydrocarbons
UCL	Upper Confidence Limit
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
WHS	Work Health Safety

EXECUTIVE SUMMARY

DLA Environmental Services (DLA) was engaged by Ermington Gospel Trust Pty Ltd (EGT) to conduct a Preliminary Site Investigation (PSI) of the following Site:

15-19 Hughes Avenue, Ermington (the Site).

This Soil Supplemented PSI chemically evaluated the concentration of soil contaminants and conducted a visual and historical investigation of the potential environmental impacts on the Site in accordance with the NEPM (NEPC, 2013) guidelines. A total of seven targeted soil and two material samples were collected from across the Site.

The property at 15 Hughes Avenue appears to have been utilised as a church in its current form since the 1970s, with much of the Site covered in concrete and asphalt hardstand surfaces. The soil profile beneath hardstand areas were found to consist of roadbase, with natural red clays an average depth of 0.15m below ground level. Unsealed surfaces of the site were found to contain dark brown sandy loamy topsoils and some fill materials were observed in the garden adjacent to the small storage structure.

No obvious dangerous goods, items of heritage or archaeological significance were observed across the properties during the inspection. There were no observable surface staining, or indications of below ground storage tanks identified at the time of inspection.

There were no concentrations of BTEX, vTRH, s-vTRH, OC/OP pesticides or PCBs recorded above the LOR in any of the soil samples submitted for analysis. A trace detection of PAH was identified in one sample collected from the Site, however was the concentration found to be compliant with the SAC. There were no recorded detections of BaP TEQ. All recorded heavy metal concentrations were found to be compliant with the SAC.

One sample (Mat-1) was collected from the asphalt sealing surface found across car parking areas and analysed for the presence of Phenols. No Phenols were detected above the LOR, indicating no coal tar is present in the asphalt and the material is suitable for recycling.

Fragments of bonded asbestos were identified on the surface in the vicinity of sample location S7 and along the northern boundary of the property at 19 Hughes Avenue. This area will require remediation by a suitably qualified Class B contractor prior to the issuing of an Asbestos Clearance Certificate, provided in accordance with the *How to Safely Remove Asbestos* Code of Practice (Safe Work Australia, 2011).

DLA considers that the Site assessment objectives have been achieved in accordance with DA conditions, SEPP 55 and *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA, 2011). This PSI concludes that **the Site at 15-19 Hughes Avenue, Ermington can be made suitable for the intended land use consistent with NEPM (NEPC, 2013) Residential B – minimal access to soil, following the remediation and subsequent validation of asbestos impacted areas located at the rear of the property at 19 Hughes Avenue.** Following remediation, an Asbestos Clearance Certificate should be issued in accordance with the *How to Safely Remove Asbestos* Code of Practice (Safe Work Australia, 2011).

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1.0 INTRODUCTION

1.1 General

DLA Environmental Services (DLA) was engaged by Ermington Gospel Trust Pty Ltd (EGT) to conduct a Preliminary Site Investigation (PSI) of the following Site:

15-19 Hughes Avenue, Ermington (the Site).

This Soil Supplemented PSI chemically evaluated the concentration of soil contaminants and conducted a visual and historical investigation of the potential environmental impacts on the Site in accordance with the NEPM 2013 guidelines. A total of seven targeted soil samples were taken from across the Site.

1.2 Objectives

The project objectives of this PSI are to satisfy the relevant DA Conditions and the general requirements of State Environmental Planning Policy No.55 (SEPP 55) in accordance with *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA, 2011). Specifically, this PSI will consider the potential for suspected historical activities to have caused contamination at the Site and determine the suitability of the land for future land use consistent with *Residential B* in the National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No.1) (NEPM 2013). Should any potential adverse impacts to the environment or human health be identified, recommendations will be provided for additional assessment to determine if remedial action is required.

1.3 Scope of Works

To achieve this objective, DLA carried out the following works:

- Search and review of records and Site plans available locally and from State Regulatory Authorities, including WorkCover, Department of Lands and NSW EPA;
- Review of available previous reports for the Site;
- Review of historical aerial photographs available from the Land Information Centre;
- Reviewing all environmental conditions of the Site including the geology and hydrogeology;

- Providing a comprehensive overview of the Site's past and current land uses and potential contamination issues;
- Targeted soil sampling;
- Provide a preliminary assessment of Site contamination (if any);
- Discuss the Site condition and suitability based on the proposed development;
- Assess the need (if any) for remediation and/or further investigations; and,
- Preparation of this PSI report in accordance with relevant EPA made or endorsed guidelines.

2.0 SITE DESCRIPTION

2.1 Site Identification

The Site identification details are summarised in **Table 2a** below:

Table 2a – Site Identification Summary

ITEMS	DETAILS
Address	15-19 Hughes Avenue, Ermington
Local Government Authority	Parramatta Council
Lot and Deposited Plan	Lot 17, DP 1200327
Development Controls	Parramatta City LEP 2011
Site Zoning	SP1 Special Activities and IN1 General Industrial
Current Use (NEPM 2013 Table 1A(1))	Public Service Building (Church)
Proposed Use (NEPM 2013 Table 1A(1))	Residential B – minimal opportunities for soil access
Site Area (approx.)	16490 m ² (1.649 ha)
Locality Map	Refer to Figure 1 – Site Location
Site Survey	Refer to Figure 2 – Site Layout with Sample Locations

2.2 Boundaries and Surrounding Land Use

The boundary and surrounding landscape features of the Site are summarised in **Table 2b** below:

Table 2b – Boundaries and Surrounding Land Use

DIRECTION	DETAILS
North	Victoria Road with low density residential housing beyond.
East	Open space (Bartlett Park) and various commercial/industrial buildings with open car parking areas.
South	Low density residential housing along Hughes Avenue with a decommissioned industrial factory behind the residential properties.
West	Hughes Avenue with low density residential housing.

Neighbouring premises and activities are considered unlikely to pose a pollution risk to the Site.

2.3 Site Geology and Soils

A review of the 1:250,000 Sydney Geological Series Sheet S1 56-5 (Edition 3 – 1966) indicates that the Site is underlain by the Winamatta and Liverpool sub-groups, consisting of Bringelly shales, Minchinbury Sandstone and Ashfield Shale, generally consisting of shale, carbonaceous clay stone, claystone, laminate and fine to medium grained lithic sandstone, rare coal and tuff.

2.4 Site Topography

A review of the eSPADE website indicates that the site's topography is consists of low and steep rolling hills. Local relief ranges from 50-120m, slopes range from 5-20%. Convex narrow (20-300m) ridges and hillcrests grade into moderately inclined side slopes with narrow concave drainage lines. Moderately inclined slopes of 10-15% are the dominate landform elements.

Inspection of the site confirmed the general aspect slopes toward the south-east corresponding with the local aspect.

2.5 Acid Sulphate Soils

The NSW Land Information Centre 1:25000 Acid Sulfate Risk Maps, Parramatta/Prospect indicates that the Site has no known occurrences of Acid Sulfate Soils (ASS). The northern banks of the Parramatta River, approximately 600m south of the Site, have been highlighted as containing a high probability of ASS.

2.6 Salinity and Aggressivity of Soils

The Department of Infrastructure, Planning and Natural Resources Salinity Potential in Western Sydney map (2002), indicates there is a moderate salinity potential in the Ermington area. The surrounding suburbs including Dundas, Rydalmere and Rose Hills show low-moderate salinity potential.

2.7 Hydrology and Hydrogeology

The majority of the Site is covered by sealed, hardstand surfaces including concrete and asphalt. Some grassed and garden areas are present around the perimeter of the Site. Rainfall is expected to flow downslope across sealed surfaces into gutters and stormwater drains, and to partially infiltrate the unsealed surfaces of the site.

A search of the Department of Natural Resources groundwater database was also performed to identify wells in the vicinity of the Site. The search identified four registered groundwater monitoring wells located within 3.5 km of the Site, the information of which is summarised below:

Table 2c – Regional Groundwater Summary Data

WELL ID	DISTANCE FROM SITE (m)	PURPOSE	DEPTH (m)	STANDING WATER LEVEL (m)	SALINITY (µS/cm)
GW072314	E – 2200m	Test Bore (Cancelled)	150.00	No Data	No Data
GW109990	SW – 2300m	Monitoring	12.00	No Data	No Data
GW110173	NE – 3500m	Test Bore (Cancelled)	48.00	5.5	No Data
GW200688	NW – 1700m	Domestic	No Data	No Data	No Data

Refer to **Appendix D** – Groundwater Works Database Search.

Groundwater is likely to be present between 4-8 m below ground level, and flow southward toward the nearest water system - Parramatta River, located approximately 800m south of Site.

2.8 Site Meteorology

The Bureau of Meteorology NSW gives the average annual rainfall for the Ryde area at 943.8mm – 1051.6mm, with an annual daytime temperature range of 12.5° to 24.3°C.

3.0 DEVELOPMENT CONTROLS

3.1 Section 149 Certificate

A Planning Certificate from Parramatta City Council under Section 149 of *the Environmental Planning and Assessment Act 1979* (NSW) was obtained for Lot 1 DP 588575, stating:

- The Parramatta City Council Local Environmental Plan 2011 applies to the carrying out of development at the site;
- The Site is currently zoned as SP1 – Special Activities and IN1 General Industrial;
- The land is not located within a Heritage Conservation Area;
- The land is not affected by road widening or road realignment;
- The land is not affected by land reservation acquisition;
- The land is not affected by any of the matters contained in Clause 59(2) in the Contaminated Land Management Act;
- The land is subject to Section 5.4 Preservation of Trees or Vegetation in Parramatta Development Control Plan 2011;
- The land is not affected by the Coastal Protection Act;
- The land is not affected by the Mine Subsidence Act;
- The land is not identified to be bushfire prone land; and
- The land does not contain any Threatened Species.

Refer to **Appendix E** – Section 149 Certificate.

3.2 WorkCover Dangerous Goods Search

A WorkCover NSW search regarding the Site within their Stored Chemical Information Database and microfiche records has not located any records pertaining to the Site.

Refer to **Appendix F** – Dangerous Good Search.

3.3 Contaminated Land Record Search

A search was conducted on the EPA Contaminated Lands Register website for any records pertaining to section 58 of the *Contaminated Land Management Act 1997* (NSW) and revealed that the Site is not encumbered by any notices from the NSW EPA with regard to contaminated land. No sites in the vicinity of the Site were encumbered by any notices.

4.0 SITE HISTORY

4.1 Aerial Photograph Review

Aerial photographs (1930 to 2012) from the NSW Lands Department as well as aerial images available online from Nearthmaps.com were reviewed by DLA with relevant observations being summarised in **Table 4a** below.

Table 4a – Aerial Photograph Review

YEAR	DETAILS
1930	The current site area appears to have been cleared and predominantly utilised as a vacant paddock/field. Victoria Road is visible to the north of the site, as is Ermington Road to the west. Some residential properties are present along Victoria Road.
1955	One main building and a number of smaller buildings have been constructed in the centre of the Site as well as a car parking area in the north west corner of the property. The remaining areas of the property appear to be open grassland.
1970	The car parking area around the structures in the centre of the Site has been extended. The residential structure and garage that currently exists on 19 Hughes Avenue has been constructed. Low density residential house has increased along Hughes Avenue and in the surrounding areas.
1976	The previously existing structures in the centre of the Site have been replaced by the large main structure that exists today. Hardstand parking areas cover the majority of the remaining areas of the site to the east and north.
1982	There is little observable change to the Site.
1986	There is little observable change to the Site.
1991	There is little observable change to the Site.
1994	A large concrete-covered parking area has been constructed across the northern section of the Site. Otherwise no observable changes to the Site.
2012	There is little observable change to the Site.
2015	There is little observable change to the Site. The neighbouring industrial property to the south has been demolished.

4.2 Historical Title Search

Lands Department records indicate that Lot 1 DP 588575 has been in private ownership from 1893 until present. Title Search results summarised in **Table 4b** below:

Table 4b – Historical Title Search

15 – 19 Hughes Avenue & 655 to 657 Victoria Road, Ermington

YEAR	SITE OWNER	LAND USE / OCCUPATION
26.05.1893 (1893 to 1916)	Richard Hughes	Orchardist
08.03.1916 (116 to 1948)	Frances Sarah Davies	Married Woman
10.09.1948 (1948 to 1971)	Harold Phypers Woods Hazel Lillian Lindsay	Dairyman Married Woman
24.03.1971 (1971 to 1971)	Harold Phypers Woods Leslie Herman Juskovic	Farmer
15.04.1971 (1971 to 1972)	Harold Phypers Woods William Douglas Lindsay Jeanette Blanche French	Farmer Dairy Farmer Married Woman
28.07.1972 (1972 to 1973)	Norman James Peel Joyce Thomas Wynne Heaney Francis Robert Heaney Robert Thomas Bullock	Company Director Company Director Company Director Business Consultant
22.05.1973 (1973 to 1975)	Francis Robert Heaney Robert Thomas Bullock Robert William Faulkes	Company Director Business Consultant Company Director
16.09.1975 (1975 to 1977)	George Maurice Francis Willy John Lee Thompson Ross Gordon Hales Robert William Faulkes	Textile Agent Technical Representative Salesman Wholesale Distributor
18.04.1977 (1977 to 1977)	Robert William Faulkes Ross Gordon Hales John Lee Thompson	Wholesale Distributor Salesman Technical Representative

YEAR	SITE OWNER	LAND USE / OCCUPATION
23.08.1977 (1977 to 1982)	Robert William Faulkes	Wholesale Distributor
	Ross Gordon Hales	Salesman
	Ronald James Olsson	Carrier
	Edward Trimmer	Storeman
29.07.1982 (1982 to 1982)	Robert William Faulkes	Wholesale Distributor
	Ronald James Olsson	Carrier
	Edward Trimmer	Storeman
29.09.1982 (1982 to 1982)	Robert William Faulkes	Wholesale Distributor
	Ronald James Olsson	Carrier
	Philip Bruce McNaughton	-----
12.11.1982 (1982 to 1988)	Ronald James Olsson	Carrier
	Philip Bruce McNaughton	-----
	Neill Baxter Harrison	-----
26.05.1988 (1988 to 1993)	Neil Baxter Harrison	-----
	Edward Bruce Crutcher	-----
	Bruce David Hales	-----
	John Lee Thompson	-----
	Bruce Donaldson Alderton	-----
30.06.1993 (2014 to 2014)	Edward Bruce Crutcher	-----
	Bruce David Hales	-----
	Bruce Donaldson Alderton	-----
	Philip Bruce McNaughton	-----
	Benjamin Hales	-----
05.12.2014 (2014 to date)	Bruce Donaldson Alderton	-----
	Philip Bruce McNaughton	-----
	Ross Gordon Hales	-----
	Ian Peter Shirtliff	-----
	John Kenneth Anderson	-----
	Ronald Stephen Dartnall	-----

Refer to **Appendix C** – Historical Title Search.

4.3 Heritage / Archaeological Items

A search on the state heritage register on the Office of Environment & Heritage NSW has found that there are no heritage items listed under the Site's location. Heritage items identified to be located in the vicinity of the Site include:

- Bulla Cream Dairy, 64 Hughes Ave, Ermington NSW 2115.

4.4 Site History Summary

Investigations into the history of the Site indicate that the potential for contamination from past activities is considered low to moderate. The main structure that is currently located in the centre of the Site has been present since at least the 1970's, and the property is likely to have been utilised as a church since that time. The residential structure that is currently present on 19 Hughes Avenue has been present since the 1950's.

Potential contaminants of concern would include asbestos, hydrocarbons, PAHs and heavy metals associated with previous Site uses and potentially uncontrolled fill.

5.0 SAMPLING AND ANALYSIS PLAN

5.1 Field Investigation Procedure

The likelihood of contamination was assessed by comparison of assessment results with NSW EPA produced or endorsed criteria available at the time this report was published. Sampling was performed on a judgemental basis and targeted areas identified as potential high risk for contamination. The justification of the sampling point regime for the assessment was based on the investigator's knowledge, operational requirements, experience and history of the Site. All historical investigations and anecdotal evidence supported the sampling approach adopted and provided for samples to be collected in an unbiased manner. Field investigation comprised of the following:

- Conduct a review of Site history and aerial photographs to identify appropriate sampling locations prior to the commencement of work;
- Inspection of the Site; and,
- Collection of seven targeted soil samples.

Refer to **Figure 2** – Site Layout with Sampling Locations.

5.1.1 Soil Collection

Soil samples for chemical analyses were collected in accordance NEPM (NEPC, 2013) and AS4482.1-2005. Collected soil samples were immediately transferred to sample containers of appropriate composition (glass jars for chemical analysis, plastic bags for asbestos). Job number, sample identification number, and date of sampling were recorded on sample labels affixed to the sample containers.

Samples were then placed immediately into a chilled esky to prevent the loss of potential volatile components. The samples were transported under standard DLA chain-of-custody protocols to the NATA accredited laboratory – Envirolab Services Pty Ltd. All samples were stored and transported at temperatures below 4°C.

All samples were collected by DLA staff who are specifically trained in hazardous waste field investigation techniques and health and safety procedures. All techniques used are specified in DLA Field Manual for Contaminated Sites, which are based on methods specified by the United States Environment Protection Agency (US EPA) and NEPM (NEPC, 2013).

5.1.2 Analytical Strategy

Samples were analysed for listed chemicals based on potential contamination in the area and to allow for a preliminary assessment of all representative areas of the Site. Samples were analysed for the following parameters:

5.1.3 Inorganic

- Heavy metals: arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni), and zinc (Zn);
- Asbestos; and,
- pH, Electronic Conductivity (EC) and Cation Exchange Capacity (CEC).

5.1.4 Organic

- Total Recoverable Hydrocarbons (TRH);
- Monocyclic Aromatic Hydrocarbons (BTEX);
- Volatile TRH (vTRH);
- Organochlorine Pesticides (OCs);
- Organophosphorus Pesticides (OPs);
- Polycyclic Aromatic Hydrocarbons (PAHs); and,
- Polychlorinated Biphenyls (PCBs).

No Photo Ionisation Detection (PID) assessments were undertaken as TRH analyses were performed on all samples. Results of contaminant concentrations were assessed with reference to the relevant Health Investigation Levels (HILs), prior to reporting and making recommendations.

5.2 Data Quality Objectives

The NEPM (NEPC, 2013) and Australian Standard (AS) 4482.1-2005 recommend that data quality objectives (DQOs) be implemented during the validation of remediated sites. The DQO process described in AS 4482.1-2005 Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil Part 1: Non-Volatile and Semi-Volatile Compounds outlines seven distinct steps to outline the project goals, decisions, constraints and an assessment of the project uncertainties and how to address these when they arise. The DQOs have been summarised in the table below:

Table 7a – Summary of DQOs

1	State the Problem	Have previous land use activities affected the land use suitability of the Site for <i>Residential B</i> as defined by NEPM (NEPC, 2013)?
2	Identify the Decisions	<ul style="list-style-type: none"> - Does historical information indicate a potential for contamination to be present at the Site? - Do contaminant concentrations in the soil comply with the stated screening levels? - Do soils on the Site currently require any remedial action / risk management? - Have the previous land uses affected the environmental quality of the land? - Are there any identifiable risks to human health or the environment on Site?
3	Identify Inputs to Decisions	<ul style="list-style-type: none"> - Undertake appropriate searches of the site to determine any recorded history of detrimental effects on the site. - Targeted soil sampling across the Site. - Determination of the general concentrations of chemicals across the Site. - Identifying current and future potential receptors and the likelihood of exposure to unacceptable levels of contamination both on and off the Site.
4	Define Study Boundaries	The physical study will focus on fill materials and natural soils within the confines of the identified lot boundaries.
5	Develop Decision Rule	<p>The Site will be considered suitable for its intended land use if soils and groundwater comply with the screening levels provided in NEPM (NEPC, 2013), as determined by the following Site Assessment Criteria (SAC) being applied to the data:</p> <ul style="list-style-type: none"> - The 95% Upper Confidence Limit (UCL) of the arithmetic mean for each Contaminant of Concern must comply with the respective screening level; - The individual contaminant concentration should not exceed the screening level by more than 250%, and; - The standard deviation of individual contaminants should not exceed 50% of the screening level.
6	Specify Limits on Decision Errors	Field and laboratory quality controls are implemented to avoid error and to ensure the action levels exceed the measurement detection limits. The performance of decision making inputs will be enhanced through the application of Data Quality Indicators (DQI), defined in Table 7b below.
7	Optimise Design for Obtaining Data	<ul style="list-style-type: none"> - Ensure access to all relevant and previous environmental data. - Identify the most resource-effective sampling and analysis design for general data that are expected to satisfy the DQOs.

Table 7b – Summary of DQIs

DATA PRECISION AND ACCURACY	
Acceptable Relative Percentage Difference (RPD)	<p>>10 x LOR: 30% inorganics; 50% organics (Field)</p> <p><10 x LOR: Assessed on individual basis (Field)</p> <p>>5 x LOR: 50% (laboratory)</p> <p><5 x LOR: No Limit (laboratory)</p>
Adequate Laboratory Performance	<p>Based on acceptance criteria of laboratory as specified on certificate of analysis, includes: blank samples, matrix spikes, control samples, and surrogate spike samples.</p> <p>Use of analytical laboratories with adequately trained and experienced testing staff experienced in the analyses undertaken, with appropriate NATA certification.</p>
DATA REPRESENTATIVENESS	
Sample and Analysis Selection	Representativeness of all contaminants of concern.
Trip Blanks	No detection above LOR.
Trip Spikes	Recoverable concentrations of volatiles between 60 – 140%.
Laboratory Selection	Adequate laboratory internal quality control and quality assurance methods, complying with the NEPM (NEPC, 2013).
DOCUMENTATION COMPLETENESS	
Chain of Custody Records	<p>Laboratory sample receipt information received confirming receipt of samples intact and appropriate chain of custody.</p> <p>NATA registered laboratory results certificates provided.</p>
DATA COMPLETENESS	
	Analysis for all contaminants of concern.
	Field duplicate sample numbers complying with NEPM (NEPC, 2013)
	Trip spike samples prepared and sent with field samples regularly.
COMPARABILITY	
	Use of NATA registered laboratories.
	Detailed logs of all sample locations recorded.
	Test methods comparable between primary and secondary laboratory
	Acceptable RPD's between original samples and field duplicates and inter-laboratory triplicate samples.

5.3 Assessment Criteria

The assessment criteria have been chosen in accordance with current Australian and NSW EPA guidelines. The criteria provided are the most current and widely accepted for Tier 1 assessment of land use suitability at present in Australia, and have generally been developed using a risk-based approach.

5.3.1 Soil Criteria

Criteria from the NEPM (NEPC, 2013) Schedule B1 were utilised for this assessment. Soil HSLs for vapour intrusion were used for volatile petroleum contaminants, whilst the US EPA Regional Screening levels were cited to extrapolate criteria for volatile halogenated compounds.

With regard to the vapour intrusion criteria, the NEPM (NEPC, 2013) provides Health Screening Levels (HSLs), Ecological Screening Levels (ESLs) and Management Limits (MLs) for TRH fractions in soil and groundwater based on concerns regarding ecological impacts, inhalation of vapours and direct contact with contaminant sources. The material type of 'Clay' (or 'fine') has been used as it offers to most similar correlation to the condition of soils at the Site.

Table 5a –TRH Soil Criteria for Vapour Intrusion (mg/kg)

ANALYTES	HSL-A/B ¹ (Clay) 0-<1.0m
Benzene	0.7
Toluene	480
Ethylbenzene	NL
Xylene	110
Naphthalene	5
F1: C₆-C₁₀	50
F2: C₁₀-C₁₆	280
F3: C₁₆-C₃₄	NA
F4: C₃₄-C₄₀	NA

NL = Not Limiting (i.e. the soil vapour concentration for a petroleum mixture could not exceed a level that would result in the maximum allowable vapour risk for the given scenario).

NA = Not Applicable (i.e. NEPM (NEPC, 2013) does not provide HSLs for the F3 and F4 hydrocarbon fractions).

1 – NEPM (NEPC, 2013) *Table 1A(3) – Soil HSLs for vapour intrusion – 0-1.0m, Column A.*

Table 5b – Health Screening Levels for Direct Contact (mg/kg)

ANALYTES	HSL-B ¹
Benzene	140
Toluene	21,000
Ethylbenzene	5,900
Xylenes	17,000
Naphthalene	2,200
F1: C₆-C₁₀	5,600
F2: C₁₀-C₁₆	4,200
F3: C₁₆-C₃₄	5,800
F4: C₃₄-C₄₀	8,100

1 – Friebel and Nadebaum 2011, Health Screening Levels for petroleum Hydrocarbons in Soil and Groundwater, Part 1: Technical Development Document, *Table A4 – Soil Health Screening Levels for Direct Contact*, Column B.

Table 5c – Criteria for Total Recoverable Hydrocarbons ESL and ML (mg/kg)

	ANALYTES	ESL (Coarse*) ¹	ML- (Coarse*) ²
URBAN RESIDENTIAL AND PUBLIC OPEN SPACE	Benzene	10	--
	Toluene	10	--
	Ethylbenzene	1.5	--
	Xylenes	10	--
	Benzo(a)Pyrene		
	F1: C₆-C₁₀	0.7	700
	F2: C₁₀-C₁₆	180	1,000
	F3: C₁₆-C₃₄	120	2,500
	F4: C₃₄-C₄₀	300	10,000

1 – NEPM (NEPC, 2013) *Table 1B(6)* – ESLs for TPH fractions, BTEX and benzo(a)pyrene in soil.

2 – NEPM (NEPC, 2013) *Table 1B(7)* – Management Limits for TPH fractions F1-F4 in soil.

Table 5d – Site Assessment Criteria for Soils (mg/kg)

ANALYTES		HIL-B ¹
HEAVY METALS	Arsenic	500
	Cadmium	150
	Chromium	500
	Copper	30,000
	Lead	1,200
	Mercury	120
	Nickel	1,200
	Zinc	60,000
PAH	BaP TEQ	4
	Total PAHs	400
PCB	PCB	1
PESTICIDES	Aldrin/Dieldrin	10
	Chlordane	90
	DDT+DDE+DDD	600
	Heptachlor	10
ASBESTOS	Bonded ACM	0.04%
	Friable Asbestos/Asbestos Fines	0.001%
	Surface Asbestos (0.1m)	No Visible

1 – Criteria adopted for proposed residential areas – NEPM (NEPC, 2013) Table 1A(1) and Table 7, Column B.

6.0 SITE INSPECTION

The inspection of the Site was undertaken on the 7th July 2015. The property at 15 Hughes Avenue is currently utilised as a church, with the main two-storey brick structure located in the south-west corner of the property off Hughes Avenue. The majority of the remaining areas around the Site are utilised for concrete and asphalt covered car parking purposes, with some grassed areas and gardens located around the perimeter of the property. A smaller, ancillary structure is located approximately 10m north of the main building and appeared to be primarily utilised for services and storage purposes. The current caretaker of the property indicated that the structure had previously housed a back-up generator with an above ground petrol tank (no longer present) adjacent. An electrical pit located near the main entrance south of Site. Additional extension on the western side of the main building was approximately 2m lower than the elevation of Hughes Avenue.

The soil profile beneath hardstand areas were found to consist of roadbase, with natural red clays below. Unsealed surfaces of site were found to contain dark brown sandy loamy topsoils and some fill materials were observed in the garden adjacent to the small storage structure.

The Site slopes gently in a south-easterly direction. The western area containing a bus parking area, consisting of 200mm concrete elevated slab set upon shale. Main power lines run above the property from south to north. The property directly to the south of the site (down gradient) appeared to have been a recently demolished former industrial site, with a concrete slab remaining. The site was potentially previously utilised for the manufacture of aerosol products, with a large above ground storage tank visible.

The property at 19 Hughes Avenue consists of a single storey brick and weatherboard structure with possible asbestos containing material (ACM) eaves. The front of the property contains a steep concrete driveway and primarily grassed garden area. At the rear of the property fragments of ACM were observed on the surface near the northern fence line. The garage structure at the rear of the property was observed to be constructed out of possible ACM fibro sheeting. One bulk soil sample was collected from the backyard adjacent to the fibro garage to be analysed for the presence of asbestos fines/fibrous asbestos (AF/FA).

No obvious dangerous goods, items of heritage or archaeological significance were observed across the properties during the inspection.

7.0 RESULTS

The sampling regime involved the collection of seven representative surface soil samples and one material sample which were submitted to Envirolab Services Pty Ltd and ASET Pty Ltd undergoing a range of laboratory analyses. The results of the assessments conducted at the Site are summarised below:

Refer to **Appendix B** – Nata Certified Analytical Data.

7.1 Monocyclic Aromatic Hydrocarbons, Volatile Total Recoverable Hydrocarbons and Semi Volatile Total Recoverable Hydrocarbons

All seven soil samples collected from the Site were analysed for Volatile Total Recoverable Hydrocarbons (vTRH) and Benzene, Toluene, Ethyl benzene, Xylene and Naphthalene (BTEX). There were no concentrations of vTRH, BTEX or Naphthalene recorded above the Laboratory Limit of Reporting (LOR).

The sample of asphalt material, Mat-1, collected from the rear car parking area was found to contain concentrations of Semi-Volatile Total Recoverable Hydrocarbons (sTRH), with Fractions F3 and F4 recorded at 1,300 mg/Kg and 1,700 mg/Kg respectively.

7.2 Polycyclic Aromatic Hydrocarbons

All seven samples were analysed for Polycyclic Aromatic Hydrocarbons (PAH) compounds. Samples S-3 and Mat-1 recorded Total PAH concentrations of 0.13 mg/Kg and 0.22 mg/Kg respectively. Both concentrations are below the SAC of 400 mg/Kg. There were no recorded detections of Benzo(a)Pyrene TEQ or Total PAH concentrations above the LOR in any other samples collected from the site.

7.3 Pesticides and Polychlorinated Biphenyls

Four samples were analysed for Organochlorine (OC), Organophosphate (OP) pesticides and Polychlorinated Biphenyls (PCBs). There were no concentrations of OC, OP pesticides or PCBs reported above the Laboratory LOR.

7.4 Heavy Metals

All eight including material samples were analysed for all eight heavy metals as recommended by the NSW EPA. Exceedances of the adopted assessment criteria were not observed. Statistical analysis of soils found on-site indicates compliance with the Site Assessment Criteria.

Table 7a – Heavy Metals in Soil (mg/kg)

Parameter	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn
Average (n=7)	8.2	nd	14.8	28.7	20.1	nd	33.8	48.1
Standard Deviation	4.5	nd	5.8	22.3	14.5	nd	37.7	38.4
Minimum (mg/kg)	nd	nd	8	5	3	nd	3	11
Maximum (mg/kg)	15	nd	24	71	38	nd	110	130
Number HIL Exceedances	0	0	0	0	0	0	0	0
HIL Criteria (mg/kg)	100	20	100	30,000	1,200	120	1,200	60,000

nd = non-detect

7.5 Asbestos

One bulk soil sample, S-7, collected from the backyard of the 19 Hughes Avenue was analysed for the presence of asbestos fines/fibrous asbestos (AF/FA). The sample was found not to contain asbestos. A material sample was collected from the Telstra pit (Mat-2) and analysed for the presence of asbestos. The sample was found not to contain asbestos.

7.6 Phenol

One sample of asphalt material, M-1, was analysed for Total Phenolics (As Phenol), and found not to contain concentrations of Phenols above the Laboratory LOR.

7.7 QA/QC Comments

Laboratory QA/QC on all samples analysed included calculation of %RPD, matrix spike recovery and blank determinations. All matrix spike recovery and blank determinations were within acceptable limits. Therefore, it is considered that sampling techniques and transportation of samples were appropriate. A field duplicate was taken and analysed, %RPD were within acceptable limits amongst all testing parameters.

8.0 DISCUSSION

This Soil Supplemented Preliminary Site Investigation chemically evaluated the concentration of soil contaminants and conducted a visual and historical investigation of the potential environmental impacts on the Site in accordance with the NEPM (NEPC, 2013) guidelines. A total of seven targeted soil and two material samples were collected from across the Site located at 15-19 Hughes Avenue, Ermington.

The property at 15 Hughes Avenue appears to have been utilised as a church in its current form since the 1970s, with much of the Site covered in concrete and asphalt hardstand surfaces. The soil profile beneath hardstand areas were found to consist of roadbase, with natural red clays an average depth of 0.15m below ground level. Unsealed surfaces of the site were found to contain dark brown sandy loamy topsoils and some fill materials were observed in the garden adjacent to the small storage structure.

No obvious dangerous goods, items of heritage or archaeological significance were observed across the properties during the inspection. There were no observable surface staining, or indications of below ground storage tanks identified at the time of inspection.

There were no concentrations of BTEX, vTRH, s-vTRH, OC/OP pesticides or PCBs recorded above the LOR in any of the soil samples submitted for analysis. A trace detection of PAH was identified in one sample collected from the Site, however was the concentration found to be compliant with the SAC. There were no recorded detections of BaP TEQ. All recorded heavy metal concentrations were found to be compliant with the SAC.

One sample (Mat-1) was collected from the asphalt sealing surface found across car parking areas and analysed for the presence of Phenols. No Phenols were detected above the LOR, indicating no coal tar is present in the asphalt and the material is suitable for recycling.

Fragments of bonded asbestos were identified on the surface in the vicinity of sample location S7 and along the northern boundary of the property at 19 Hughes Avenue. This area will require remediation by a suitably qualified Class B contractor prior to the issuing of an Asbestos Clearance Certificate, provided in accordance with the *How to Safely Remove Asbestos* Code of Practice (Safe Work Australia, 2011).

9.0 CONCLUSIONS

The sampling regime and subsequent assessment and reporting of the Site are considered to be adequate for assessment purposes to determine the future land use suitability of the Subject Site in accordance with Parramatta City Council, relevant Development Consent Conditions and the general requirements of State Environmental Planning Policy No.55 (SEPP 55). All reporting has been undertaken in accordance with the *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA, 2011) and the *Guidelines for the NSW Site Auditor Scheme* (NSW EPA, 2nd eds., 2006).

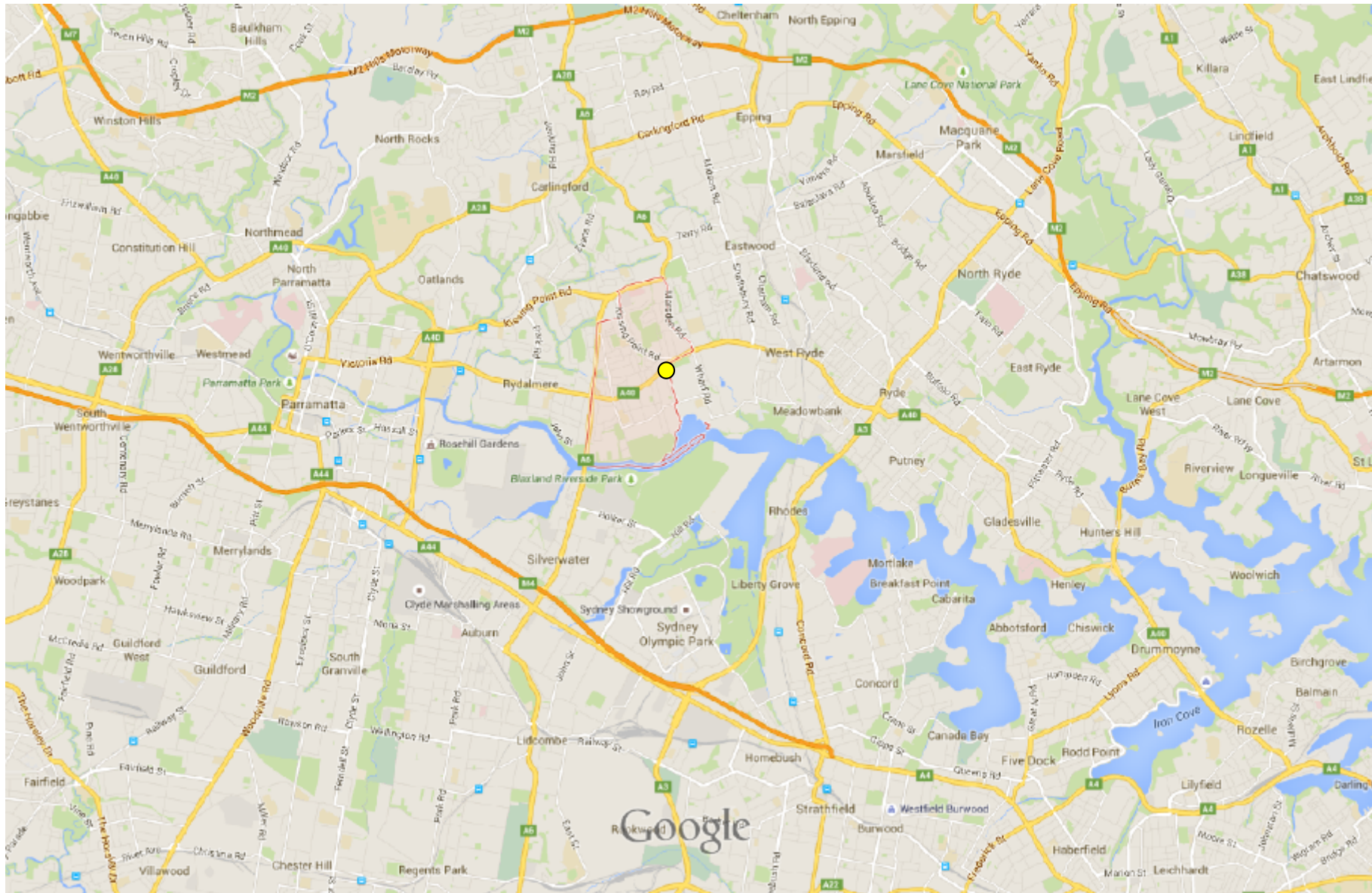
The assessment found that across the Site, BTEX, naphthalene, volatile and semi-volatile TRH, PAH, OCPs, OPPs, PCBs and heavy metals were all at concentrations below the relevant Health Investigation Levels and Site Acceptance Criteria.

DLA considers that the Site assessment objectives have been achieved in accordance with DA conditions, SEPP 55 and *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA, 2011). This PSI concludes that **the Site at 15-19 Hughes Avenue, Ermington can be made suitable for the intended land use consistent with NEPM (NEPC, 2013) Residential B – minimal access to soil, following the remediation and subsequent validation of asbestos impacted areas located at the rear of the property at 19 Hughes Avenue.** Following remediation, an Asbestos Clearance Certificate should be issued in accordance with the *How to Safely Remove Asbestos* Code of Practice (Safe Work Australia, 2011).

10.0 REFERENCES

- *Australian and New Zealand Guidelines for the Management of Contaminated Sites* (ANZECC/NHMRC 1992);
- *Australia and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC, 2000);
- *Australian Drinking Water Guidelines, National Water Quality Management Strategy 2011*;
- Chapman, G A, Murphy, C L, Tille, P J, Atkinson, G and Morse, R J, *Sydney Soil Landscapes Map, Series 9130* (1989);
- *Code of Practice for the Safe Removal of Asbestos* (NOHSC, 2nd eds, 2005);
- *Contaminated Land Management Act 1997* (NSW);
- *Contaminated Sites: Assessing Service Station Sites, 1994* (NSW EPA, 1994);
- *Contaminated Site: Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA, 2011);
- *Contaminated Sites: Guidelines on Duty to Report Contamination under the Contamination Land Management Act 1997* (NSW DECC, 2009);
- *Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination* (NSW DEC, 2007);
- *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme* (NSW EPA, 2nd eds., 2006);
- *Contaminated Sites: Guidelines on Significant Risk of Harm from Contaminated Land and the Duty to Report* (NSW EPA 1999);
- *Contaminated Sites: Sampling Design Guidelines* (NSW EPA 1995);
- *Environmental Guidelines: Solid Waste Landfills* (NSW EPA, 1996);
- *Guidelines for the Assessment of On-Site Containment of Contaminated Soil* (ANZECC, 1999).
- *Health - Based Soil Investigation Levels, Imray, P & Langley, A, National Environmental Health Forum Monographs, Soil Series No. 2 (2nd Ed), South Australian Health Commission (NEHF 1998b)*;
- *How to Safely Remove Asbestos: Code of Practice* (WorkCover, 2011);
- *National Environment Protection (Assessment of Site Contamination) Measure (No.1)* (NEPC, 2013);
- *Managing Land Contamination: Planning Guidelines, SEPP 55 - Remediation of Land* (DUAP, 1998);
- *Storage and Handling of Dangerous Goods Code of Practice 2005*;
- *Pacific Southwest, Region 9 Regional Screening Levels* (US EPA, 2014);
- *Waste Avoidance and Resource Recovery Act 2001* (NSW);
- *Waste Classification Guidelines* (NSW EPA, 2014); and,
- *Work Health and Safety Act 2011* (NSW) and associated regulations.

FIGURE 1 – SITE LOCATION



Legend

● Site Location



DLA Environmental Services
A Pacific Environment company
Sydney Office Phone (02) 9476 1765 Fax (02) 9476 1557
Maitland Office Phone (02) 4933 0001

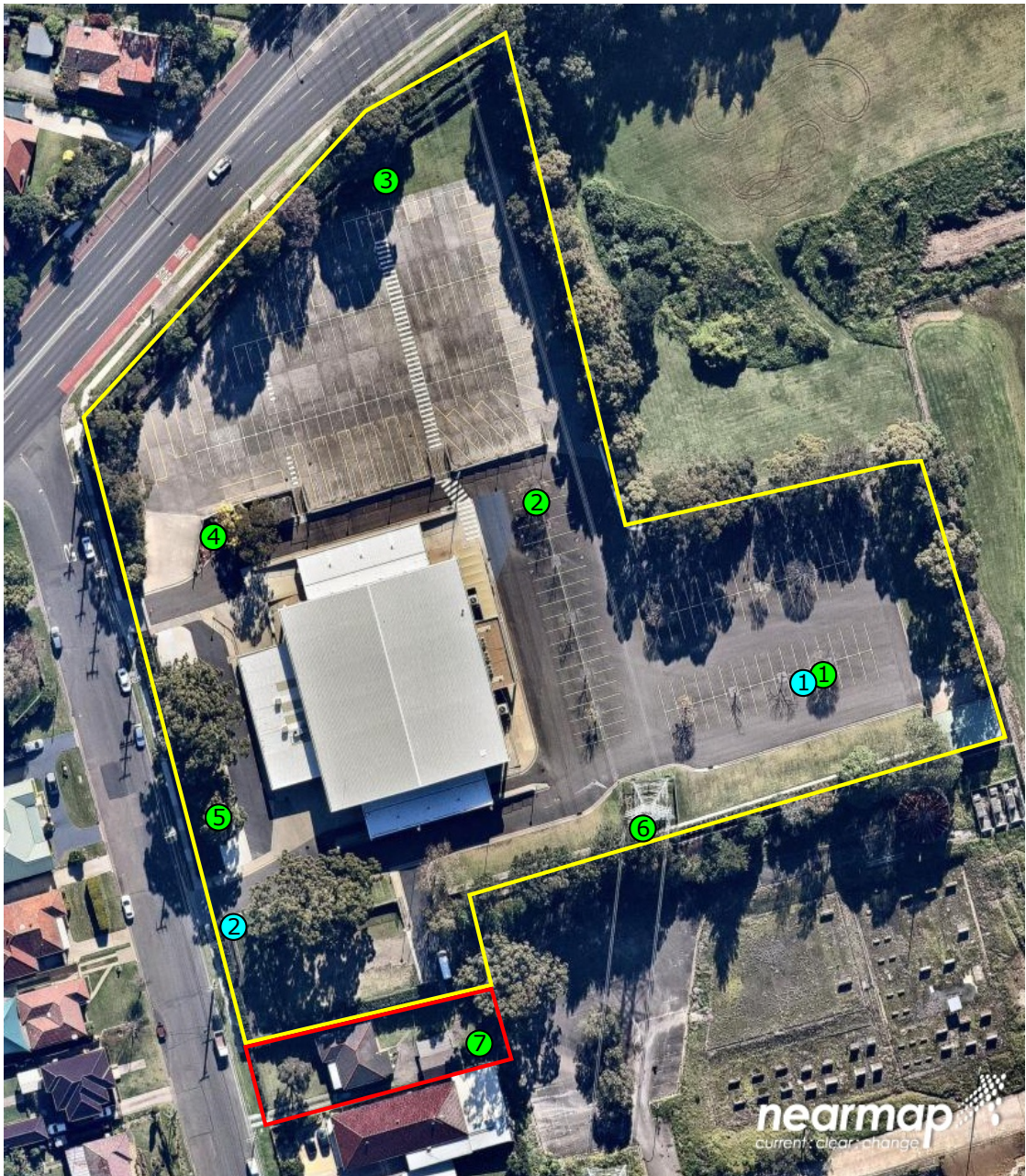
Title **Site Location**

Client **Ermington Gospel Trust Pty Ltd**

Project No.	Figure No	Date
DL 3560	1.0	07/07/2015
Scale	Completed	Revision
Not to scale	MJ	R01

FIGURE 2 – Site Layout with Sample Locations

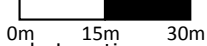
N



Legend

- Site Boundary, 19 Hughes Ave
- Site Boundary, 15 Hughes Ave

Approximate Scale



- ① Sample Location Labeled as "S-#"
- ① Sample Location Labeled as "Mat-#"



Sydney Office Phone (02) 9476 1765 Fax (02) 9476 1557
 Maitland Office Phone (02) 4933 0001

Title Sample Locations			
Client Ermington Gospel Trust Pty Ltd	Figure No 1.0	Date 23/7/15	
Project No. DL 3560	Scale As Shown	Compiled MJ	Revision R00

APPENDIX A – DATA SUMMARY TABLE



NEPM (NEPC, 2013)
Residential B
Land Use Criteria (mg/kg)

Asbestos

HSL: 0.7, ESL: 65

HSL: 480, ESL: 105

HSL: NL, ESL: 125

HSL: 110, ESL: 45

5

C6-ClO
HSL: 50, ESL: 180,
ML: 700

>C10-C16
HSL: 280, ESL: 120,
ML: 1,000

>C16-C34
HSL: NL, ESL: 300,
ML: 2,500

>C34-C40
HSL: NL, ESL: 2,800,
ML: 10,000

HIL: 4, ESL: 0.7

Sample ID	Depth (m)	Date	Chemical Report	Description	Comment		BTEX - Clay soils					TRH - Fine soils				PAH
							Benz	Toluene	EthylBe	Xylene	Naph	F1	F2	F3	F4	BaP TEQ
S-1	0.3	7/07/2015	130771	Red Clay	Natural	--	<0.2	<0.5	<1	<1	<1	<25	<50	<100	<100	<0.5
S-2	0.2	7/07/2015	130771	Roadbase	Fill	--	<0.2	<0.5	<1	<1	<1	<25	<50	<100	<100	<0.5
S-3	0.2	7/07/2015	130771	Coarse Gravel	Fill	--	<0.2	<0.5	<1	<1	<1	<25	<50	<100	<100	<0.5
S-4	0.2	7/07/2015	130771	Pale brown/orange sand	Fill	--	<0.2	<0.5	<1	<1	<1	<25	<50	<100	<100	<0.5
S-5	0.5	7/07/2015	130771	Sandy loam brown	Fill	--	<0.2	<0.5	<1	<1	<1	<25	<50	<100	<100	<0.5
S-6	0.2	7/07/2015	130771	Sandy loam pale brown	Fill	--	<0.2	<0.5	<1	<1	<1	<25	<50	<100	<100	<0.5
S-7	0.1	7/07/2015	130771	Sandy loam black	Fill - Fragments of potential ACM	ND	<0.2	<0.5	<1	<1	<1	<25	<50	<100	<100	<0.5
Mat-1	0.00	7/07/2015	130936	Asphalt	Carpark Hardstand	--	<0.2	<0.5	<1	<1	<1	<25	<50	1300	1700	<0.5
Mat-2	0.00	7/07/2015	ASET45138	Service Pit Casing	Fibrous Concrete	ND	--	--	--	--	--	--	--	--	--	--
INTRA-LABORATORY DUPLICATES																
S-4-A	0.2	7/07/2015	130771	Pale brown/orange sand	Fill	--	<0.2	<0.5	<1	<1	<1	<25	<50	<100	<100	<0.5
INTER-LABORATORY DUPLICATES																
STATISTICAL ANALYSIS																
Min						-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1300.0	1700.0	0.0
Max						-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1300.0	1700.0	0.0
Avg						-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1300.0	1700.0	#DIV/0!
Stdev						-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
95% UCL						-										
* Depth relates to Depth Below Surface Level -- Not Tested nd = Not Detected Above Laboratory LOR NL = Not Limiting Bold = Detected Above Laboratory LOR RED = Exceeds HIL Criteria																



DLA Environmental Services A Pacific Environment company				400	DDT+DDD+DDE 600	Aldrin+Dieldrin 10	Chlordane 90	Endosulfan 400	Endrin 20	Heptachlor 10	HCB 15	Methoxychlor 500	1	500	150	500	30,000	1,200	120	1,200	60,000	1	
Sample ID	Depth (m)	Date	Chemical Report	PAH	Pesticides								Heavy Metals										
				Total	OC								OP	PCB	As	Cd	Cr VI	Cu	Pb	Hg	Ni	Zn	Phenol
S-1	0.3	7/07/2015	130771	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	15	<0.4	24	5	19	<0.1	3	11	--
S-2	0.2	7/07/2015	130771	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<4	<0.4	8	71	3	<0.1	48	29	--
S-3	0.2	7/07/2015	130771	0.13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<4	<0.4	15	23	12	<0.1	41	30	--	
S-4	0.2	7/07/2015	130771	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	5	<0.4	11	18	26	<0.1	8	39	--	
S-5	0.5	7/07/2015	130771	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	6	<0.4	18	17	38	<0.1	18	47	--	
S-6	0.2	7/07/2015	130771	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<4	<0.4	9	46	5	<0.1	110	51	--	
S-7	0.1	7/07/2015	130771	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7	<0.4	19	21	38	<0.1	9	130	--	
Mat-1	0.00	7/07/2015	130936	0.22	--	--	--	--	--	--	--	--	--	<4	<0.4	5	16	4	<0.1	5	17	<5	
Mat-2	0.00	7/07/2015	ASET45138	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
INTRA-LABORATORY DUPLICATES																							
S-4-A	0.2	7/07/2015	130771	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	4	<0.4	10	17	27	<0.1	7	43	--	
INTER-LABORATORY DUPLICATES																							
STATISTICAL ANALYSIS																							
Min				0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	5.0	5.0	3.0	0.0	3.0	11.0	0.0
Max				0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	24.0	71.0	38.0	0.0	110.0	130.0	0.0
Avg				0.2	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	8.3	#DIV/0!	13.6	27.1	18.1	#DIV/0!	30.3	44.3	#DIV/0!
Stdev				0.1	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	4.6	#DIV/0!	6.5	21.2	14.6	#DIV/0!	36.4	37.3	#DIV/0!
95% UCL																							
* Depth relates to Depth Below Surface Level				-- Not Tested				* Depth relates to Depth Below Surface Level				-- Not Tested				nd = Not Detected Above Laboratory LOR				NL = Not Lim Bold = Detected Above Laboratory LOR			

APPENDIX B – NATA CERTIFIED ANALYTICAL DATA

CERTIFICATE OF ANALYSIS

130771

Client:

DLA Environmental Services Pty Ltd
Unit 3, 38 Leighton Pl
Hornsby
NSW 2077

Attention: Matthew Junghuns

Sample log in details:

Your Reference: **DL3560**
No. of samples: 8 Soils
Date samples received / completed instructions received 08/07/2015 / 08/07/2015

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: 15/07/15 / 14/07/15
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. **Tests not covered by NATA are denoted with *.**

Results Approved By:



Jacinta Hurst
Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	130771-1	130771-2	130771-3	130771-4	130771-5
Your Reference	-----	S-1	S-2	S-3	S-4	S-4-A
Depth	-----	0.3	0.2	0.2	0.2	0.2
Date Sampled		07/07/2015	07/07/2015	07/07/2015	07/07/2015	07/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/07/2015	09/07/2015	09/07/2015	09/07/2015	09/07/2015
Date analysed	-	09/07/2015	09/07/2015	09/07/2015	09/07/2015	09/07/2015
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	95	106	103	111	110

vTRH(C6-C10)/BTEXN in Soil				
Our Reference:	UNITS	130771-6	130771-7	130771-8
Your Reference	-----	S-5	S-6	S-7
Depth	-----	0.5	0.2	0.1
Date Sampled		07/07/2015	07/07/2015	07/07/2015
Type of sample		Soil	Soil	Soil
Date extracted	-	09/07/2015	09/07/2015	09/07/2015
Date analysed	-	09/07/2015	09/07/2015	09/07/2015
TRHC ₆ - C ₉	mg/kg	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	109	107	108

svTRH (C10-C40) in Soil		130771-1	130771-2	130771-3	130771-4	130771-5
Our Reference:	UNITS	S-1	S-2	S-3	S-4	S-4-A
Your Reference	-----					
Depth	-----	0.3	0.2	0.2	0.2	0.2
Date Sampled		07/07/2015	07/07/2015	07/07/2015	07/07/2015	07/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/07/2015	09/07/2015	09/07/2015	09/07/2015	09/07/2015
Date analysed	-	10/07/2015	10/07/2015	10/07/2015	10/07/2015	10/07/2015
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	79	75	79	77	95

svTRH (C10-C40) in Soil		130771-6	130771-7	130771-8
Our Reference:	UNITS	S-5	S-6	S-7
Your Reference	-----			
Depth	-----	0.5	0.2	0.1
Date Sampled		07/07/2015	07/07/2015	07/07/2015
Type of sample		Soil	Soil	Soil
Date extracted	-	09/07/2015	09/07/2015	09/07/2015
Date analysed	-	10/07/2015	10/07/2015	10/07/2015
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100
Surrogate o-Terphenyl	%	76	76	83

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	130771-1 S-1 0.3 07/07/2015 Soil	130771-2 S-2 0.2 07/07/2015 Soil	130771-3 S-3 0.2 07/07/2015 Soil	130771-4 S-4 0.2 07/07/2015 Soil	130771-5 S-4-A 0.2 07/07/2015 Soil
Date extracted	-	09/07/2015	09/07/2015	09/07/2015	09/07/2015	09/07/2015
Date analysed	-	09/07/2015	09/07/2015	09/07/2015	09/07/2015	09/07/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
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 Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	0.13	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	103	98	97	99	123

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	130771-6 S-5 0.5 07/07/2015 Soil	130771-7 S-6 0.2 07/07/2015 Soil	130771-8 S-7 0.1 07/07/2015 Soil
Date extracted	-	09/07/2015	09/07/2015	09/07/2015
Date analysed	-	09/07/2015	09/07/2015	09/07/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc (half)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc (PQL)	mg/kg	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	96	95	110

Organochlorine Pesticides in soil		130771-2	130771-3	130771-7	130771-8
Our Reference:	UNITS	S-2	S-3	S-6	S-7
Your Reference	-----				
Depth	-----	0.2	0.2	0.2	0.1
Date Sampled		07/07/2015	07/07/2015	07/07/2015	07/07/2015
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	09/07/2015	09/07/2015	09/07/2015	09/07/2015
Date analysed	-	11/07/2015	11/07/2015	11/07/2015	11/07/2015
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	94	87	89	105

Organophosphorus Pesticides		130771-2	130771-3	130771-7	130771-8
Our Reference:	UNITS	S-2	S-3	S-6	S-7
Your Reference	-----				
Depth	-----	0.2	0.2	0.2	0.1
Date Sampled		07/07/2015	07/07/2015	07/07/2015	07/07/2015
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	09/07/2015	09/07/2015	09/07/2015	09/07/2015
Date analysed	-	11/07/2015	11/07/2015	11/07/2015	11/07/2015
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	94	87	89	105

PCBs in Soil		130771-2	130771-3	130771-7	130771-8
Our Reference:	UNITS	S-2	S-3	S-6	S-7
Your Reference	-----				
Depth	-----	0.2	0.2	0.2	0.1
Date Sampled		07/07/2015	07/07/2015	07/07/2015	07/07/2015
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	09/07/2015	09/07/2015	09/07/2015	09/07/2015
Date analysed	-	11/07/2015	11/07/2015	11/07/2015	11/07/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	94	87	89	105

Acid Extractable metals in soil		130771-1	130771-2	130771-3	130771-4	130771-5
Our Reference:	UNITS	S-1	S-2	S-3	S-4	S-4-A
Your Reference	-----	0.3	0.2	0.2	0.2	0.2
Depth	-----	07/07/2015	07/07/2015	07/07/2015	07/07/2015	07/07/2015
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date digested	-	09/07/2015	09/07/2015	09/07/2015	09/07/2015	09/07/2015
Date analysed	-	09/07/2015	09/07/2015	09/07/2015	09/07/2015	09/07/2015
Arsenic	mg/kg	15	<4	<4	5	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	24	8	15	11	10
Copper	mg/kg	5	71	23	18	17
Lead	mg/kg	19	3	12	26	27
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	48	41	8	7
Zinc	mg/kg	11	29	30	39	43

Acid Extractable metals in soil		130771-6	130771-7	130771-8
Our Reference:	UNITS	S-5	S-6	S-7
Your Reference	-----	0.5	0.2	0.1
Depth	-----	07/07/2015	07/07/2015	07/07/2015
Date Sampled		Soil	Soil	Soil
Type of sample				
Date digested	-	09/07/2015	09/07/2015	09/07/2015
Date analysed	-	09/07/2015	09/07/2015	09/07/2015
Arsenic	mg/kg	6	<4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	18	9	19
Copper	mg/kg	17	46	21
Lead	mg/kg	38	5	38
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	18	110	9
Zinc	mg/kg	47	51	130

Misc Inorg - Soil		
Our Reference:	UNITS	130771-1
Your Reference	-----	S-1
Depth	-----	0.3
Date Sampled		07/07/2015
Type of sample		Soil
Date prepared	-	13/07/2015
Date analysed	-	13/07/2015
pH 1:5 soil:water	pHUnits	7.3
Electrical Conductivity 1:5 soil:water	µS/cm	42

CEC		
Our Reference:	UNITS	130771-1
Your Reference	-----	S-1
Depth	-----	0.3
Date Sampled		07/07/2015
Type of sample		Soil
Date extracted	-	10/07/2015
Date analysed	-	10/07/2015
Exchangeable Ca	meq/100g	3.7
Exchangeable K	meq/100g	0.2
Exchangeable Mg	meq/100g	4.4
Exchangeable Na	meq/100g	<0.1
Cation Exchange Capacity	meq/100g	8.4

Moisture						
Our Reference:	UNITS	130771-1	130771-2	130771-3	130771-4	130771-5
Your Reference	-----	S-1	S-2	S-3	S-4	S-4-A
Depth	-----	0.3	0.2	0.2	0.2	0.2
Date Sampled		07/07/2015	07/07/2015	07/07/2015	07/07/2015	07/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	9/07/2015	9/07/2015	9/07/2015	9/07/2015	9/07/2015
Date analysed	-	10/07/2015	10/07/2015	10/07/2015	10/07/2015	10/07/2015
Moisture	%	20	3.3	19	14	13

Moisture				
Our Reference:	UNITS	130771-6	130771-7	130771-8
Your Reference	-----	S-5	S-6	S-7
Depth	-----	0.5	0.2	0.1
Date Sampled		07/07/2015	07/07/2015	07/07/2015
Type of sample		Soil	Soil	Soil
Date prepared	-	9/07/2015	9/07/2015	9/07/2015
Date analysed	-	10/07/2015	10/07/2015	10/07/2015
Moisture	%	9.0	6.2	21

Asbestos ID - soils		
Our Reference:	UNITS	130771-8
Your Reference	-----	S-7
Depth	-----	0.1
Date Sampled		07/07/2015
Type of sample		Soil
Date analysed	-	13/07/2015
Sample mass tested	g	Approx 30g
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

MethodID	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 subset	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 are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore " Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	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 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25oC in accordance with APHA latest edition 2510 and Rayment & Lyons.
Metals-009	Determination of exchangeable cations and cation exchange capacity in soil based on Rayment and Lyons 2011.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
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.

Client Reference: DL3560

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH(C6-C10)/BTEXN in Soil						Base II Duplicate II %RPD		
Date extracted	-			09/07/2015	130771-2	09/07/2015 09/07/2015	LCS-4	09/07/2015
Date analysed	-			09/07/2015	130771-2	09/07/2015 09/07/2015	LCS-4	09/07/2015
TRHC ₆ - C ₉	mg/kg	25	Org-016	<25	130771-2	<25 <25	LCS-4	121%
TRHC ₆ - C ₁₀	mg/kg	25	Org-016	<25	130771-2	<25 <25	LCS-4	121%
Benzene	mg/kg	0.2	Org-016	<0.2	130771-2	<0.2 <0.2	LCS-4	123%
Toluene	mg/kg	0.5	Org-016	<0.5	130771-2	<0.5 <0.5	LCS-4	119%
Ethylbenzene	mg/kg	1	Org-016	<1	130771-2	<1 <1	LCS-4	119%
m+p-xylene	mg/kg	2	Org-016	<2	130771-2	<2 <2	LCS-4	121%
o-Xylene	mg/kg	1	Org-016	<1	130771-2	<1 <1	LCS-4	118%
naphthalene	mg/kg	1	Org-014	<1	130771-2	<1 <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	114	130771-2	106 108 RPD: 2	LCS-4	116%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
svTRH(C10-C40) in Soil						Base II Duplicate II %RPD		
Date extracted	-			09/07/2015	130771-2	09/07/2015 09/07/2015	LCS-4	09/07/2015
Date analysed	-			09/07/2015	130771-2	10/07/2015 10/07/2015	LCS-4	09/07/2015
TRHC ₁₀ - C ₁₄	mg/kg	50	Org-003	<50	130771-2	<50 <50	LCS-4	94%
TRHC ₁₅ - C ₂₈	mg/kg	100	Org-003	<100	130771-2	<100 <100	LCS-4	94%
TRHC ₂₈ - C ₃₆	mg/kg	100	Org-003	<100	130771-2	<100 <100	LCS-4	78%
TRH>C ₁₀ -C ₁₆	mg/kg	50	Org-003	<50	130771-2	<50 <50	LCS-4	94%
TRH>C ₁₆ -C ₃₄	mg/kg	100	Org-003	<100	130771-2	<100 <100	LCS-4	94%
TRH>C ₃₄ -C ₄₀	mg/kg	100	Org-003	<100	130771-2	<100 <100	LCS-4	78%
Surrogate o-Terphenyl	%		Org-003	84	130771-2	75 81 RPD: 8	LCS-4	94%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Date extracted	-			09/07/2015	130771-2	09/07/2015 09/07/2015	LCS-4	09/07/2015
Date analysed	-			09/07/2015	130771-2	09/07/2015 09/07/2015	LCS-4	09/07/2015
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	130771-2	<0.1 <0.1	LCS-4	104%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	130771-2	<0.1 <0.1	LCS-4	90%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	130771-2	<0.1 <0.1	LCS-4	91%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	130771-2	<0.1 <0.1	LCS-4	90%

Client Reference: DL3560

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	130771-2	<0.1 <0.1	LCS-4	95%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	130771-2	<0.1 <0.1	LCS-4	94%
Benzo(b,j+k) fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	130771-2	<0.2 <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	130771-2	<0.05 <0.05	LCS-4	96%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	107	130771-2	98 114 RPD: 15	LCS-4	104%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organochlorine Pesticides in soil						Base II Duplicate II %RPD		
Date extracted	-			09/07/2015	130771-2	09/07/2015 09/07/2015	LCS-4	09/07/2015
Date analysed	-			11/07/2015	130771-2	11/07/2015 11/07/2015	LCS-4	09/07/2015
HCB	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	LCS-4	93%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	LCS-4	89%
Heptachlor	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	LCS-4	90%
delta-BHC	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	LCS-4	101%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	LCS-4	91%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	LCS-4	90%
Dieldrin	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	LCS-4	93%
Endrin	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	LCS-4	100%
pp-DDD	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	LCS-4	97%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	LCS-4	87%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	95	130771-2	94 89 RPD: 5	LCS-4	91%

Client Reference: DL3560

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organophosphorus Pesticides						Base II Duplicate II %RPD		
Date extracted	-			09/07/2015	130771-2	09/07/2015 09/07/2015	LCS-4	09/07/2015
Date analysed	-			11/07/2015	130771-2	11/07/2015 11/07/2015	LCS-4	11/07/2015
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	130771-2	<0.1 <0.1	LCS-4	95%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Chlorpyrifos	mg/kg	0.1	Org-008	<0.1	130771-2	<0.1 <0.1	LCS-4	95%
Chlorpyrifos-methyl	mg/kg	0.1	Org-008	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	130771-2	<0.1 <0.1	LCS-4	99%
Dimethoate	mg/kg	0.1	Org-008	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	130771-2	<0.1 <0.1	LCS-4	108%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	130771-2	<0.1 <0.1	LCS-4	109%
Malathion	mg/kg	0.1	Org-008	<0.1	130771-2	<0.1 <0.1	LCS-4	90%
Parathion	mg/kg	0.1	Org-008	<0.1	130771-2	<0.1 <0.1	LCS-4	108%
Ronnel	mg/kg	0.1	Org-008	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-008	95	130771-2	94 89 RPD: 5	LCS-4	92%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PCBs in Soil						Base II Duplicate II %RPD		
Date extracted	-			09/07/2015	130771-2	09/07/2015 09/07/2015	LCS-4	09/07/2015
Date analysed	-			11/07/2015	130771-2	11/07/2015 11/07/2015	LCS-4	11/07/2015
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	130771-2	<0.1 <0.1	LCS-4	121%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	130771-2	<0.1 <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	95	130771-2	94 89 RPD: 5	LCS-4	92%

Client Reference: DL3560

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date digested	-			09/07/2015	130771-2	09/07/2015 09/07/2015	LCS-1	09/07/2015
Date analysed	-			09/07/2015	130771-2	09/07/2015 09/07/2015	LCS-1	09/07/2015
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	130771-2	<4 <4	LCS-1	107%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	130771-2	<0.4 <0.4	LCS-1	101%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	130771-2	8 10 RPD: 22	LCS-1	104%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	130771-2	71 88 RPD: 21	LCS-1	101%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	130771-2	3 3 RPD: 0	LCS-1	99%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	130771-2	<0.1 <0.1	LCS-1	104%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	130771-2	48 56 RPD: 15	LCS-1	101%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	130771-2	29 35 RPD: 19	LCS-1	103%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Misc Inorg - Soil						Base II Duplicate II %RPD		
Date prepared	-			13/07/2015	[NT]	[NT]	LCS-1	13/07/2015
Date analysed	-			13/07/2015	[NT]	[NT]	LCS-1	13/07/2015
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	LCS-1	102%
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	[NT]	[NT]	LCS-1	100%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
CEC						Base II Duplicate II %RPD		
Date extracted	-			10/07/2015	[NT]	[NT]	LCS-1	10/07/2015
Date analysed	-			10/07/2015	[NT]	[NT]	LCS-1	10/07/2015
Exchangeable Ca	meq/100 g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-1	112%
Exchangeable K	meq/100 g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-1	103%
Exchangeable Mg	meq/100 g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-1	112%
Exchangeable Na	meq/100 g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-1	102%
Cation Exchange Capacity	meq/100 g	1	Metals-009	<1.0	[NT]	[NT]	[NR]	[NR]

Report Comments:

Asbestos: A portion of the supplied sample were 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: Sample 130771-8 were sub-sampled from jars provided by 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

NA: Test not required

<: Less than

PQL: Practical Quantitation Limit

RPD: Relative Percent Difference

>: Greater than

NT: Not tested

NA: Test not required

LCS: Laboratory Control Sample

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.

CERTIFICATE OF ANALYSIS

130936

Client:

DLA Environmental Services Pty Ltd
Unit 3, 38 Leighton Pl
Hornsby
NSW 2077

Attention: Matthew Junghuns

Sample log in details:

Your Reference: **DL3560**
No. of samples: 1 solid
Date samples received / completed instructions received 10/07/15 / 10/07/15

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: 17/07/15 / 15/07/15
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. **Tests not covered by NATA are denoted with *.**

Results Approved By:



Jacinta Hurst
Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference:	UNITS	130936-1
Your Reference	-----	Mat-1
Date Sampled	-----	07/07/2015
Type of sample		solid
Date extracted	-	13/07/2015
Date analysed	-	14/07/2015
TRHC ₆ - C ₉	mg/kg	<25
TRHC ₆ - C ₁₀	mg/kg	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
naphthalene	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	109

svTRH (C10-C40) in Soil		
Our Reference:	UNITS	130936-1
Your Reference	-----	Mat-1
Date Sampled	-----	07/07/2015
Type of sample		solid
Date extracted	-	13/07/2015
Date analysed	-	14/07/2015
TRHC ₁₀ - C ₁₄	mg/kg	<50
TRHC ₁₅ - C ₂₈	mg/kg	470
TRHC ₂₉ - C ₃₆	mg/kg	1,300
TRH>C ₁₀ -C ₁₆	mg/kg	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50
TRH>C ₁₆ -C ₃₄	mg/kg	1,300
TRH>C ₃₄ -C ₄₀	mg/kg	1,700
Surrogate o-Terphenyl	%	94

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	130936-1 Mat-1 07/07/2015 solid
Date extracted	-	13/07/2015
Date analysed	-	14/07/2015
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	0.2
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Total Positive PAHs	mg/kg	0.22
Surrogate p-Terphenyl-d14	%	112

Misc Soil - Inorg		
Our Reference:	UNITS	130936-1
Your Reference	-----	Mat-1
Date Sampled	-----	07/07/2015
Type of sample		solid
Date prepared	-	13/07/2015
Date analysed	-	13/07/2015
Total Phenolics (as Phenol)	mg/kg	<5

Acid Extractable metals in soil		
Our Reference:	UNITS	130936-1
Your Reference	-----	Mat-1
Date Sampled	-----	07/07/2015
Type of sample		solid
Date digested	-	13/07/2015
Date analysed	-	13/07/2015
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	5
Copper	mg/kg	16
Lead	mg/kg	4
Mercury	mg/kg	<0.1
Nickel	mg/kg	5
Zinc	mg/kg	17

Moisture		
Our Reference:	UNITS	130936-1
Your Reference	-----	Mat-1
Date Sampled	-----	07/07/2015
Type of sample		solid
Date prepared	-	13/07/2015
Date analysed	-	14/07/2015
Moisture	%	0.5

MethodID	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 subset	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 are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore " Total +ve PAHs" is simply a sum of the positive individual PAHs.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	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.

Client Reference: DL3560

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH(C6-C10)/BTEXN in Soil						Base II Duplicate II %RPD		
Date extracted	-			13/07/2015	[NT]	[NT]	LCS-4	13/07/2015
Date analysed	-			14/07/2015	[NT]	[NT]	LCS-4	14/07/2015
TRHC ₆ - C ₉	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-4	102%
TRHC ₆ - C ₁₀	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-4	102%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-4	96%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-4	98%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-4	106%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-4	106%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-4	105%
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	123	[NT]	[NT]	LCS-4	93%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
svTRH(C10-C40) in Soil						Base II Duplicate II %RPD		
Date extracted	-			13/07/2015	[NT]	[NT]	LCS-4	13/07/2015
Date analysed	-			13/07/2015	[NT]	[NT]	LCS-4	13/07/2015
TRHC ₁₀ - C ₁₄	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-4	97%
TRHC ₁₅ - C ₂₈	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	105%
TRHC ₂₈ - C ₃₆	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	76%
TRH>C ₁₀ -C ₁₆	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-4	97%
TRH>C ₁₆ -C ₃₄	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	105%
TRH>C ₃₄ -C ₄₀	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	76%
Surrogate o-Terphenyl	%		Org-003	82	[NT]	[NT]	LCS-4	117%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Date extracted	-			13/07/2015	[NT]	[NT]	LCS-4	13/07/2015
Date analysed	-			13/07/2015	[NT]	[NT]	LCS-4	13/07/2015
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	113%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	92%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	102%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	97%

Client Reference: DL3560

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	103%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	96%
Benzo(b,j+k) fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-4	102%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	107	[NT]	[NT]	LCS-4	132%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Misc Soil - Inorg						Base II Duplicate II %RPD		
Date prepared	-			13/07/2015	[NT]	[NT]	LCS-1	13/07/2015
Date analysed	-			13/07/2015	[NT]	[NT]	LCS-1	13/07/2015
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	[NT]	[NT]	LCS-1	102%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date digested	-			13/07/2015	[NT]	[NT]	LCS-5	13/07/2015
Date analysed	-			13/07/2015	[NT]	[NT]	LCS-5	13/07/2015
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-5	103%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	LCS-5	91%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-5	101%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-5	101%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-5	95%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-5	93%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-5	96%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-5	100%

Report Comments:

Asbestos ID was analysed by Approved Identifier: Not applicable for this job
Asbestos ID was authorised by Approved Signatory: Not applicable for this job

INS: Insufficient sample for this test
NA: Test not required
<: Less than

PQL: Practical Quantitation Limit
RPD: Relative Percent Difference
>: Greater than

NT: Not tested
NA: Test not required
LCS: Laboratory Control Sample

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.



Our ref : ASET45138/ 48318 / 1 - 1
Your ref :DL3560 - Ermington
NATA Accreditation No: 14484

9 July 2015

DLA Environmental Services Pty Ltd
3/38 Leighton Street
Hornsby NSW 2077

Attn: Mr David Lane

Dear David

Asbestos Identification

This report presents the results of one sample, forwarded by DLA Environmental Services Pty Ltd on 9 July 2015, for analysis for asbestos.

1.Introduction:One sample forwarded was examined and analysed for the presence of asbestos.

2. Methods : The sample was examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method (**Safer Environment Method 1.**)

3. Results : **Sample No. 1. ASET45138 / 48318 / 1. MAT - 2.**
Approx dimensions 6.0 cm x 4.0 cm x 1.5 cm
The sample consisted of a fragment of a fibre cement material containing synthetic mineral fibres.
No asbestos detected.

Analysed and reported by,

Nisansala Maddage. BSc(Hons)
Environmental Scientist/Approved Identifier
Approved Signatory



**WORLD RECOGNISED
ACCREDITATION**

Accredited for compliance with ISO/IEC 17025.

The results contained in this report relate only to the sample/s submitted for testing. Australian Safer Environment & Technology accepts no responsibility for whether or not the submitted sample/s is/are representative.

APPENDIX C – Historical Title Search

Legal Liaison Searching Services

ABN: 52832569710
Ph: 02 9233 5800
Fax: 02 9221 2827

Level 4, 70 Castlereagh Street,
Sydney 2000
PO Box 2513 Sydney NSW 2000
DX 1019 Sydney

Summary of Owners Report

LPI

Sydney

Address: - 15 – 19 Hughes Avenue & 655 to 657 Victoria Road, Ermington

Description: - Lot 1 D.P. 588575

<u>Date of Acquisition and term held</u>	<u>Registered Proprietor(s) & Occupations where available</u>	<u>Reference to Title at Acquisition and sale</u>
26.05.1893 (1893 to 1916)	Richard Hughes (Orchardist)	Vol 1094 Fol 33
08.03.1916 (116 to 1948)	Frances Sarah Davies (Married Woman)	Vol 1094 Fol 33 Now Vol 4341 Fol 24
10.09.1948 (1948 to 1971)	Harold Phipers Woods (Dairyman) Hazel Lillian Lindsay (Married Woman)	Vol 4341 Fol 24 Now Vol 7305 Fol's 44 & 45
24.03.1971 (1971 to 1971)	Harold Phipers Woods (Farmer) Leslie Herman Juskovic (Section 93 Application not investigated)	Vol 7305 Fol's 44 & 45
15.04.1971 (1971 to 1972)	Harold Phipers Woods (Farmer) William Douglas Lindsay (Dairy Farmer) Jeanette Blanche French (Married Woman)	Vol 7305 Fol's 44 & 45
28.07.1972 (1972 to 1973)	Norman James Peel Joyce (Company Director) Thomas Wynne Heaney (Company Director) Francis Robert Heaney (Company Director) Robert Thomas Bullock (Business Consultant)	Vol 7305 Fol's 44 & 45 Now Vol 11940 Fol 194
22.05.1973 (1973 to 1975)	Francis Robert Heaney (Company Director) Robert Thomas Bullock (Business Consultant) Robert William Faulkes (Company Director)	Vol 11940 Fol 194
16.09.1975 (1975 to 1977)	George Maurice Francis Willy (Textile Agent) John Lee Thompson (Technical Representative) Ross Gordon Hales (Salesman) Robert William Faulkes (Wholesale Distributor)	Vol 11940 Fol 194
18.04.1977 (1977 to 1977)	Robert William Faulkes (Wholesale Distributor) Ross Gordon Hales (Salesman) John Lee Thompson (Technical Representative)	Vol 11940 Fol 194
23.08.1977 (1977 to 1982)	Robert William Faulkes (Wholesale Distributor) Ross Gordon Hales (Salesman) Ronald James Olsson (Carrier) Edward Trimmer (Storeman)	Vol 11940 Fol 194 Now Vol 13673 Fol 248
29.07.1982 (1982 to 1982)	Robert William Faulkes (Wholesale Distributor) Ronald James Olsson (Carrier) Edward Trimmer (Storeman)	Vol 13673 Fol 248
29.09.1982 (1982 to 1982)	Robert William Faulkes (Wholesale Distributor) Ronald James Olsson (Carrier) Philip Bruce McNaughton	Vol 13673 Fol 248
12.11.1982 (1982 to 1988)	Ronald James Olsson (Carrier) Philip Bruce McNaughton Neill (? Neil) Baxter Harrison	Vol 13673 Fol 248 Now 1/588575

Legal Liaison Searching Services

ABN: 52832569710
Ph: 02 9233 5800
Fax: 02 9221 2827

Level 4, 70 Castlereagh Street,
Sydney 2000
PO Box 2513 Sydney NSW 2000
DX 1019 Sydney

<u>Date of Acquisition and term held</u>	<u>Registered Proprietor(s) & Occupations where available</u>	<u>Reference to Title at Acquisition and sale</u>
26.05.1988 (1988 to 1993)	Neil (? Neill) Baxter Harrison Edward Bruce Crutcher Bruce David Hales John Lee Thompson Bruce Donaldson Alderton	1/588575
30.06.1993 (2014 to 2014)	Edward Bruce Crutcher Bruce David Hales Bruce Donaldson Alderton Philip Bruce McNaughton Benjamin Hales	1/588575
05.12.2014 (2014 to date)	# Bruce Donaldson Alderton # Philip Bruce McNaughton # Ross Gordon Hales # Ian Peter Shirliff # John Kenneth Anderson # Ronald Stephen Dartnall	1/588575

Denotes current registered proprietors

The owners from 28.07.1972 would seem to be Trustees for the Ermington Gospel Trust

Easements: -

- 22.02.1950 Easement for Electricity purposes (F 168263)
- 26.02.1958 Easement for Batter (G 789629)

Leases: -

- 18.09.1942 to Percy Andrew Vidler (Dairyman) – Expired 30.09.1949

Yours Sincerely
Mark Groll
23 June 2015
(Ph: 0412 199 304)

Requested Parcel : Lot 1 DP 588575

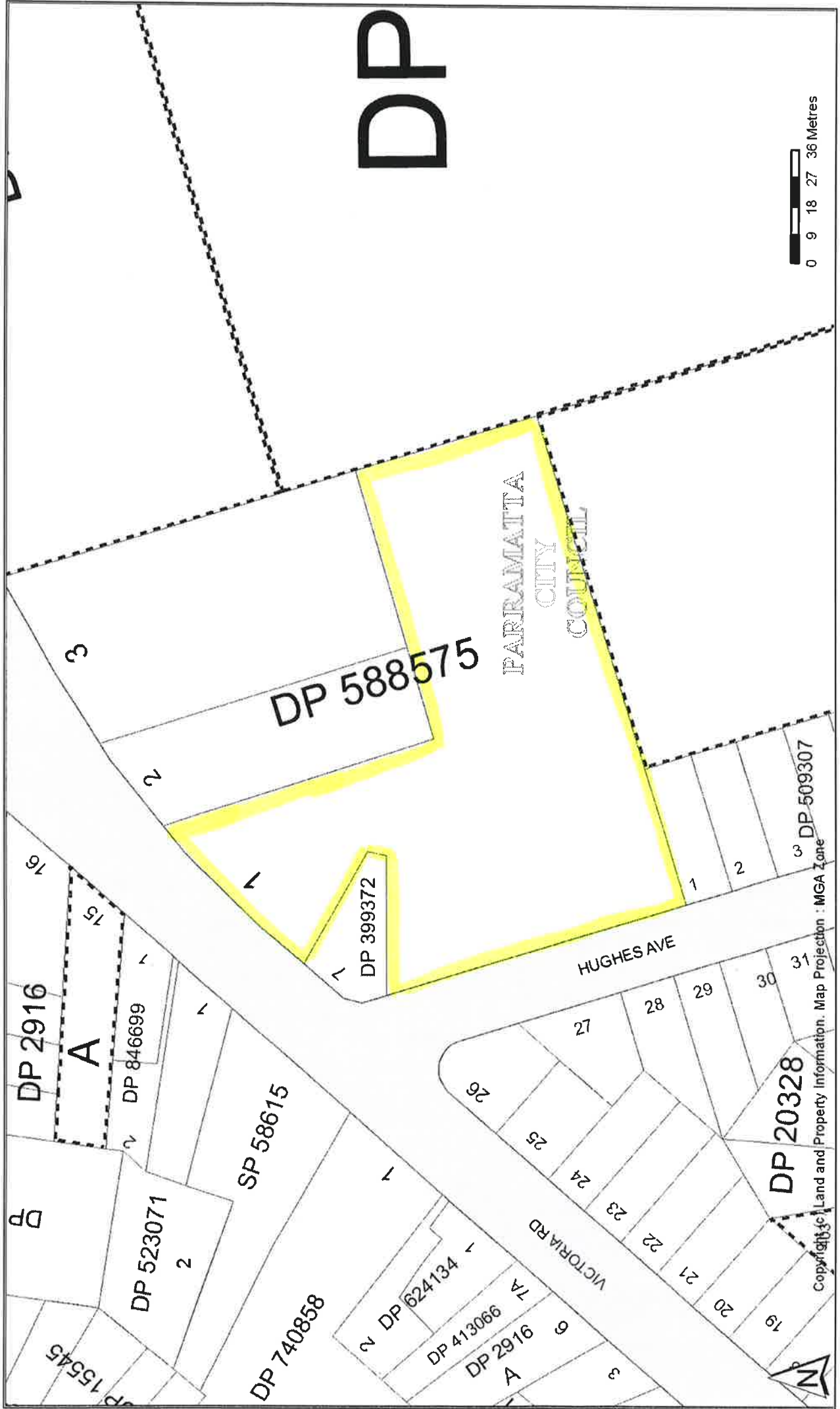
Identified Parcel : Lot 1 DP 588575

Locality : ERMINGTON

LGA : PARRAMATTA

Parish : FIELD OF MARS

County : CUMBERLAND



NEW SOUTH WALES

CERTIFICATE OF TITLE
DEEDS ACT, 1900, as amended.



11940

Appln. No. 7936

Vol. 11940 Fol. 194

Prior Titles Vol. 7305 Fols. 44
and 45

Edition issued 5-10-1972
M836526



CANCELLED

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.



Jawatson
Registrar General.



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in the parts of Lots 1 to 5 inclusive and Lot 6 of Section B in Deposited Plan 2916 shown in the plan hereon in the City of Parramatta Parish of Field of Mars and County of Cumberland being part of Portion 64 granted to The Reverend Samuel Marsden on 15-8-1803.

FIRST SCHEDULE

~~NORMAN JAMES PEEB JOYCE, of Gosford, Company Director, THOMAS WINNE HEANEY, of Lindfield, Company Director, FRANCIS ROBERT HEANEY, of Grows Nest, Company Director and ROBERT THOMAS BULLOCH, of Cheltenham, Business Consultant, as Joint Tenants.~~

Jawatson
Registrar General.

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
2. Easement created by Resumption No. F168263 affecting the piece of land 30.48 metres wide shown in the plan hereon.
3. Easement for Batter created by Resumption No. G789629 affecting the pieces of land Variable Width shown in the plan hereon.

Jawatson
Registrar General.

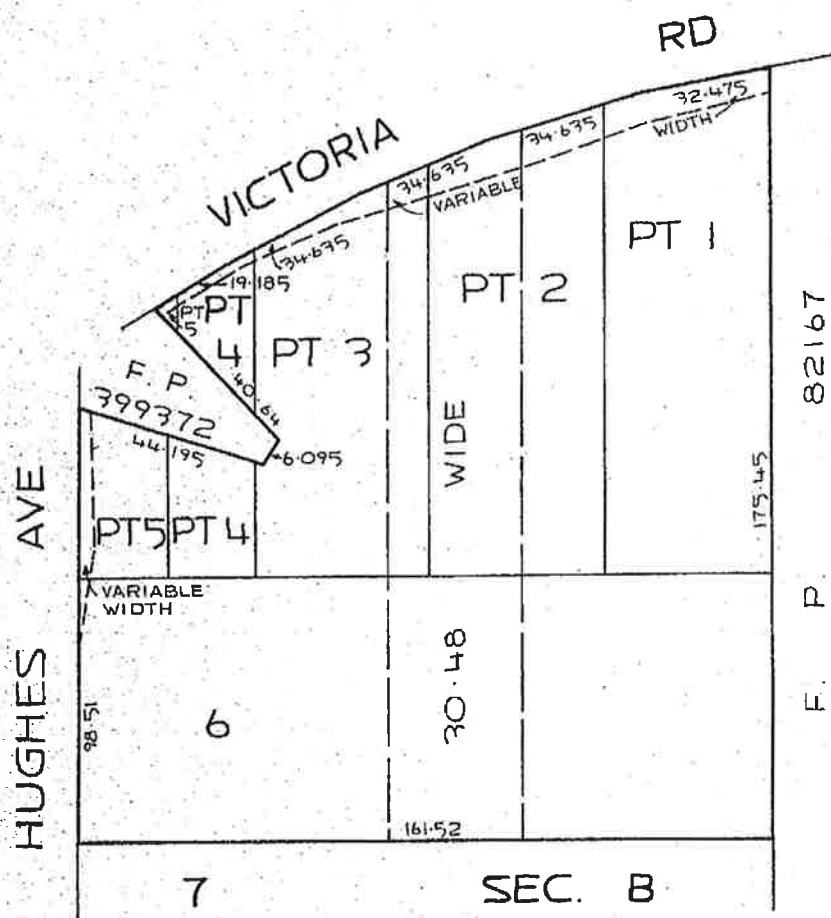
WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

PERSONS ARE CAUTIONED AGAINST ATTEMPTING TO OBTAIN THIS CERTIFICATE OR ANY NOTIFICATION HEREON

(Page 1) Vol. 11940 Fol. 194



PLAN SHOWING LOCATION OF LAND
LENGTHS ARE IN METRES



AREA 2.337 ha

REDUCTION RATIO 1:1250

M836526

J.A.C.
K.A.

PT 1

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	NATURE	INSTRUMENT NUMBER	DATE	ENTERED	Signature of Registrar General
Francis Robert Lenny of Grove West, Company Director, Robert Thomas Balloch of Cheltenham, Business Generalist and Robert William Faulkes of Burwood, Company Director as joint tenants	Transfer	M433504	22-5-1973	12-9-1973	<i>[Signature]</i>
George Maurice Francis Kelly of Roseville, Textile Agent, John Lee Thompson of Ermington, Technical Representative, Ross Gordon Hales of Dundas, Salesman and Robert William Faulkes of Burwood, Wholesale Distributor, Ross Gordon Hales of Dundas, Salesman, Ronald James Olsson of Wentworthville, Carrier, and Edward Trimmer of Ermington, Storeman, as Joint Tenants	Transfer	P414196		16-9-1975	<i>[Signature]</i>
<i>Robert William Faulkes of Burwood, Technical Representative and John Lee Thompson of Ermington, Technical Representative as joint tenants</i>	Request	233543		18-4-1977	<i>[Signature]</i>
	Transfer	Q236010		23-8-1977	<i>[Signature]</i>
		NEW CERTIFICATE OF TITLE ISSUED ON 02588575 NO DEALING TO BE REGISTERED WITHOUT REFERENCE TO			

CT 11940-194
 N 4 83301
 N 984026 of 27 pgs
 P3691637
 CT 1/1/75
 P14110672
 CT 27.10.7
 P9667330 pgs
 P 32143 pgs
 D.P. 58857
 P 12-2-7
 P 356013
 R

SECOND SCHEDULE (continued)

NATURE	INSTRUMENT NUMBER	DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION
Mortgage	115 56586	24-7-1972	to benefit of New South Wales Savings Bank Limited.		<i>[Signature]</i>	M984026
Mortgage	M984027	18-6-1974	to benefit of New South Wales Savings Bank Limited.	10-9-1976	<i>[Signature]</i>	P369163
Transfer	P966733		Easement to Drain Water appurtenant to the land within described affecting the piece of land shown as "Site of Proposed Easement to Drain Water 2m wide" and "3.21 site" in plan lodged with Transfer No. P966733 and "Proposed Easement to Drain Water 2 meters wide and valuable" in D.P. 58857 comprised in Certificate of Title Volume 10284 Folio 85 and Volume 10552 Folio 105	18-4-1977	<i>[Signature]</i>	
			This deed is cancelled as to whole			
			New Certificates of Title have issued on 1-8-1978 for lots in the <u>Proposed</u> Plan No. 588575 as follows: lots 1-3 Vol. 13673 Fol. 248-388 respectively.			
					<i>[Signature]</i>	

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



CERTIFICATE OF TITLE

PROPERTY ACT, 1900



13673-248

NEW SOUTH WALES

Appln. No.7936

Prior Title Vol.11940 Fol.194

Vol. 13673 Fol. 248



EDITION ISSUED

8 8 1978

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



Registrar General.

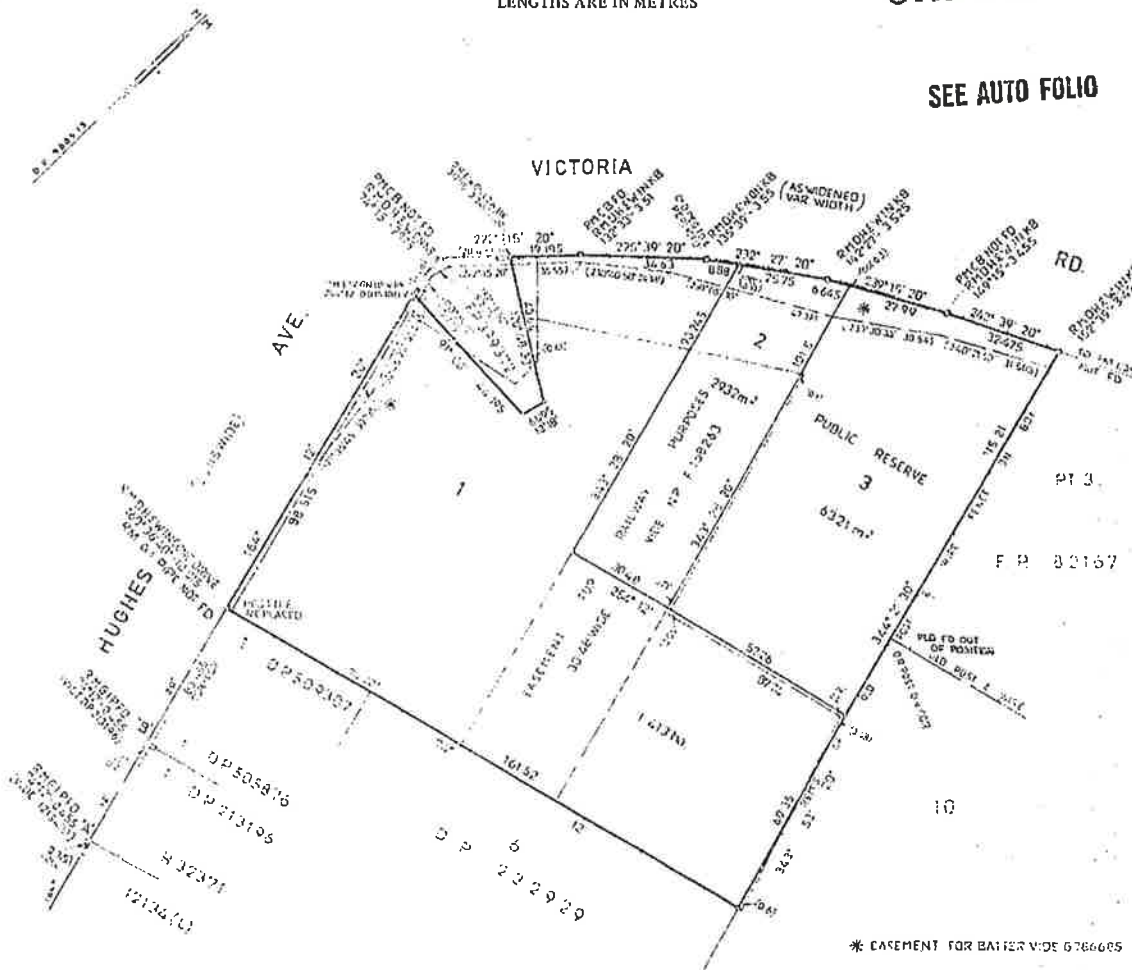


PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES

CANCELLED

SEE AUTO FOLIO



* CASEMENT FOR BATTER VIDE 676665

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 1 in Deposited Plan 588575 at Ermington in the City of Parramatta Parish of Field of Mars and County of Cumberland being part of Portion 64 granted to The Reverend Samuel Marsden on 15-8-1803.

FIRST SCHEDULE

~~ROBERT WILLIAM PAULKEE of Burwood, Wholesale Distributor, ROSS GORDON HALES of Dundas, Salesman, RONALD JAMES OLSSON of Wentworthville, Carrier, Carrier and EDWARD TRIMMER of Ermington, Storemen as joint tenants.~~

SECOND SCHEDULE

- GRY 1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
- EA 2. F168263¹ ~~Easement affecting the part of the land above described shown so burdened in Deposited Plan 588575.~~
- EB(SB) 3. G789629¹ ~~Easement for Batter affecting the part of the land above described shown so burdened in Deposited Plan 588575.~~
- EAZ 4. P966733¹ ~~Easement to Drain Water appurtenant to the land above described affecting the part of Lot 1 in Deposited Plan 217050 shown so burdened in Deposited Plan 586817 and the part of Lot 6 in Deposited Plan 232929 shown so burdened therein.~~

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

(Page 1) Vol. 13673 Fol. 248

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE REGISTRAR GENERAL'S OFFICE.

T1351496
T2854117
T210652N
537
X55318LT

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	REGISTERED	Signature of Registrar General
Robert William Fawkes, Ronald James Olson and Edward O. Dittmer as joint tenants by transfer 1351496, Robert William Fawkes, Edward O. Dittmer and Philip Bruce McNaughton as joint tenants by transfer 1351496, Robert William Fawkes, Edward O. Dittmer, Philip Bruce McNaughton and Neil L. Baxter Harrison as joint tenants by Notice of Death T510652, Transfer T510653, Registered 12-11-1982.				

SECOND SCHEDULE (continued)

PARTICULARS

INSTRUMENT NATURE	INSTRUMENT NUMBER	REGISTERED	Signature of Registrar General	CANCELLATION

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

Legal Liaison Services hereby certifies that the information contained in this document has been provided electronically by the Registrar General.

Information provided through Tri-Search an approved LPINSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

23/6/2015 8:19AM

FOLIO: 1/588575

First Title(s): SEE PRIOR TITLE(S)
 Prior Title(s): VOL 13673 FOL 248

Recorded	Number	Type of Instrument	C.T. Issue
28/3/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
10/5/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
26/5/1988	X533156	TRANSFER	EDITION 1
23/3/1989	DP787611	DEPOSITED PLAN	
12/3/1993	Z944756	REQUEST	
30/6/1993	I418157	APPLICATION	EDITION 2
4/3/1999	5650517	DEPARTMENTAL DEALING	
21/10/2014	AI940739	APPLICATION TO RECORD A NEW REGISTERED PROPRIETOR	EDITION 3
5/12/2014	AJ63550	APPLICATION TO RECORD A NEW REGISTERED PROPRIETOR	EDITION 4

*** END OF SEARCH ***

Ref:mg /Src:T

198555

STAMP DUTY



X533156



TRANSFER

REAL PROPERTY ACT, 1900

T A 1 of 2 X R/11
S 29

DESCRIPTION OF LAND

Note (a)

TRANSFEROR

Note (b)

ESTATE

Note (c)

TRANSFeree

Note (d)

CSH

TENANCY

Note (e)

PRIOR ENCUMBRANCES

Note (f)

EXECUTION

Note (g)

Torrens Title Reference	If Part Only, Delete Whole and Give Details	Location
VOLUME 5646 FOLIO 231	WHOLE	PARISH FIELD OF MARS COUNTY CUMBERLAND
VOLUME 13673 FOLIO 248 Now 158255	WHOLE	ERMINGTON
VOLUME 11880 FOLIO 121	WHOLE	PARISH FIELD OF MARS COUNTY CUMBERLAND
VOLUME 9744 FOLIO 127 Now 1509307	WHOLE	ERMINGTON

RONALD JAMES OLSSON, PHILIP BRUCE McNAUGHTON and NEIL BAXTER HARRISON

(the abovenamed TRANSFEROR) hereby acknowledges receipt of the consideration of \$ pursuant to Deed of Retirement and Appointment of New Trustees Registered Number 0040 Book 3734 and transfers an estate in fee simple to the TRANSFeree.

NEIL BAXTER HARRISON of 2 Cross Street Concord Manufacturer
 EDWARD BRUCE CRUTCHER of 4 Bramley Street Fairfield Engineer
 BRUCE DAVID HALES of 154 Murray Farm Road Beecroft Accountant
 JOHN LEE THOMPSON of 43 Ferris Street Ermington Optician
 BRUCE DONALDSON ALDERTON of 2 Hughes Avenue Ermington Sales Representative
 as joint tenants/tenants in common

OFFICE USE ONLY

OVER

subject to the following PRIOR ENCUMBRANCES 1. F168263 Easement as to C.T. VOL. 13673 FOL. 248 G789629 Easement for Batter
 2. as to C.T. VOL. 13673 FOL. 248 & C.T. VOL. 11880 P966733 Easement to Drain Water as to FOL. 121 C.T. VOL. 13673 FOL. 248

DATE 31st March 1988

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

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

R. W. THORNCROFT
Signature of Witness

R. W. THORNCROFT
Name of Witness (BLOCK LETTERS)

Keith Nelson Davis
Signature of Witness

29 ANTHONY ROAD DENISTONE N.S.W.
Address and occupation of Witness

R. J. Olsson
Signature of Transferor

P. B. McNaughton
Signature of Transferor

Neil Baxter Harrison
Signature of Transferor

COMPANY MANAGER

SALES REPRESENTATIVE

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

Isabelle Down
Signature of Witness

ISABELLE DOWEN
154 BURLINGTON ROAD
HOMEBUSH 2140
SECRETARY.
Name of Witness (BLOCK LETTERS)

Keith Nelson Davis
Signature of Witness

29 ANTHONY ROAD DENISTONE 2114
Address and occupation of Witness

Bruce David Hales
Signature of Transferee

John Lee Thompson
Signature of Transferee

Bruce Donaldson Alderton
Signature of Transferee

B. Crutcher
Signature of Transferee

TO BE COMPLETED BY LODGING PARTY

Notes (h) and (i)

LODGED BY		LOCATION OF DOCUMENTS	
KEITH N. DAVIS 29 ANTHONY ROAD DENISTONE 2114 PHONE: 8582451		CT	OTHER
Delivery Box Number		4CT	Herewith.
Checked	Passed		In L.T.O. with
Signed	Extra Fee		Produced by
REGISTERED -19		Secondary Directions	
26 MAY 1988		Delivery Directions	OVER

RBS
Rf

RB2 gr Manual registration complete. CT 11880-121 delivered 25/5/1988

INSTRUCTIONS FOR COMPLETION

This dealing should be marked by the Commissioner of Stamp Duties before lodgment by hand at the Land Titles Office.
 Typewriting and handwriting should be clear, legible and in permanent dense black or dark blue non-copying ink.
 Alterations are not to be made by erasure; the words rejected are to be ruled through and initialed by the parties to the dealing in the left hand margin.
 If the space provided is insufficient, additional sheets of the same size and quality of paper and having the same margins as this form should be used. Each additional sheet must be identified as an annexure and signed by the parties and the attesting witnesses.
 If it is intended to create easements, covenants, &c., use forms RP13A, RP13B, RP13C as appropriate.
 Rule up all blanks.

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

- (a) Description of land.
 - (i) TORRENS TITLE REFERENCE.—For a manual reference insert the Volume and Folio (e.g., Vol. 8514 Fol. 126)—For a computer folio insert the folio identifier (e.g., 12701924).
 - (ii) PART/WHOLE.—If part only of the land in the folio of the Register is being transferred, delete the word "WHOLE" and insert the lot and plan number, portion, &c. See also sections 327 and 327AA of the Local Government Act, 1919.
 - (iii) LOCATION.—Insert the locality shown on the Certificate of Title/Crown Grant, e.g., at Chullora. If the locality is not shown, insert the Parish and County, e.g., Ph, Lismore Co. Hous
- (b) Show the full name of the transferor(s).
- (c) If the estate being transferred is a lesser estate than an estate in fee simple, delete "fee simple" and insert appropriate estate.
- (d) Show the full name, address and occupation or description of the transferee(s).
- (e) Delete if only one transferee. If more than one transferee, delete either "joint tenants" or "tenants in common", and, if the transferees hold as tenants in common, state the shares in which they hold.
- (f) In the memorandum of prior encumbrances, state only the registered number of any mortgage, lease, charge or writ to which this dealing is subject.
- (g) Execution.
 - GENERALLY
 - (i) Should there be insufficient space for the execution of this dealing, use an annexure sheet.
 - (ii) The certificate of correctness under the Real Property Act, 1900, must be signed by all parties to the transfer, each party to execute the dealing in the presence of an adult witness, not being a party to the dealing, to whom he/she is personally known. The solicitor for the transferee may sign the certificate on behalf of the transferee, the solicitor's name (not that of his/her firm), to be typewritten or printed adjacent to the signature. Any person falsely or negligently certifying is liable to the penalties provided by section 117 of the Real Property Act, 1900.
 - ATTORNEY
 - (iii) If the transfer is executed by an attorney for the transferor/transferee pursuant to a registered power of attorney, the form of attestation must set out the full name of the attorney, and the form of execution must indicate the source of his/her authority, e.g., "AB by his attorney (or receiver or delegate, as the case may be) XY pursuant to power of attorney registered Book No."
 - AUTHORITY
 - (iv) If the transfer is executed pursuant to an authority (other than specified in (iii)), the form of execution must indicate the statutory, judicial or other authority pursuant to which the transfer has been executed.
 - CORPORATION
 - (v) If the transfer is executed by a corporation under seal, the form of execution should include a statement that the seal has been properly affixed, e.g., in accordance with the Articles of Association of the corporation. Each person attesting the affixing of the seal must state his/her position (e.g., director, secretary) in the corporation.
- (h) Insert the name, postal address, Document Exchange reference, telephone number, and delivery box number of the lodging party.
- (i) The lodging party is to complete the LOCATION OF DOCUMENTS panel. Place a tick in the appropriate box to indicate the whereabouts of the Certificate of Title. List, in an abbreviated form, other documents lodged, e.g., stat. dec. for statutory declaration, pbte for probate, L/A for letters of administration, &c.

OFFICE USE ONLY

L.O. 1341 

FIRST SCHEDULE DIRECTIONS

(A) FOLIO IDENTIFIER	(B) DIRECTION	(C) NAME
5646 - 331	} PROP	Hire via X 533167
1/588575		Neil Baxter Harrison, Edward Bruce Hamilton, Bruce David Hales, John Lee Thompson and Bruce Donaldson Alderton as joint tenants
1/509307		
11880 - 121		

SECOND SCHEDULE AND OTHER DIRECTIONS

(D) FOLIO IDENTIFIER	(E) DIRECTION	(F) NOTFN TYPE	(G) DEALING NUMBER	(H) DETAILS
11880 - 121 1/509307 1/588575	} 4Q			Keith N. Davis 29 Anahay Rd Bamstone 2114

RP81



B



I
418157 H

D

APPLICATION

REAL PROPERTY ACT, 1900

(See Instructions for Completion on back of form)

AP

	of	
\$		

DESCRIPTION OF LAND
Note (a)

Torrens Title reference	If Part Only, Delete Whole and Give Details	Location
VOL. 11880 FOL. 121 FOLIO IDENTIFIER 1/588575 FOLIO IDENTIFIER 1/509307	1/599372. WHOLE " "	Ermington Ermington Ermington

REGISTERED DEALING
Note (b)

Type of Dealing	Registered Number	Torrens Title Reference

PRESENT REGISTERED PROPRIETOR
Note (c)

NEIL BAXTER HARRISON, EDWARD BRUCE CRUTCHER, BRUCE DAVID HALES, JOHN LEE THOMPSON and BRUCE DONALDSON ALDERTON

Note (d)

is presently recorded as REGISTERED PROPRIETOR of the land above described. Application is hereby made to record ~~above mentioned registered dealing~~

NEW REGISTERED PROPRIETOR(S)
Note (e)

EDWARD BRUCE CRUTCHER of 4 Bramley Street Fairfield West, BRUCE DAVID HALES of 14 Clanalpine Street Eastwood, BRUCE DONALDSON ALDERTON of 2 Hughes Avenue Ermington, PHILIP BRUCE McNAUGHTON of 22 Chapman Avenue Beecroft and BENJAMIN HALES of 6 Linden Crescent Ermington

OFFICE USE ONLY

Note (d)

as REGISTERED PROPRIETOR of the land above described. as joint tenants ~~above mentioned registered dealing~~

Note (f)

Consequent upon the vesting in EDWARD BRUCE CRUTCHER, BRUCE DAVID HALES and BRUCE DONALDSON ALDERTON (as Continuing Trustees) and PHILIP BRUCE McNAUGHTON and BENJAMIN HALES (appointed by unanimous resolution of the Congregation on 5 June 1993 pursuant to Clause 7(4) of the Deed establishing the Ermington Gospel Trust ("the Trust") in place of NEIL BAXTER HARRISON and JOHN LEE THOMPSON who were removed as trustees of the Trust by unanimous resolution of the Congregation on 5 June 1993 pursuant to Clause 7(7) of the said Deed) of the land above described as trustees of the Ermington Gospel Trust. Registered No 361 Book 4022.

DATE 12 June 1993.

EXECUTION
Note (g)

I hereby certify this dealing to be correct for the purposes of the Real Property Act, 1900. Signed in my presence by the applicant who is personally known to me.

John William Gate
Signature of Witness

John William Gate
Name of Witness (BLOCK LETTERS)

25 Bruceville Ave Erina
Address and occupation of Witness
EDITOR

[Signature]
B Crutcher
Philip McNaughton
Bruce Alderton

Signature of Applicant

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

LODGED BY		LOCATION OF DOCUMENTS	
CT	OTHER		
X		Herewith.	
		In L.T.O. with	
		Produced by	
Checked	Passed	REGISTERED	- 19
Signed	Extra Fee	Secondary Directions	
		Delivery Directions	<i>Reganne C. Geal</i>

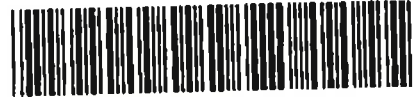
OFFICE USE ONLY

Ref:mg /Src:T

Form: 04RP
Licence: 08-05-902
Licensee: Softdocs
Coleman & Greig

APPLICATION TO RECORD NEW REGISTERED PROPRIETOR

New South Wales
Section 46C Real Property Act 1900
Section 12(4) Trustee Act 1925



AI940739U

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.



Office of State Revenue use only	NEW SOUTH WALES DUTY 01-10-2014 0007805679-001 SECTION 54(3) DUTY \$ *****50.00
----------------------------------	--



Folio Identifiers 1/588575, 7/399372, 1/509307, 2/509307 & 7/999972
--

(B) REGISTERED DEALING

Number	Torrens Title
--------	---------------

RELOADED
(C) LODGED BY

20 OCT 2014
10.40
TIME (D) APPLICANT

Document Collection Box 545D	Name, Address or DX, Telephone, and Customer Account Number if any LLPN: 123397E JOHN McLAREN & CO.	CODE RP
Reference (optional): OWN:DT:133769		

EDWARD BRUCE CRUTCHER, BRUCE DONALDSON ALDERTON, PHILIP BRUCE MCNAUGHTON, ROSS GORDON HALES, IAN PETER SHIRTLIFF, JOHN KENNETH ANDERSON & BENJAMIN HALES

(E) PRESENT REGISTERED PROPRIETOR

EDWARD BRUCE CRUTCHER, BRUCE DAVID HALES, BRUCE DONALDSON ALDERTON, PHILIP BRUCE MCNAUGHTON and BENJAMIN HALES

(F) NEW REGISTERED PROPRIETOR

EDWARD BRUCE CRUTCHER, BRUCE DONALDSON ALDERTON, PHILIP BRUCE MCNAUGHTON, ROSS GORDON HALES, IAN PETER SHIRTLIFF AND JOHN KENNETH ANDERSON

(G) COMPLETE FOR APPLICATION UNDER SECTION 46C REAL PROPERTY ACT 1900 *NOT APPLICABLE*

In regard to the above land, the applicant requests the Registrar General to record the new registered proprietor on the above folio of the Register, the land having vested in the new registered proprietor pursuant to -

(H) COMPLETE FOR APPLICATION UNDER SECTION 12(4) TRUSTEE ACT 1925

In regard to the above land, the applicant requests the Registrar General to record the new registered proprietor on the folio of the Register consequent on -
The retirement of Benjamin Hales and Bruce David Hales as two of the Trustees of the Ermington Gospel Trust, confirmation of the appointment of Ross Gordon Hales as a Trustee of the Trust and the appointment of Ian Peter Shirliff and John Kenneth Anderson as New Trustees of the Trust pursuant to Deed of Confirmation of Appointment dated 10th December 2003 and Deed of Confirmation of Retirement and appointment of Trustees dated 28th December 2013 No. 4675 Book 239

DATE 9/10/2014

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

Signature:

Signatory's name: OWEN NICOL
Capacity: Solicitor for the applicant

(J) This section is to be completed where a notice of sale is required and the relevant data has been forwarded through eNOS. The applicant's solicitor certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. Full Name: Signature:

20/10/14
ROBIN MARY LEHANE
JUSTICE OF THE PEACE
130737

EV 130041

Legal Liaison 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.

Information provided through Tri-Search an approved LPINSH/ Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 1/588575

SEARCH DATE	TIME	EDITION NO	DATE
23/6/2015	8:18 AM	4	5/12/2014

LAND

LOT 1 IN DEPOSITED PLAN 588575
 AT ERMINGTON
 LOCAL GOVERNMENT AREA PARRAMATTA
 PARISH OF FIELD OF MARS COUNTY OF CUMBERLAND
 TITLE DIAGRAM DP588575

FIRST SCHEDULE

RONALD STEPHEN DARTNALL
 BRUCE DONALDSON ALDERTON
 PHILIP BRUCE MCNAUGHTON
 ROSS GORDON HALES
 IAN PETER SHIRTLIFF
 JOHN KENNETH ANDERSON
 AS JOINT TENANTS

(RP AJ63550)

SECOND SCHEDULE (5 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 F168263 EASEMENT AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN SO BURDENED IN DP588575 Z944756 TRANSFER OF EASEMENT TO SYDNEY ELECTRICITY
- 3 G789629 EASEMENT FOR BATTER AFFECTING THE SITE DESIGNATED (S) IN THE TITLE DIAGRAM
- 4 P966733 EASEMENT TO DRAIN WATER APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE PART OF LOT 1 IN DP217050 SHOWN SO BURDENED IN DP586817 AND THE PART OF LOT 6 IN DP232929
- 5 DP787611 EASEMENT TO DRAIN WATER 1 WIDE AND VARIABLE WIDTH APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE LAND SHOWN SO BURDENED IN DP787611

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

mg

PRINTED ON 23/6/2015

APPENDIX D – Ground Water Works Database Search

NSW Office of Water

Work Summary

GW072314
Licence: 10BL155108

Licence Status: CANCELLED

Authorised Purpose(s): TEST BORE

Intended Purpose(s): IRRIGATION

Work Type: Bore

Work Status: Supply Obtained

Construct.Method: Rotary Air

Owner Type: Local Govt

Commenced Date:
Completion Date: 26/07/1994

Final Depth: 150.00 m

Drilled Depth: 150.00 m

Contractor Name: INTERTEC DRILLING SERVICES

Driller: Richard Auld

Assistant Driller:
Property: N/A NSW

GWMA: -
GW Zone: -

Standing Water Level (m):
Salinity Description:
Yield (L/s): 0.800

Site Details

Site Chosen By:

County	Parish	Cadastre
Form A: CUMBE	CUMBE.25	1//954186
Licensed: CUMBERLAND	HUNTERS HILL	Whole Lot 1//954186

Region: 10 - Sydney South Coast

CMA Map: 9130-3N

River Basin: 213 - SYDNEY COAST - GEORGES RIVER

Grid Zone:
Scale:
Area/District:
Elevation: 0.00 m (A.H.D.)

Elevation Source: Unknown

Northing: 6256534.0

Easting: 322576.0

Latitude: 33°48'59.5"S

Longitude: 151°04'58.8"E

GS Map: -

MGA Zone: 0

Coordinate Source: Unidentified Location

Construction

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

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	5.40	210			Rotary Air
1		Hole	Hole	5.40	72.00	156			Rotary Air
1		Hole	Hole	72.00	150.00	156			Rotary Air
1	1	Casing	Steel	-0.50	5.50	168	163		Driven into Hole, Welded

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
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36.90	37.30	0.40	Unknown			0.10	42.00		220.00
61.20	61.60	0.40	Unknown			0.10	66.00		300.00
118.00	123.50	5.50	Unknown			0.10	126.00		540.00
125.50	130.30	4.80	Unknown			0.30	132.00		490.00
135.60	138.20	2.60	Unknown			0.20	150.00		490.00

Geologists Log Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	1.00	1.00	TOP SOIL	Topsoil	
1.00	3.70	2.70	YELLOW MED GRAIN SANDSTONE	Sandstone	
3.70	4.10	0.40	GREY CLAY	Calcarenite	
4.10	8.50	4.40	YELLOW MED GRAIN SANDSTONE	Sandstone	
8.50	9.20	0.70	GREY CLAY	Clay	
9.20	15.90	6.70	GREY FINE GRAIN SANDSTONE CLAY MATRIX	Sandstone	
15.90	37.30	21.40	GREY MED GRAIN SANDSTONE	Sandstone	
37.30	52.80	15.50	GREY MEDIUM GRAIN SANDSTONE CLAY MATRIX	Sandstone	
52.80	61.20	8.40	GREY MED GRAIN SANDSTONE	Sandstone	
61.20	72.00	10.80	LIGHT GREY COARSE GRAIN SANDSTONE	Sandstone	
72.00	74.50	2.50	LIGHT GREY COARSE GRAIN SANDSTONE	Sandstone	
74.50	76.00	1.50	QUARTZ/SHALE CROSS BED	Quartz	
76.00	84.30	8.30	GREY MED GRAIN SANDSTONE WITH CLAY MATRIX	Sandstone	
84.30	118.00	33.70	GREY COARSE GRAIN CEMENTED SANDSTONE	Sandstone	
118.00	123.50	5.50	GREY COARSE GRAIN SANDSTONE WITH SMALL PEBBLE QUARTZ MATRIX	Sandstone	
123.50	125.50	2.00	DARK GREY MED GRAIN CEMENTED SANDSTONE	Sandstone	
125.50	130.30	4.80	LIGHT GREY COARSE GRAIN SANDSTONE WITH SMALL PEBBLE QUARTZ MATRIX	Sandstone	
130.30	135.60	5.30	DARK GREY SHALE CROSS BED	Shale	
135.60	138.20	2.60	LIGHT GREY COARSE GRAIN SANDSTONE WITH SMALL PEBBLE QUARTZ MATRIX	Sandstone	
138.20	150.00	11.80	GREY COARSE GRAIN CEMENTED SANDSTONE	Sandstone	

Remarks

12/09/2000: PREVIOUS LIC No: 10BL155108.

10/10/2011: Adjusted Inside, Outside Diameter and Thickness due to data entry errors with advice from Madhwan Keshwan. GDS Data Cleanup project 2011.

23/11/2012: Nat Carling, 23-Nov-2012; Added status & owner type (based on licence) & rock type codes to driller's log.

*** End of GW072314 ***

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

NSW Office of Water

Work Summary

GW109990
Licence: 10BL601324

Licence Status: ACTIVE

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

Work Type: Well

Work Status:
Construct.Method: Auger - Hollow Flight

Owner Type: Private

Commenced Date:
Completion Date: 21/07/2006

Final Depth: 12.00 m

Drilled Depth: 12.00 m

Contractor Name: Terratest Pty Ltd

Driller: Unkown Unknown

Assistant Driller:
Property: PATRICK LOGISTICS 39
 GRAND AVENUE CAMELLIA
 2142 NSW

Standing Water Level:
GWMA:
GW Zone:
Salinity:
Yield:

Site Details

Site Chosen By:

County	Parish	Cadastre
Form A: CUMBE Licensed:	CUMBE.48	I/2/I/539890

Region: 10 - Sydney South Coast

CMA Map:
River Basin: - Unknown
Area/District:
Grid Zone:
Scale:
Elevation: 0.00 m (A.H.D.)
Elevation Unknown
Source:
Northing: 6256046.0
Easting: 319060.0

Latitude: 33°49'13.2"S
Longitude: 151°02'41.7"E

GS Map: -

MGA Zone: 0

Coordinate Unknown
Source:

Construction

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

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	12.00	180			Auger - Hollow Flight

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
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Geologists Log

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	2.00	2.00	SANDSTONE CRUSHED,ROCK PIECES,AND BLUE METAL,BROWN SAND	Sandstone	
2.00	2.50	0.50	SAND,SILTY CLAYEY,GREY TO DARK GREY AND SATURATED	Sand	
2.50	3.00	0.50	LENSE OF PEATY SANDS	Leucitite	
3.00	3.50	0.50	CLAY SANDY,L/BROWN,MEDIUM GRAINED SANDS	Clay Loam	
3.50	7.80	4.30	LIGHT BROWN CLAYEY SAND,MINOR SHELL FRAGMENTS	Lignite	
7.80	9.00	1.20	SATURATED FINE GRAINED SANDS	Sand	
9.00	11.70	2.70	GREY SATURATED SAND,LIGHT GREY	Greenstone	
11.70	12.00	0.30	BLACK PEAT,NO ODOUR.	Basalt	

Remarks

*** End of GW109990 ***

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

NSW Office of Water

Work Summary

GW110173

Licence: 10BL602762

Licence Status: CANCELLED

Authorised Purpose(s): TEST BORE

Intended Purpose(s): RECREATION (GROUNDWATER)

Work Type: Bore

Work Status:

Construct.Method: Down Hole Hammer

Owner Type: Other Govt

Commenced Date:

Completion Date: 02/02/2009

Final Depth: 48.00 m

Drilled Depth:

Contractor Name: INTERTEC DRILLING SERVICES

Driller: William Crump

Assistant Driller:

Property: EASTWOOD PARK LAKESIDE ROAD EASTWOOD 2122 NSW

Standing Water Level: 5.500

GWMA:
GW Zone:

Salinity:
Yield: 2.800

Site Details

Site Chosen By:

County Form A: CUMBE
Licensed:

Parish: CUMBE.18

Cadastre: 1 167919

Region: 10 - Sydney South Coast

CMA Map:

River Basin: - Unknown

Grid Zone:

Scale:

Area/District:

Elevation: 0.00 m (A.H.D.)

Elevation: Unknown

Source:

Northing: 6259586.0

Easting: 322335.0

Latitude: 33°47'20.3"S

Longitude: 151°04'51.6"E

GS Map: -

MGA Zone: 0

Coordinate Source: Unknown

Construction

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

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	2.50	219			Down Hole Hammer
1		Hole	Hole	2.50	4.80	165			Down Hole Hammer
1	1	Casing	Steel	-0.40	2.60	165			Driven into Hole
1	1	Casing	Pvc Class 9	0.40	38.60	140			Suspended in Clamps, Screwed and Glued

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
25.50	26.00	0.50	Unknown			0.60			1800.00

37.10	37.40	0.30	Unknown	5.50	2.80	2700.00
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Geologists Log Drillers Log

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

17/06/2009: Previous Lic No:10BL602762

***** End of GW110173 *****

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

NSW Office of Water

Work Summary

GW200688

Licence: 20BL170896

Licence Status: ACTIVE

Authorised Purpose(s): DOMESTIC

Intended Purpose(s): DOMESTIC

Intended Purpose(s): DOMESTIC

Work Type: Spear

Work Status:

Construct.Method:

Owner Type: Private

Commenced Date:

Completion Date: 09/01/2007

Final Depth:

Drilled Depth:

Contractor Name:

Driller: Jarrod Ronald Bright

Assistant Driller:

Property: NA UNIT 1 301 BLACKWALL
ROAD BALCKWALL 2256

Standing Water Level:

GWMA:
GW Zone:

Salinity:
Yield:

Site Details

Site Chosen By:

County
Form A: CUMBE
Licensed:

Parish
CUMBE.18

Cadastre
1//36625

Region: 20 - Hunter

CMA Map:

River Basin: - Unknown
Area/District:

Grid Zone:

Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Unknown
Source:

Northing: 6258318.0
Easting: 319678.0

Latitude: 33°47'59.9"S
Longitude: 151°03'07.4"E

GS Map: -

MGA Zone: 0

Coordinate Map Interpretation
Source:

Construction

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

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)

Geologists Log

Drillers Log

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

Remarks

***** End of GW200688 *****

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

APPENDIX E – Section 149 Certificate



PLANNING CERTIFICATE

CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979 as amended

Legal Liaison Services
DX 1019
SYDNEY

Certificate No: 2015/3041
Fee: \$133.00
Issue Date: 23 June 2015
Receipt No: 4426383
Applicant Ref: P17421-LL/DLA-DL3560

DESCRIPTION OF LAND

Address: 15 Hughes Avenue
ERMINGTON NSW 2115
Lot Details: Lot 1 DP 588575

SECTION A

The following Environmental Planning Instrument to which this certificate relates applies to the land:

Parramatta Local Environmental Plan 2011

For the purpose of **Section 149(2)** it is advised that as the date of this certificate the abovementioned land is affected by the matters referred to as follows:



The land is zoned: **SP1 Special Activities PLEP2011**

Issued pursuant to Section 149 of the Environmental Planning and Assessment Act, 1979.

NOTE: This table is an excerpt from Parramatta Local Environmental Plan 2011 and must be read in conjunction with and subject to the other provisions of that instrument, and in force at that date.

1 Objectives of zone

- To provide for special land uses that are not provided for in other zones.
- To provide for sites with special natural characteristics that are not provided for in other zones.
- To facilitate development that is in keeping with the special characteristics of the site or its existing or intended special use, and that minimises any adverse impacts on surrounding land.

2 Permitted without consent

Nil

3 Permitted with consent

The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose

4 Prohibited

Any development not specified in item 2 or 3

The land is zoned: **IN1 General Industrial PLEP2011**

Issued pursuant to Section 149 of the Environmental Planning and Assessment Act, 1979.

NOTE: This table is an excerpt from Parramatta Local Environmental Plan 2011 and must be read in conjunction with and subject to the other provisions of that instrument, and in force at that date.

1 Objectives of zone

- To provide a wide range of industrial and warehouse land uses.
- To encourage employment opportunities.
- To minimise any adverse effect of industry on other land uses.
- To support and protect industrial land for industrial uses.
- To facilitate a range of non-industrial land uses that serve the needs of workers and visitors.

2 Permitted without consent

Nil

3 Permitted with consent

Building identification signs; Business identification signs; Depots; Food and drink premises; Freight transport facilities; Garden centres; General industries; Hardware and building supplies; Horticulture; Industrial training facilities; Kiosks; Landscaping material supplies; Light industries; Liquid fuel depots; Neighbourhood shops; Plant nurseries; Roads; Rural supplies; Timber yards; Vehicle sales or hire premises; Warehouse or distribution centres; Any other development not specified in item 2 or

4



4 Prohibited

Agriculture; Air transport facilities; Airstrips; Amusement centres; Boat launching ramps; Boat sheds; Camping grounds; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Community facilities; Crematoria; Eco-tourist facilities; Educational establishments; Entertainment facilities; Exhibition homes; Exhibition villages; Farm buildings; Forestry; Function centres; Heavy industrial storage establishments; Helipads; Highway service centres; Home-based child care; Home businesses; Home occupations; Home occupations (sex services); Industries; Information and education facilities; Jetties; Marinas; Mooring pens; Moorings; Open cut mining; Port facilities; Recreation facilities (major); Registered clubs; Residential accommodation; Rural industries; Signage; Tourist and visitor accommodation; Water recreation structures; Water supply systems; Wharf or boating facilities

SECTION B

State Policies and Regional Environmental Plans

The land is affected by State Environmental Planning Policies and Regional Environmental Plans as detailed in Annexure "B1".

Draft Local Environmental Plan

The land is not affected by a Draft Local Environmental Plan which has been placed on Public Exhibition and has not yet been published.

Development Control Plan

The land is affected by Parramatta Development Control Plan 2011.

The Minister for Planning has issued directions that provisions of an EPI do not apply to certain Part 4 development where a concept plan has been approved under Part 3A.

Development Contribution Plan

The Parramatta Section 94A Development Contributions Plan applies to the land.

Heritage Item/Heritage Conservation Area

An item of environmental heritage is not situated on the land.

The land is not located in a heritage conservation area.

Road Widening

The land is not affected by road widening or road realignment under:

- (a) Division 2 of Part 3 of the Roads Act 1993.
- (b) Any Environmental Planning Instrument.
- (c) Any Resolution of Council.

Land Reservation Acquisition

The land is not affected by Land Reservation Acquisition in Parramatta Local Environmental Plan 2011.

**Site Compatibility Certificate** (Seniors Housing, Infrastructure and Affordable Rental Housing)

At the date of issue of this certificate Council is not aware of any

- a. Site compatibility certificate (affordable rental housing),
- b. Site compatibility certificate (infrastructure),
- c. Site compatibility certificate (seniors housing)

in respect to the land issued pursuant to the Environmental Planning & Assessment Amendment (Site Compatibility Certificates) Regulation 2009 (NSW).

Contamination

The land is not affected by any of the matters contained in Clause 59(2) as amended in the Contaminated Land Management Act 1997 – as listed

- a. that the land to which the certificate relates is significantly contaminated land
- b. that the land to which the certificate relates is subject to a management order
- c. that the land to which the certificate relates is the subject of an approved voluntary management proposal
- d. that the land to which the certificate relates is subject to an ongoing maintenance order
- e. that the land to which the certificate relates is the subject of a site audit statement

Tree Preservation

The land is subject to Section 5.4 Preservation of Trees or Vegetation in Parramatta Development Control Plan 2011.

Council has not been notified of an order under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land.

Coastal Protection

The land is not affected by Section 38 or 39 of the Coastal Protection Act 1979.

Has an order been made under Part 4D of the Coastal Protection Act 1979 in relation to temporary coastal protection works (within the meaning of the Act) on the land (or on public land adjacent to that land)?

NO

Has Council been notified under section 55x of the Coastal Protection Act 1979 that temporary coastal protection works (within the meaning of the Act) have been placed on the land (or on public land adjacent to that land)?

NO

Has the owner (or any previous owner) of the land been consented in writing to the land being subject to annual charges under section 496B of the Local Government Act 1993 for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act)?

NO



Council Policy

Council has not adopted a policy to restrict the development of the land by reason of the likelihood of projected sea level rise (coastal protection), tidal inundation, subsidence or any other risk.

Council has adopted a policy covering the entire City of Parramatta to restrict development of any land by reason of the likelihood of flooding.

Council has adopted by resolution a policy on contaminated land that applies to all land within the City of Parramatta. The Policy will restrict the development of the land if the circumstances set out in the policy prevail. A copy of the policy is available on Councils website at www.parracity.nsw.gov.au or from the Customer Service Centre.

Mine Subsidence

The land is not affected by Section 15 of the Mine Subsidence Compensation Act 1961 proclaiming land to be a Mine Subsidence District.

Bushfire Land

The land is not bushfire prone land.

Threatened Species

The Director General with responsibility for the Threatened Species Conservation Act 1995 has not advised Council that the land includes or comprises a critical habitat.

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008

**This does not constitute a Complying Development Certificate under section 85 of the
EP&A Act**

This information only addresses matters raised in **Clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1)(c3) and 1.19** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

It is your responsibility to ensure that you comply with the general requirements of the State Environmental Planning Policy (Exempt and Complying Codes) 2008. Failure to comply with these provisions may mean that a Complying Development Certificate issued under the provisions of State Environmental Planning Policy (Exempt and Complying Codes) 2008 is invalid.

General Housing Code

Complying Development pursuant to the General Housing Code **may** be carried out on the land under **Clause 1.17A (1) (c) to (e), (2), (3) and (4) and Clause 1.18 (1)(c3)** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Complying Development pursuant to the General Housing Code **may** be carried out on the land under **Clause 1.19** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.



Rural Housing Code

Complying Development pursuant to the Rural Housing Code **may** be carried out on the land under **Clause 1.17A (1) (c) to (e), (2), (3) and (4) and Clause 1.18 (1)(c3)** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Complying Development pursuant to the Rural Housing Code **may** be carried out on the land under **Clause 1.19** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Housing Alterations Code

Complying Development pursuant to the Housing Alterations Code **may** be carried out on the land under **Clause 1.17A (1) (c) to (e), (2), (3) and (4) and Clause 1.18 (1)(c3)** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Complying Development pursuant to the Housing Alterations Code **may** be carried out on the land under **Clause 1.19** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

General Development Code

Complying Development pursuant to the General Development Code **may** be carried out on the land under **Clause 1.17A (1) (c) to (e), (2), (3) and (4) and Clause 1.18 (1) (c3)** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Complying Development pursuant to the General Development Code **may** be carried out on the land under **Clause 1.19** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Demolition Code

Complying Development pursuant to the Demolition Code **may** be carried out on the land under **Clause 1.17A (1) (c) to (e), (2), (3) and (4) and Clause 1.18 (1)(c3)** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Complying Development pursuant to the Demolition Code **may** be carried out on the land under **Clause 1.19** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Commercial and Industrial (New Buildings and Additions) Code

Complying Development pursuant to the Commercial and Industrial (New Buildings and Additions) Code **may** be carried out on the land under **Clause 1.17A (1) (c) to (e), (2), (3) and (4) and Clause 1.18 (1)(c3)** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Complying Development pursuant to the Commercial and Industrial (New Buildings and Additions) Code **may** be carried out on the land under **Clause 1.19** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

**General Commercial and Industrial (Alterations) Code**

Complying Development pursuant to the General Commercial and Industrial (Alterations) Code **may** be carried out on the land under **Clause 1.17A (1) (c) to (e), (2), (3) and (4) and Clause 1.18 (1)(c3)** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Complying Development pursuant to the General Commercial and Industrial (Alterations) Code **may** be carried out on the land under **Clause 1.19** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Subdivision Code

Complying Development pursuant to the Subdivision Code **may** be carried out on the land under **Clause 1.17A (1) (c) to (e), (2), (3) and (4) and Clause 1.18 (1)(c3)** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Complying Development pursuant to the Subdivision Code **may** be carried out on the land under **Clause 1.19** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Fire Safety Code

Complying Development pursuant to the Fire Safety Code **may** be carried out on the land under **Clause 1.17A (1) (c) to (e), (2), (3) and (4) and Clause 1.18 (1)(c3)** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Complying Development pursuant to the Fire Safety Code **may** be carried out on the land under **Clause 1.19** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

SPECIAL NOTES

The land is identified as Class 5 on the Acid Sulfate Soils map. Refer to Clause 6.1 of Parramatta Local Environmental Plan 2011.

Applicants for Sections 149 Certificates are advised that Council does not hold sufficient information to fully detail the effect of any encumbrances on the title of the subject land. The information available to Council is provided on the basis that neither Council nor its servants hold out advice or warrant to you in any way its accuracy, nor shall Council or its servants, be liable for any negligence in the preparation of that information. Further information should be sought from relevant Statutory Departments.



SECTION C

The following additional information is issued under Section 149(5)

Pursuant to S149(5) the Council supplies information as set out below on the basis that the Council takes no responsibility for the accuracy of the information. The information if material should be independently checked by the applicant.

Aboriginal Heritage – low sensitivity – limited potential to contain items of Aboriginal heritage. Contact Council's Customer Service/Duty Planner (02) 9806 5050 for more information.

The land is considered by Council TO BE ABOVE the 1 in 100 year mainstream flood level.

This information is based on data available to the Council. It is provided on the basis that neither Council nor its servants hold out advice or warrant to you in any way its accuracy, nor shall the Council or its servants, be liable for any negligence in the preparation of that information.

ANNEXURE "B1"

Issued pursuant to Section 149 of the Environmental Planning and Assessment Act 1979. Note: The following information is supplied in respect of Section 149 and embodies the requirements of Department of Planning Circular No. A2 dated 17 March 1989 and the Ministerial Notification dated 15 December 1986.

STATE ENVIRONMENTAL PLANNING POLICY NO.1 - Development Standards

STATE ENVIRONMENTAL PLANNING POLICY NO.19 - Bushland in Urban Areas

STATE ENVIRONMENTAL PLANNING POLICY NO.21 – Caravan Parks

STATE ENVIRONMENTAL PLANNING POLICY NO.32 - Urban Consolidation (Redevelopment of Urban Land)

STATE ENVIRONMENTAL PLANNING POLICY NO.33 - Hazardous and Offensive Development

STATE ENVIRONMENTAL PLANNING POLICY NO.55 - Remediation of Land

STATE ENVIRONMENTAL PLANNING POLICY NO.64 - Advertising and Signage

STATE ENVIRONMENTAL PLANNING POLICY NO.65 – Design Quality of Residential Flat Development.

STATE ENVIRONMENTAL PLANNING POLICY NO.70 – Affordable Housing (Revised Schemes)

STATE ENVIRONMENTAL PLANNING POLICY – (Housing for Seniors or People with a Disability) 2004

STATE ENVIRONMENTAL PLANNING POLICY – (Building Sustainability Index: BASIX) 2004

STATE ENVIRONMENTAL PLANNING POLICY – (Major Development) 2005

STATE ENVIRONMENTAL PLANNING POLICY – (Mining, Petroleum Production and Extractive Industries) 2007

STATE ENVIRONMENTAL PLANNING POLICY – (Temporary Structures) 2007



STATE ENVIRONMENTAL PLANNING POLICY (Infrastructure) 2007

STATE ENVIRONMENTAL PLANNING POLICY (Exempt and Complying Development Codes) 2008

STATE ENVIRONMENTAL PLANNING POLICY (Affordable Rental Housing) 2009

SYDNEY REGIONAL ENVIRONMENTAL PLAN NO.9 (No.2) - Extractive Industries

SYDNEY REGIONAL ENVIRONMENTAL PLAN NO.24 - Homebush Bay Area

SYDNEY REGIONAL ENVIRONMENTAL PLAN – (Sydney Harbour Catchment) 2005

N.B. All enquiries as to the application of Draft, State and Regional Environmental Planning Policies should be directed to The Department of Planning and Infrastructure – 23-33 Bridge Street Sydney NSW 2000.

Greg Dyer
Chief Executive Officer

per

A handwritten signature in black ink, appearing to read 'M. Dyer', with a long horizontal line extending to the right.

dated 23 June 2015

APPENDIX F – WorkCover Dangerous Goods Search.



WorkCover

Our Ref: D15/102198
Your Ref: Josh Crawford

WorkCover NSW
92-100 Donnison Street, Gosford, NSW 2250
Locked Bag 2906, Lisarow, NSW 2252
T 02 4321 5000 F 02 4325 4145
Customer Service Centre 13 10 50
DX 731 Sydney workcover.nsw.gov.au

29 June 2015

Attention: Josh Crawford
DLA Environmental Services
Unit 3
38 Leighton Pl
Hornsby NSW 2077

Dear Mr Crawford,

RE SITE: 15-19 Hughes Ave & 655-657 Victoria Rd Ermington NSW

I refer to your site search request received by WorkCover NSW on 24 June 2015 requesting information on licences to keep dangerous goods for the above site.

A search of the Stored Chemical Information Database (SCID) and the microfiche records held by WorkCover NSW has not located any records pertaining to the above mentioned premises.

If you have any further queries please contact the Dangerous Goods Licensing Team on (02) 4321 5500.

Yours Sincerely


Brent Jones
Senior Licensing Officer
Dangerous Goods Team