DLA Environmental Services

Soil Supplemented Preliminary Site Investigation

161 Tallawong Road
Rouse Hill
New South Wales 2155

ARCInnovationz

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ABBREVIATIONS

A list of the common abbreviations used throughout environmental reports is provided below:

ACM	Asbestos Containing Material
AEC	Area of Environmental Concern
BTEX	Benzene, Toluene, Ethyl Benzene, Xylene
COPC	Contaminant of Potential Concern
DLA	DLA Environmental Services
DP	Deposited Plan
DQI	Data Quality Indicator
DQO	Data Quality Objective
DSI	Detailed Site Investigation
EIL	Ecological Investigation Level
EPA	Environment Protection Authority (NSW)
ESL	Ecological Screening Level
HIL	Health-Based Investigation Level
HSL	Health Screening Level
LOR	Limit of Reporting
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NSW	New South Wales
PSI	Preliminary Site Investigation
QA/QC	Quality Assurance and Quality Control
RAP	Remedial Action Plan
RPD	Relative Percentage Difference
SEPP	State Environmental Planning Policy

EXECUTIVE SUMMARY

The objectives of this Preliminary Site Investigation (PSI) were to assess, from a contamination perspective, the suitability of the site for redevelopment.

The subject site is located at 161 Tallawong Road, Rouse Hill, NSW, 2155 (the Site) and at the time of the assessment was a rural residential property proposed to be redeveloped into a primary school. This development scenario is consistent with the definition of *Health Investigation Level A – Residential with Garden/Accessible Soil* land use provided by the National Environment Protection Council (NEPC) in Table 1A(1) of the NEPM 2013 Guidelines.

A review of Site history indicates probable agricultural land use until the 1970's, after which it appears to have been used as a rural/residential property.

Four areas of potential environmental concern (AECs) were identified, mainly associated with the fill around the residential dwelling and dam. As the residence was constructed between 1965 and 1975, the potential presence of asbestos should be considered during demolition.

Soil sampling was conducted in six locations, based on the AECs. These samples were tested for contaminants of potential concern (COPC) identified from past land use and those generally associated with fill materials. No exceedances of the adopted assessment criteria were reported.

Surface water from the on-Site dam was tested for suitability to be applied to land, or for discharge off Site, based on the *Australia and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC, 2000) and *Managing Urban Stormwater – Harvesting and Reuse* (NSW DEC 2006) guidelines. Exceedances were reported for faecal coliforms and total nitrogen when compared against the discharge criteria. Exceedances of faecal coliforms were detected when compared against the irrigation (apply to land) criteria. This does not affect suitability for the intended land use.

Based on a review of the available desktop search data, observations made during the Site walkover and supplementary sampling, DLA consider that there is a low likelihood of unacceptable contamination to be present on the Site as a result of past and present land use activities.

Recommendations for the Site include:

- Based on the surface water results, it is recommended that the water be chemically treated prior to discharge, or applied to land ensuring no run-off leaves the Site. Development of a

dewatering plan may be considered prior to discharge, to fully plan and manage the removal of water from the dam while ensuring minimal risk to humans and the environment.

- A hazardous materials survey may be conducted on the residential dwelling prior to demolition, in order to fully manage any potential risks to human health and the environment such as asbestos or polychlorinated bi-phenyls (PCBs).

- Any unexpected finds of stained or odorous material uncovered during demolition/development should be inspected by a contaminated land professional.

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1.0 INTRODUCTION

1.1 General

DLA Environmental Services (DLA) was commissioned by ARCInnovations (the Client) to complete a Preliminary Site Investigation (PSI) of the following property:

161 Tallawong Road, Rouse Hill, NSW, 2155
(the Site)

This PSI Report provides an appraisal of past and present potentially contaminating activities, including the environmental condition of the Site from supplemented soil testing, potential contamination types and the need for further investigation. The report has been prepared utilising information obtained as part of the assessment process and from experience, knowledge, and current industry practice in the investigation of similar sites.

1.2 Development Controls

It is proposed the Site be redeveloped into a primary school. This development scenario is consistent with the definition of *Health Investigation Level A – Residential with Garden/Accessible Soil* land use provided by the National Environment Protection Council (NEPC) in Table 1A(1) of the NEPM 2013 Guidelines. This criteria has been adopted as it is the most sensitive and applicable to the proposed future land use.

1.3 Objectives

The objectives of this PSI are to assess the likelihood of contamination to be present on the Site as a result of past and present land use activities, and to provide preliminary recommendations on further contamination assessment, management or remediation works (if required).

In particular, this PSI provides preliminary conclusions regarding the suitability of the Site for future land use consistent with *Residential A* in the National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No.1) ('NEPM', NEPC, 2013).

1.4 Scope of Works

DLA carried out the following works:

- Desktop review including historical records and aerial photography;
- Reviewing the environmental conditions of the Site including geology and hydrogeology;
- Comprehensive inspection of the Site;
- Limited soil sampling;
- Providing an overview of the Site's past and current land uses, potential contamination issues and potential Areas of Environmental Concern (AEC); and
- Provide a preliminary assessment of site contamination (if any) and discuss the need for further assessment, management or remediation works.

2.0 SITE DESCRIPTION

2.1 Site Identification

The Site identification details are summarised in the table below:

Table 1: Site Identification Summary

ITEMS	DETAILS
Site Name	161 Tallawong Road
Address	161 Tallawong Road, Rouse Hill, NSW 2155
Local Government Authority	Blacktown Council
Lot and Deposited Plan	Lot 43 DP 30186
Site Zoning	RU4 – Primary Production Small Lots
Current Use	Rural / residential
Proposed Redevelopment	Primary school
Site Area (approx.)	22,000 m^2 (2.2 ha)
Locality Map	Refer to **Figure 1** – Site Location

2.2 Proposed Development

Based on the information provided, it is understood that a primary school is proposed to be developed across the current Site and the neighbouring property (151 Tallawong Road – Lot 42 DP 30186). This development scenario is consistent with the definition of 'Residential with opportunity for garden/soil access' provided in Schedule B7 of the NEPM (NEPC, 2013).

2.3 Boundaries and Surrounding Land Use

The boundary and surrounding landscape features of the Site are summarised in the table below:

Table 2: Boundaries and Surround Land Use

DIRECTION	DETAILS
North	Rural residential lot
East	Tallawong Road with residential property immediately opposite
South	151 Tallawong Road - included in development plan

West	Large rural residential lot (25ha)

2.4 Site Geology and Soils

The Soil Landscape Map of Penrith (Soil Landscape Series Sheet 9030, Scale 1:100,000, 1989) indicated that the majority of the landscape at the Site is likely to belong to the Blacktown landscape area. This landscape is characterised by gently undulating rises on the Wianamatta Group shales.

Soils are generally shallow to moderately deep (<100cm) hard setting mottled texture contrasting soils, red and brown podzolic soils on lower slopes and in drainage lines. Limitations include moderately reactive highly plastic subsoil, low soil fertility and poor soil drainage.

2.5 Site Topography

The Site is relatively flat, gently sloping from east to west. Surface water drainage is expected to follow the natural contours toward the dam shared with the property to the south. Dam overflow is expected to drain towards First Pond Creek, approximately 500m west of the Site.

2.6 Acid Sulphate Soils

A search of the NSW Natural Resource Atlas did not identify acid sulphate soils to be present within the boundary of the Site, or surrounding land.

2.7 Salinity and Aggressivity of Soils

The Salinity Potential in Western Sydney map indicates the Site and the Rouse Hill area generally is within a region of moderate salinity potential with high and known salinity potential also indicated in the vicinity of water courses and drainage lines.

2.8 Hydrology and Hydrogeology

2.8.1 Hydrology

Approximately 95% of the Site is unsealed and situated on permeable soils. As such, rainfall is expected to infiltrate the unsealed surfaces of the Site. Excess rainfall and that falling on the sealed surface is expected to flow along natural drainage contours on Site and into the dam on the southern boundary.

2.8.2 Registered Groundwater Wells

A search of the Department of Natural Resources groundwater database was performed to identify wells in the vicinity of the Site. The search results identified one registered groundwater monitoring well located within 1km of the Site, the information of which is presented below:

Table 3: Regional Groundwater Summary Data

WELL ID	DISTANCE FROM SITE (m)	PURPOSE	DEPTH (m)	STANDING WATER LEVEL (m)	SALINITY (µS/cm)
GW108452	NE – 800	Stock/domestic	60	12.0	No Data

Refer to **Appendix 1** – Groundwater Works Database Search.

3.0 SITE HISTORY

3.1 Section 149 Certificate

A Planning Certificate from Blacktown Council under Section 149 of *the Environmental Planning and Assessment Act 1979* (NSW) was obtained for all lots at the Site, stating:

- The zoning and land use provisions of "Zone R2 – Low Density Residential" under the State Environmental Planning Policy (Sydney Region Growth Centres) 2006 apply to this land;
- The land does not include or comprise critical habitat and is not located in a Conservation Area;
- The Site does not contain Aboriginal archaeological sites under the protection of the *National Parks and Wildlife Service Act 1974 (*NSW);
- The Site is affected by a road pattern;
- Council has adopted a Contaminated Lands Policy and an Asbestos Policy which may restrict development on the subject land;
- The land is not affected by the operation Sections 38 or 39 of the *Coastal Protection Act 1979* (NSW);
- The land has not been proclaimed to be within a mine subsidence district; and
- The land is not located within an area that is bush fire prone land as defined by the *Environmental Planning and Assessment Act 1979* (NSW);

Refer to **Appendix 2** – Section 149 Certificate.

3.2 Historical Title Search

Title search results from 1901 to 2017 were reviewed by DLA with relevant observations being summarised below:

Table 4: Historical Title Search

YEAR	SITE OWNER	LAND USE / OCCUPATION
1901 - 1971	Edwin Stephen Rouse	Esquire
1948- 1971	Tina Beatrice Terry	Married woman
1956- 1971	Roderick Buchanan Rouse Terry Edwin Terence Terry Gerald George Terry (Trustees)	Farmers
1971- 1990	Gerhard Richard Moellmer Erika Moellmer	Toolmaker Married woman

1990-2006	Gerhard Richard Moellmer	Toolmaker
2006-2014	Harold Richard Moellmer (Executor if the Estate of Gerhard Richard Moellmer)	Toolmaker
2014-date	Sikh Grammar School Australia	Educational Institution

Refer to **Appendix 3** – Historical Title Search.

3.3 Aerial Photograph Review

Aerial photographs from 1947 to 2016 available from the NSW Lands Department, were reviewed by DLA with relevant observations being summarised below:

Table 5: Aerial Photograph Review

YEAR	DETAILS
1947	Site is undeveloped with tree cover.
1965	Site has been cleared with a dam in the middle of the southern boundary, extending into the neighbouring property. A creek line/gully is visible extending to the dam from the eastern boundary. Agricultural practices are visible in the form of an orchard within the northeast portion of the Site.
1975	Site appears largely unchanged from 1965, however the orchard is no longer visible. The creek line is less apparent, suggesting potential fill.
1994	Since 1975 a residential dwelling appears to have been developed in the northeast portion of the Site.
1998	Site appears unchanged since 1994.
2009	Site appears unchanged since 1998.
2016	An area of hardstand driveway is visible to the east of the dwelling. A section of potential fill material is noticeable extending south from the driveway. The rest of the Site appears unchanged since 2009.

Refer to **Appendix 4** – Aerial Photographs.

3.4 WorkCover Dangerous Goods Search

A WorkCover NSW search regarding the Site within their Stored Chemical Information Database indicated that Dangerous Goods Licenses have not been held for the premises.

Refer to **Appendix 5** – Dangerous Goods Search.

3.5 Contaminated Land Record Search

A search was conducted of all 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.

3.6 Site History Summary

Salient aspects of the historical summary include:

- The Site appears to have been used for agricultural purposes until the 1970s, after which it was owned by toolmakers;
- Based on the age of the residential dwelling (1965-1975), asbestos may have been used in construction;
- Construction of the dam and driveway suggests potential areas of uncontrolled fill.

4.0 SITE INSPECTION

A Site walkover was undertaken by DLA on 7 March 2017. The purpose of the inspection was to make observations of the Site and adjacent site land uses relevant to the assessment of land contamination.

Relevant findings of the Site inspection are presented on **Figure 2** – Site Layout and Sampling Locations

4.1 Site Features and Site Processes

At the time of the inspection the Site was occupied by a northeast facing single-storey brick veneer residential property with a tiled roof. The dwelling was suspected to be constructed with asbestos containing materials however this was not confirmed during the inspection.

Site vegetation consisted of overgrown grass/weed cover. A hard stand area comprised of recycled aggregate used for parking vehicles was located at the front of the dwelling and an area of compacted orange clays was located further south.

The Site slopes to the southwest with a natural creek line flowing through the Site. A dam is located in the middle of the property spanning 161 and the neighbouring 151 Tallawong Road. The dam appeared free of surface scums and odours with water appearing generally clear with an estimated depth of two metres in the middle of the dam. The fringes of the dam contained minimal plant life. Stockpiles surrounding the dam were observed and were suspected to be remnant from historical dam excavations.

4.2 Wastes, Chemical Storage and Spillage

There was no visual evidence of wastes being dumped on the Site. The storage of chemical and visible spillages were also not observed during the Site walkover.

4.3 Underground and Aboveground Storage Tanks

There was no visual evidence of underground storage tanks (e.g. fill points, dip points, breather lines) or above ground storage tanks observed during the Site walkover.

4.4 Uncontrolled Fill

There was visual evidence to suggest the presence of potential filling material on the Site, based on the observations of a flat parking area with recycled aggregate and exposed compacted clays in front

of the dwelling. Stockpiles of potential fill were observed within the vicinity of the dam. The potential for localised or minor filling elsewhere on the Site cannot be precluded.

4.5 Odours and Staining

There was no olfactory or visual evidence of impacts on the Site.

4.6 Asbestos

There was no visual evidence of potential asbestos containing materials (ACM) observed on the surface of the Site. The on-site residential property was suspected to be constructed with ACM. A hazardous building materials survey was not within the scope of this investigation.

4.7 Phytotoxicity

There was no visual evidence of phytotoxic impact (i.e. plant stress or dieback) observed on the Site. Vegetation on adjoining properties also appeared healthy.

5.0 CONTAMINANTS OF POTENTIAL CONCERN AND AREAS OF ENVIRONMENTAL CONCERN

Based on the results of the desktop review and the Site walkover, DLA have identified AEC and Contaminants of Potential Concern (COPC) for the Site. These AEC and COPC are presented in the table below and AEC are also presented graphically in **Figure 3** – AECs.

Table 6: COPCs and AECs

ID	AEC DESCRIPTOR	ACTIVITY OF CONCERN	CONTAMINANTS OF POTENTIAL CONCERN
AEC1	Residential dwellings	Demolition and uncontrolled filling	TRH, PAHs, BTEX, metals, pesticides, PCB and asbestos
AEC2	Fill area next to driveway	Uncontrolled filling	TRH, PAHs, BTEX, metals, pesticides, PCB and asbestos
AEC3	Stockpiled material near dam	Uncontrolled filling	TRH, PAHs, BTEX, metals, pesticides, PCB and asbestos
AEC4	Water within the on-Site dam	Potential runoff	Metals, TSS, Faecal coliforms, Total Phosphorus, Total Nitrogen

6.0 ENVIRONMENTAL ASSESSMENT METHODOLOGY

6.1 Field Investigation and Sampling

6.1.1 Sampling Rationale

A limited program of soil sampling was undertaken within each identified AEC**.** A total of 6 shallow surface soil samples and one surface water sample were collected and analysed for the COPC identified in **Section 5.0**. A description of the sample locations is presented in **Table 8**.

Table 7: Sampling Rationale

AEC1	
S1	Area around residential dwelling
S2	Area around residential dwelling
S3	Area around residential dwelling
AEC2	
F1	Fill area next to driveway
F2	Fill area next to driveway
AEC3	
S4	Fill near dam
AEC4	
W1	Dam surface water

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

6.1.2 Soil Sampling Strategy

Samples were obtained using a decontaminated trowel and immediately transferred to sample containers of appropriate composition (glass jars for chemical analysis, plastic bags for asbestos). Job number; sample identification number; sampler's initials and date of sampling were recorded on sample labels affixed to the sample containers.

Chemical 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 laboratories – Envirolab Services Pty Ltd and ASET. All chemical samples were stored and transported at temperatures below 4°C.

All samples were collected by suitably trained DLA staff. 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).

6.1.3 Surface Water Sampling Strategy

The surface water sample was obtained using a decontaminated HDPE 0.5L beaker attached to an extendable aluminium pole and immediately transferred to sample containers of appropriate composition and preservation (glass jars for chemical analysis, acid preservation as required and filtered for dissolved heavy metals). Job number, sample identification number, sampler's initials and date of sampling were recorded on sample labels affixed to the sample containers.

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

7.0 QUALITY ASSURANCE AND QUALITY CONTROL

7.1 Field Quality Assurance / Quality Control

7.1.1 Sampling Team

Soil and surface water sampling was undertaken by DLA on the 7/03/2017.

7.1.2 Field Procedures

The following field procedures were implemented as part of field Quality Assurance / Quality Control (QA / QC):

- **Sample Containers:** soil samples collected during the investigation were placed immediately into laboratory prepared glass jars with Teflon lid inserts. Standard identification labels were adhered to each individual container and labelled according to depth, date, sampling team and media collected;
- **Decontamination:** all equipment used in the sampling program which includes a hand auger, spades and mixing bowl was decontaminated prior to use and between samples to prevent cross contamination. Decontamination of equipment involved:
    - Cleaning equipment in potable water to remove gross contamination;
    - Cleaning in a solution of Decon 90; and
    - Rinsing in clean demineralised water then wiping with clean lint free cloths.
- **Chain of Custody**: samples were recorded on a chain of custody form. The chain of custody form accompanied samples upon dispatch to the NATA registered laboratories for analysis. Copies of the chain of custody forms, signed by laboratory, that acknowledged sample receipt date and time, samples received in good condition and properly chilled and documentation received in proper order, are provided in **Appendix 6**;

7.1.3 Field QA/QC Duplicate Analysis

Field duplicate samples for soil were prepared in the field through the following process:

- A larger than normal quantity of soil is recovered from the sample location selected for duplication;
- The sample is placed in a decontaminated stainless bowl and mixed as thoroughly as practicable before being divided into equal parts;

- Two portions of the sub-sample are immediately transferred, one for an intra-laboratory duplicate and another as a sample; and
- Samples are placed into a labelled, laboratory supplied 250ml glass jar and sealed with an airtight, Teflon screw top lid. The fully filled jars are labelled as the sample and duplicate and immediately placed in a chilled esky.

The duplicate sample were prepared on the basis of sample numbers recovered during the field work. The duplicate sample frequency was computed using the total number of samples analysed as part of this assessment. The duplicate sample frequencies are shown below:

SOIL SAMPLES	**6 Samples**	1 intra-laboratory duplicate	17%

An intra-laboratory duplicate rate of 17% was achieved, greater than the 10% required by the Field Quality Plan.

Comparisons were made of the laboratory test results for the duplicate sample with the original sample and the Relative Percentage Difference (RPD) calculated as difference/average in order to assess the accuracy of the sampling and laboratory test procedures. The comparisons between the duplicate and original sample indicate acceptable RPDs when they comply with criteria which are commonly set at:

- Less than 30% for inorganics and 50% for organics;
- Less than five times the Laboratory LOR; and
- The difference between concentrations is less than 5% of the relevant HIL concentration.

Field duplicates provide an indication of the whole validation process, including the sampling process, sample preparation and analysis. There were no exceedances of the criteria for the intra-laboratory duplicate.

7.2 Laboratory QA/QC

7.2.1 Selected Laboratory

The primary laboratory for soil, surface water and duplicate sample analysis was Envirolab Services located at Chatswood in Sydney. The analytical methods and procedures used are NATA certified and meet requirements of NEPM (NEPC, 2013).

7.2.2 Laboratory Control Measures

Envirolab's quality program comprises of reagent/method blanks, matrix spikes, surrogate spikes, laboratory duplicates and laboratory control samples at or in excess of current NEPM and Australian and New Zealand Environment and Conservation Council (ANZECC) guidelines.

The QC testing conducted internally by Envirolab comprised the following:

- Method blank – 1 per 20 samples or part thereof per analytical batch;
- Matrix spike – 1 per 20 samples or part thereof per analytical batch;
- Matrix spike duplicate – 1 per analytical batches between 6 – 20 samples;
- Surrogate spike – run on all samples where the analyte is appropriate;
- Laboratory duplicate – 1 per 10 samples or part thereof per analytical batch; and
- Laboratory control sample – 1 per 20 samples or part thereof per analytical batch.

7.2.3 Laboratory QA / QC Results

All samples were received at the laboratory in good order, with the correct documentation and were properly chilled. All samples were analysed within the recommended holding times. The signed sample receipt advice for all samples is included on the chain of custody forms. Summary of the laboratory quality control results for soil and surface water is included in **Appendix 6**.

A laboratory quality control summary and full laboratory QA / QC checklist is included on the laboratory reports presented in **Appendix 6**. Laboratory QA / QC procedures to determine the accuracy and precision of the analyses comprised the following:

- No target analytes were detected in any of the method blanks, indicating that the analytical method was satisfactory and no contamination occurred;
- Matrix spike samples were within the accepted range indicating low matrix interference;
- Surrogate spikes were within the accepted range indicating no gross errors have occurred in the analysis procedure leading to significant analyte loss;
- Laboratory control samples were within the accepted range confirming primary calibration; and,
- RPDs for the duplicate control samples were found to be within the acceptable limit.

7.3 QA / QC Assessment

Based on the QA/QC results, DLA considers the field measurement data and laboratory analytical results obtained are valid and meet the data quality objectives set for this DSI:

- Documentation, including signed COCs confirming the samples were received in good condition, field calibration records and field drilling logs, are complete and copies provided in this report;
- Overall completeness is above 95% with all samples collected and analysed in accordance with the sampling strategy, field and laboratory QA/QC procedures, and laboratory results confirm satisfactory field sampling and laboratory procedures employed; and
- All samples were collected by an experienced environmental consultant, with an established industrial standard sampling protocol, and the samples were analysed by NATA certified laboratories, using standard analytical methods. These indicate satisfactory data comparability.

Therefore, DLA concludes that the data detailed in the following **Section 8.0** is representative of the overall site condition and any site impacts at the time of the PSI.

8.0 ASSESSMENT CRITERIA

The Assessment Criteria have been derived from NEPM (NEPC, 2013). The relevant thresholds are specific to the proposed development, and take into account the anticipated exposure pathways as detailed in the Conceptual Site Model and proposed development details.

The Assessment Criteria are not clean up criteria, but are indicative of a level of contamination above which there is a potentially unacceptable risk which may require further assessment, management or remediation.

8.1 Soil Criteria

8.1.1 Health Investigation Levels

The Health Investigation Levels (HILs) are scientifically based, generic assessment criteria designed to be used in the first stage (Tier 1) of an assessment of potential risks to human health from chronic exposure to contaminants. They are intentionally conservative and are based on a reasonable worst case scenario for four generic land use scenarios. Considering the proposed land use, the following HIL has been adopted:

- HIL A – Residential with garden / soil access

The adopted HILs, from Table 1A(1) and Table 7, Schedule B1 of NEPM (NEPC, 2013) are shown in the following table:

Table 8: Health Investigation Levels for Soils

ANALYTES	HIL-A
Heavy Metals	
Arsenic	100
Cadmium	20
Chromium	100
Copper	6,000
Lead	300
Mercury	40
Nickel	400
Zinc	7,400
PAH	
BaP TEQ	3
Total PAHs	300
PCB	
PCB	1
Pesticides	
DDT+DDE+DDD	240
Aldrin and Dieldrin	6
Chlordane	50
Endosulfan	270
Endrin	10
Heptachlor	6
HCB	10
Methoxychlor	300
Mirex	10
Toxaphene	20
Asbestos	
Bonded ACM	0.01% w/w
Friable Asbestos/Asbestos Fines	0.001% w/w
Surface Asbestos (0.1m)	No Visible

Health Investigation Levels soured from NEPM (NEPC, 2013) Table 1A(1)
Asbestos Health Screening Levels sourced from NEPM (NEPC, 2013) Table 7.
BaP (TEQ): Benzo(a)pyrene Toxic Equivalence Quotient. Toxic Equivalence Quotient (TEQ) expresses an aggregate measure of toxicity based on a number of contributing PAH compounds.

8.1.2 Health Screening Levels

Health Screening Levels (HSLs) are used to assess selected petroleum compounds and fractions to assess the risk to human health via inhalation and direct contact with affected soils and groundwater. The HSLs were developed by the Co-operative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) and were derived through the consideration of health effects only, with particular emphasis on the vapour exposure pathway. Other considerations such as ecological risk, aesthetics, the presence of free phase product and explosive / fire risk are not addressed by the HSLs.

In order to determine whether the HSLs tabulated in Schedule B1 of NEPC (2013) are applicable or whether a site specific determination is required, CRC CARE provide an application checklist which should be completed prior to using the HSLs. The following parameters were considered in completing the checklist:

- **Potential Contaminants –** Petroleum Hydrocarbons;
- **Land use –** HSL A;
- **Potential Pathways –** soil vapour intrusion, direct contact;
- **Media –** soil;
- **Soil Types –** clay is the dominant sub-surface profile, the majority of fill soils comprised sandy mixtures; and,
- **Depth to Contamination –** various, all data will initially be compared with the HSLs for the shallowest depth range, with any failures then further considered with respect to expected depth below design level.

On the basis of these considerations, the following HSL has been adopted:

- **HIL A – Residential with garden/soil access for 'Sand' (or 'Coarse').**

Criteria for 'Sand' are the most sensitive. The adopted soil HSLs for vapour intrusion, from Table 1A(3), Schedule B1 of NEPM (NEPC, 2013) are outlined below.

Table 9: Health Screening Levels for Soils (Sand)

ANALYTES	HSL-A (Sand) 0 to 1.0m	HSL-A (Sand) 1.0 to <2.0m	HSL-A (Sand) 2.0 to <4.0m	Direct Contact HSL-A
Benzene	0.5	0.5	0.5	100
Toluene	160	220	310	14,000
Ethylbenzene	55	NL	NL	4,500
Xylenes	40	60	95	12,000
Naphthalene	3	NL	NL	1,400
F1: C_6-C_{10}	45	70	110	4,400
F2: C_{10}-C_{16}	110	240	440	3,300
F3: C_{16}-C_{34}	NA	NA	NA	4,500
F4: C_{34}-C_{40}	NA	NA	NA	6,300

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)..

Vapour Intrusion Criteria sourced from NEPM (NEPC, 2013) *Table 1A(3) – Soil HSLs for vapour intrusion.*
Direct Contact Criteria sourced from 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.*

8.1.3 Management Limits

In addition to appropriate consideration and application of the HSLs, there are additional considerations which reflect the nature and properties of petroleum hydrocarbons, including:

- Formation of observable light non-aqueous phase liquids (LNAPL);
- Fire and explosion hazards; and
- Effects on buried infrastructure e.g. penetration of, or damage to, in-ground services.

Management limits to avoid or minimise these potential effects have been adopted in NEPM (NEPC, 2013) as interim Tier 1 guidance. The adopted management limits, from Table 1B(7), Schedule B1 of NEPM (NEPC, 2013) are outlined below:

Table 10: Management Limits for Soils (Coarse)

ANALYTES	ML (Coarse) Urban Residential and Public Open Space
Benzene	--
Toluene	--
Ethylbenzene	--
Xylenes	--
Benzo(a)Pyrene	--
F1: C_6-C_{10}	700
F2: C_{10}-C_{16}	1,000
F3: C_{16}-C_{34}	2,500
F4: C_{34}-C_{40}	10,000

8.2 Surface Water Criteria

Criteria for surface water was obtained from *Australia and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC, 2000), and *Managing Urban Stormwater – Harvesting and Reuse* (NSW DEC 2006).

Concentrations in excess of the trigger values are not 'clean-up' thresholds and do not automatically indicate that management or remedial action is necessary; but instead show that further investigation and evaluation of potential risks will be required. ANZECC (2000) provides a range of trigger values which should be applied to different ecosystem conditions. ANZECC (2000) recognises three main

ecosystem conditions – high conservation/ecological value systems, slightly to moderately disturbed systems and highly disturbed systems.

There are four different trigger values provided in ANZECC (2000). These trigger values range from most sensitive to least sensitive conditions: 99%, 95%, 90% and 80%. The Site has been disturbed since the 1960's, with development potentially impacting the local hydrology, water and sediment quality in the area. The Site is now considered to be in a moderately disturbed system. DLA has therefore adopted the 95% (slightly to moderately disturbed) trigger values for assessment of water quality at the Site.

The Assessment Criteria for surface water is provided in the table below. The irrigation column refers to onsite reuse of the dam water. The discharge column refers to pumping of dam water offsite into the nearest creek/waterway.

Table 9f – Surface and Groundwater Investigation Levels (µg/L)

ANALYTES	Irrigation (onsite)	Discharge (offsite)
pH	6.0-9.0	6.5-8.5
TSS	50[d]	40[e]
Total Phosphorous	25-125	0.25[f]
Total Nitrogen	5-25	0.35[f]
Coliforms (CFU/100mL)	1000[f]	230
BTEX	-	
Benzene	-	500 [a]
Toluene	-	180 [LR]
Ethylbenzene	-	5 [LR]
m+p-Xylene	-	75 [LR] / 200
o-Xylene	-	350 [LR]
Total Xylene	-	--
TRH		
$C_6 – C_{10}$ (F1)	-	10 [b]
$C_{10} – C_{14}$ (F2)	-	50 [b]
C_{15}-C_{28} (F3)	-	100 [b]
C_{29}-C_{36} (F4)	-	100 [b]
$C_6 – C_{40}$ (Total)	-	700 [c]
Heavy Metals		
Arsenic (III)	-	24
Arsenic (V)	-	13

Cadmium	-	0.2
Chromium (III)	-	--
Chromium (VI)	-	1
Copper	-	1.4
Lead	-	3.4
Mercury	-	0.6
Nickel	-	11
Zinc	-	8
PAH		
BaP	-	0.2 [LR]
Naphthalene	-	50 [a]

a – 95% protection level for slightly to moderately disturbed system recommended by ANZECC/ARMCANZ (2000), due to its potential bioaccumulation effects.
b – In the absence of a nominated guideline value, the Laboratory Limit of Reporting (LOR) has been taken as the nominated trigger value for the presence of TRH compounds in groundwater.
c – Criteria obtained from Dutch Intervention Levels (Ministry of Housing and the Environmental, 2000).
d - based on concentrations that may result in blockages or operational issues in irrigation sprays.
e - Protection of aquaculture species (ANZECC, 2000).
f - NSW lowland river trigger values for slightly disturbed ecosystems (ANZECC, 2000).
NSL = No Set Limit.
LR – Low reliability trigger values for 95% protection level recommended for slightly to moderately disturbed system by ANZECC/ARMCANZ (2000), to be used as an indicative interim working level only.
NL = If the derived groundwater HSL exceeds the water solubility limit, a soil vapour source concentration for a petroleum mixture could not exceed a level that would result in the maximum allowable vapour risk for the given scenario. For these scenarios, no HSL is presented for these chemicals and the HSL is shown as 'not limiting' or NL.
1 – NEPM (NEPC, 2013) Table 1A(4) – Groundwater HSLs for Vapour Intrusion for clay in Commercial/Industrial land use scenario.
2 – Australia and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC, 2000).
3 - Australia and New Zealand Guidelines for Fresh and Marine Water Quality (ANECC, 2000) Table 5.2.3

8.2.1 Ecological Screening Levels

Ecological screening levels (ESLs) have been developed for selected petroleum hydrocarbon compounds and are applicable for assessing risk to terrestrial ecosystems. ESLs broadly apply to coarse and fine-grained soils and various land uses. They are generally applicable to the top 2 m of soil. The adopted ESLs, from Table 1B(6), Schedule B1 of NEPM (NEPC, 2013) are outlined below:

Table 11: Ecological Screening Levels (Coarse)

ANALYTES	ESL mg/kg (Coarse) Urban Residential and Public Open Space
Benzene	50
Toluene	85
Ethylbenzene	70
Xylenes	105
Benzo(a)Pyrene	0.7

F1: C_6-C_{10}	180
F2: C_{10}-C_{16}	120
F3: C_{16}-C_{34}	300
F4: C_{34}-C_{40}	2,800
ANALYTES	**ESL (Coarse) Commercial / Industrial**
Benzene	75
Toluene	135
Ethylbenzene	165
Xylenes	180
Benzo(a)Pyrene	1.4
F1: C_6-C_{10}	215
F2: C_{10}-C_{16}	170
F3: C_{16}-C_{34}	1,700
F4: C_{34}-C_{40}	3,300

9.0 RESULTS

9.1 Soil Analytical Results

Laboratory results of soil analyses are compared with the Assessment Criteria in **Appendix 7 –** Data Summary Table. The laboratory analytical reports of soil samples are provided in **Appendix 6 –** Nata Certified Analytical Results.

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

All samples collected were analysed for Volatile Total Recoverable Hydrocarbons (vTRH), Semi-Volatile Total Recoverable Hydrocarbon (TRH), Benzene, Toluene, Ethylbenzene and Xylene (BTEX) and Naphthalene. There were no concentrations of vTRH, TRH, BTEX or Naphthalene recorded above the Laboratory Limit of Reporting (LOR).

9.1.2 Polycyclic Aromatic Hydrocarbons

All samples were analysed for Polycyclic Aromatic Hydrocarbons (PAH) compounds. There were no recorded detections of BaP TEQ. Total PAH concentrations were detected above the laboratory LOR in one samples – sample S1 (2.9 mg/kg). This concentration is below the adopted assessment criteria of 300mg/kg.

9.1.3 Pesticides and Polychlorinated Biphenyls

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

9.1.4 Heavy Metals

All samples were analysed for eight heavy metals (arsenc, cadmium, chromium, copper, lead, mercury, nickel, zinc). Detections were observed for all heavy metals with the exception of mercury and cadmium. All samples were compliant with the HILs and EILs for each respective analyte (where applicable).

9.1.5 Asbestos

Analysis of asbestos in soils was undertaken in three samples (F1, F2, S1). No samples reported the presence of asbestos fines/fibrous asbestos (AF/FA). No visible fragments of asbestos were observed during the Site inspection or during sampling.

9.2 Surface Water Analytical Results

Laboratory results of surface water analyses are summarised and compared with the Assessment Criteria in **Appendix 7 –** Data Summary Tables. The laboratory analytical report of the surface water sample is provided in **Appendix 6 –** Nata Certified Analytical Results.

Laboratory results of surface water analyses show that:

- No TRH, BTEX, or PAHs were detected above the laboratory LOR;
- Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Hg) were not detected above the adopted assessment criteria;
- Exceedances of the discharge criteria (230cfu/100mL) and irrigation criteria (1000cfu/100mL) were observed for faecal coliforms (2400cfu/100mL); and
- Exceedance of the discharge criteria (0.35mg/L) were observed for total nitrogen (2.2mg/L).

10.0 CONCLUSIONS AND RECOMMENDATIONS

A review of Site history indicates the Site was used for agriculture land use until the 1970's, after which it appears to have been used as a rural / residential property. Four AECs were identified, mainly associated with the fill around the residential dwelling and dam. As the residence was constructed between 1965 and 1975, the potential presence of asbestos should be considered during demolition.

The investigation included a limited program of soil and surface water testing at six locations identified as potential AECs. The samples were tested for COPC identified from past land use and those generally associated with fill materials. No exceedances of the adopted assessment criteria were reported in any soil samples.

Surface water from the on-Site dam was tested to determine suitability for water to be applied to land, or for discharge off Site. Results from the water sample were screened against the *Australia and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC, 2000) and *Managing Urban Stormwater – Harvesting and Reuse* (NSW DEC 2006) guidelines. The water sample exceeded the adopted criteria for discharge off-site for faecal coliforms and total nitrogen. The sample also exceeded the adopted criteria for suitability to application to land for faecal coliforms. No other analytes exceeded adopted criteria.

Despite an exceedance of adopted criteria for suitability to application to land for faecal coliforms, water can safely be applied to land as the Site is unoccupied and not currently used for food production. As water is down slope of the Site and water levels can be safely stored within the dam, the exceedances of adopted surface water criteria do not pose a risk to surrounding soils and do not affect suitability of the Site for its intended land use.

Based on the findings of this investigation, DLA provides the following recommendations:

- Based on the surface water results, it is recommended that the water be chemically treated prior to discharge, or applied to land ensuring no run-off leaves the Site. Development of a dewatering plan may be considered prior to discharge, to fully plan and manage the removal of water from the dam while ensuring minimal risk to humans and the environment.

- A hazardous materials survey may be conducted on the residential dwelling prior to demolition, in order to fully manage any potential risks to human health and the environment such as asbestos or polychlorinated bi-phenyls (PCBs).

- Any unexpected finds of stained or odorous material uncovered during demolition/development should be inspected by a contaminated land professional.

Investigation and reporting of the Site are considered to be adequate for assessment purposes to assess the likelihood of contamination on the Site as a result of past and present land use activities in accordance with 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 ed., 2006).

Based on a review of the available desktop search data, observations made during the Site walkover and supplementary sampling, DLA consider that there is a low likelihood of unacceptable contamination to be present on the Site as a result of past and present land use activities.

11.0 REFERENCES

Chapman, G A, Murphy, C L, Tille, P J, Atkinson, G and Morse, R J (1989) *Sydney Soil Landscapes Map, Series 9130*

Department of Urban Affairs and Planning (DUAP) (1998) *Managing Land Contamination: Planning Guidelines, SEPP 55 - Remediation of Land*

National Environment Protection Council (NEPC) (2013) *National Environment Protection (Assessment of Site Contamination) Measure (No.1)*

NSW DECC (2009) *Guidelines on Duty to Report Contamination under the Contamination Land Management Act 1997*

NSW EPA (2011) *Guidelines for Consultants Reporting on Contaminated Sites*

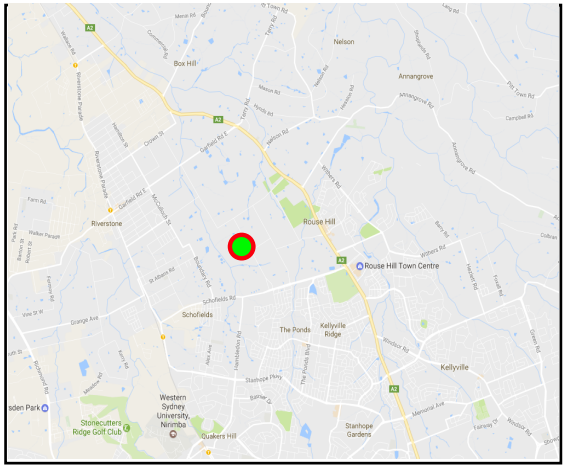
NSW EPA (2006) *Guidelines for the NSW Site Auditor Scheme* (Second Edition)

NSW EPA (1999) *Guidelines on Significant Risk of Harm from Contaminated Land and the Duty to Report*

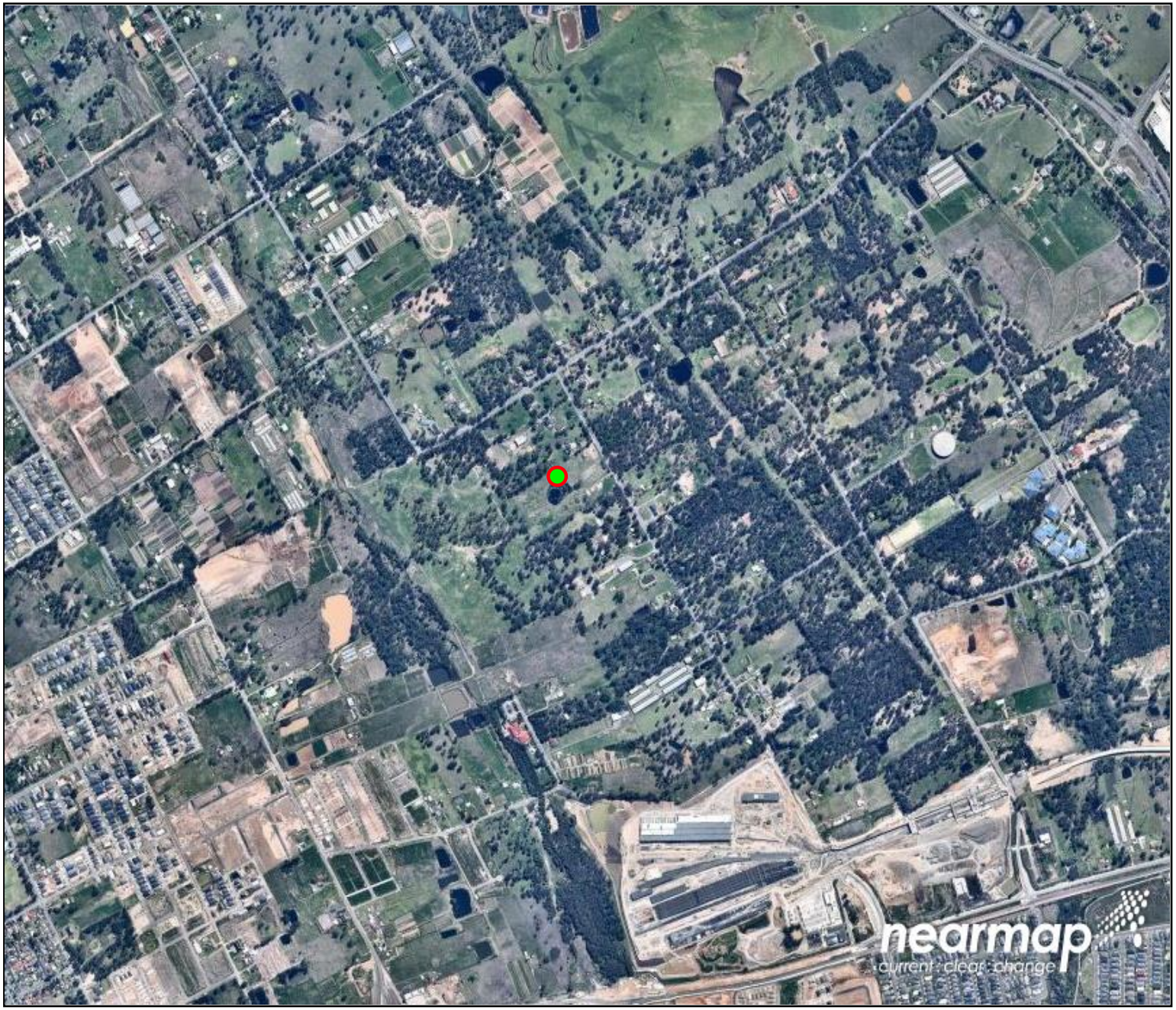
NSW Government (1979) *Environmental Planning and Assessment Act* and associated regulations

FIGURE 1

SITE LOCATION



Locality Map



Legend

Site Location

N
W E
S

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 - 161 Tallawong Road, Rouse Hill			
Site Address: 161 Tallawong Road, Rouse Hill	Project No.: DL4069	Figure No: 1	Date: 14/03/2017
Client: ARCInnovationz	Scale: Not to Scale	Compiled: AD	Revision: Version 1.0

FIGURE 2

SITE LAYOUT AND SAMPLING LOCATIONS

Legend

- Site Boundary
- Sample Locations

N

Approximate Scale

0m 20m 40m

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 Layout - 161 Tallawong Road, Rouse Hill

Client	Project No.	Figure No	Date
ARCInnovationz	DL4069	2	5/05/2017
	Scale: As Shown	Compiled: AD	Revision: R00

FIGURE 3

AECS

Legend

Site Boundary

N

Approximate Scale

0m 20m 40m

DLA Environmental Services
A Pacific Environment company

Sydney Office
Phone (02) 9476 1765
Fax (02) 9476 1557

Maitland Office
Phone (02) 4933 0001

Title: AECs - 161 Tallawong Road, Rouse Hill

Client	Project No.	Figure No	Date
ARCInnovationz	DL4069	3	14/03/2017
	Scale: As Shown	Compiled: AD	Revision: R00

APPENDIX 1

GROUNDWATER WORKS DATABASE SEARCH

NSW Office of Water
Work Summary

GW108452

Licence: 10BL601070 **Licence Status:** CONVERTED

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

Work Type: Bore
Work Status: Filled,Backfilled
Construct.Method: Down Hole Hammer
Owner Type: Private

Commenced Date:
Completion Date: 08/01/2007
Final Depth: 60.00 m
Drilled Depth: 60.00 m

Contractor Name: INTERTEC DRILLING SERVICES
Driller: William Crump
Assistant Driller:

Property: FALCONE 68 GUNTAWONG ROAD ROUSE HILL 2155 NSW
GWMA:
GW Zone:
Standing Water Level: 12.000
Salinity:
Yield: 2.300

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.20	157//208203
Licensed:			

Region: 10 - Sydney South Coast
River Basin: 212 - HAWKESBURY RIVER
Area/District:
CMA Map: 9030-1S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6271757.0
Easting: 305320.0
Latitude: 33°40'34.6"S
Longitude: 150°53'60.0"E

GS Map: -
MGA Zone: 0
Coordinate Source: GIS - Geographic Information System

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	204			(Unknown)
1		Hole	Hole	2.50	60.00	163			Down Hole Hammer
1		Backfill	Drilled Cuttings	0.00	2.50	204			
1		Backfill	Drilled Cuttings	2.50	60.00	163			

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)
46.00	46.50	0.50	Unknown			0.35		00:25:00	
52.10	52.20	0.10	Unknown	12.00		1.35		00:25:00	

56.00	56.30	0.30	Unknown			0.60	00:25:00	

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	2.00	2.00	Clay	Clay	
2.00	34.00	32.00	Shale	Shale	
34.00	36.50	2.50	Sandstone, with Shale	Sandstone	
36.50	46.00	9.50	Sandstone, light grey	Sandstone	
46.00	46.50	0.50	Sandstone & Quartz	Sandstone	
46.50	52.10	5.60	Sandstone, grey	Sandstone	
52.10	52.20	0.10	Sandstone, fractured	Sandstone	
52.20	56.00	3.80	Sandstone, grey	Sandstone	
56.00	56.30	0.30	Sandstone, soft	Sandstone	
56.30	60.00	3.70	Sandstone, grey	Sandstone	

Remarks

24/02/2010: updated from original form A

***** End of GW108452 *****

APPENDIX 2

SECTION 149 CERTIFICATE

Applicant Details

Your reference ROUSE HILL

INFO TRACK
DX 578
SYDNEY

Certificate Details

Certificate no. PL2017/02198 **Fee: $133.00**

Date issued 17 March 2017 **Urgency fee: N/A**

Receipt no. D000689898

Property information

Property ID 112431 **Land ID** 112431

Legal description LOT 43 DP 30186

Address 161 TALLAWONG ROAD ROUSE HILL NSW 2155

County CUMBERLAND **Parish** GIDLEY

PLANNING CERTIFICATE (149 Part 2)

Blacktown City Council prepared this Planning Certificate under Section 149 of the *Environmental Planning and Assessment Act 1979*. The form and content of the Certificate is consistent with Schedule 4 of the *Environmental Planning and Assessment Regulation 2000*.

Disclaimer

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Blacktown City Council also gives notice to all users of the information supplied herein, wherever any particular enquiry herein remains unanswered or has not been elaborated upon, such silence should not be interpreted as meaning or inferring either a negative or a positive response as the case may be.

Section 149(2)

The following information is provided under Section 149(2) of the *Environmental Planning and Assessment Act 1979*. The information relates to the subject land at the date of this Certificate.

---

1. Names of relevant planning instruments and development control plans

1.1 Environmental Planning Instrument

As at the date of this certificate the abovementioned land is not affected by Blacktown Local Environmental Plan 2015.

The land is affected by the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006.*

1.2 Proposed Local Environmental Plans

Not applicable.

1.3 Other Applicable State Environmental Planning Policies

Attachment 1 contains a list of State Environmental Planning Policies that may apply to the carrying out of development on the subject land.

1.4 Proposed State Environmental Planning Policies

Council is not aware of any proposed State Environmental Planning Policy that is or has been the subject of community consultation or on public exhibition under the Act, applying to the subject land.

1.5 Development control plans

As at the date of this certificate the abovementioned land is affected by the NSW Government's *Blacktown City Council Growth Centre Precincts Development Control Plan 2014*.

Blacktown Development Control Plan 2015 generally does not apply to land that a Precinct Plan applies to, except where specifically referred to in the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* or the *Growth Centre Precincts Development Control Plan 2014*.

Blacktown City Council Growth Centre Precincts DCP - Schedule 8 - Riverstone East applies to the subject land.

2. Zoning and land use under relevant environmental planning instruments

The following information will assist in determining how the subject land may be developed. It is recommended that you read this section in conjunction with a full copy of any relevant environmental planning instrument as there may be additional provisions that affect how the land may be developed.

2.1 Zoning

Under *State Environmental Planning Policy (Sydney Region Growth Centres) 2006,* the land is zoned:

Zone R2 Low Density Residential

Below is an extract from the principal Environmental Planning Instrument, outlining the types of development that may or may not be carried out in the above zone.

2 Permitted without consent

Home occupations

3 Permitted with consent

Bed and breakfast accommodation; Boarding houses; Business identification signs; Child care centres; Community facilities; Drainage; Dual occupancies; Dwelling houses; Earthworks; Educational establishments; Environmental protection works; Exhibition homes; Exhibition villages; Group homes; Health consulting rooms; Home-based child care; Home businesses; Home industries; Information and education facilities; Neighbourhood shops; Places of public worship; Roads; Secondary dwellings; Semi-detached dwellings; Seniors housing; Shop top housing; Studio dwellings; Veterinary hospitals

4 Prohibited

Any development not specified in item 2 or 3

2.2 Minimum land dimensions for the erection of a dwelling house

Not applicable

2.3 Critical habitat

The land does not include or comprise a critical habitat.

Note: Critical habitat registers are kept by the National Parks and Wildlife Service under the *Threatened Species Conservation Act 1995* and the Department of Fisheries under the *Fisheries Management Act 1994*.

2.4 Conservation areas

The land is not within a conservation area.

2.5 Environmental Heritage

The land does not contain an item of environmental heritage under the protection of State Environmental Planning Policy (Sydney Region Growth Centres) 2006

3. Complying development

Complying development may or may not be carried out on the subject land under an Environmental Planning Policy. Council does not have sufficient information to determine the extent to which specific complying development may or may not be carried out.

4. Coastal protection

The subject land is not affected by the operation of Sections 38 or 39 of the *Coastal Protection Act, 1979*.

5. Mine subsidence

The subject land has not been proclaimed to be a mine subsidence district within the meaning of Section 15 of the *Mine Subsidence Compensation Act 1961*.

6. Road widening and road realignment

The land is affected by a road pattern.

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

7.1 Contaminated Lands Policy and Asbestos Policy

Council has adopted a Contaminated Lands Policy and an Asbestos Policy which may restrict development on the subject land.

The Land Contamination Policy applies when zoning or land use changes are proposed on land which has previously been used for certain purposes or has the potential to be affected by such purposes undertaken on nearby lands. The Asbestos Policy applies where land contains, or is likely to have contained in the past, buildings or structures that were erected prior to the banning of asbestos. Both policies should be considered in the context of relevant State legislation and guidelines.

Council's records may not be sufficient to determine all previous uses on the land, or determine activities that may have taken place on this land.

7.2 Other policies on hazard risk restrictions

Council has not adopted any other policies to restrict the development of the subject land by reason of the likelihood of landslip, bushfire, tidal inundation, subsidence or the occurrence of acid sulphate soils.

Note: Although Council has not adopted a specific policy to restrict development bushfire prone land, it is bound by state-wide bushfire legislation that may restrict development on the subject land. Additional information relating to bushfire prone land is provided at point 11 below.

7a. Flood related development controls information

This lot is shown flood prone on mapping provided by the Department of Planning. The investigation for this area has not been completed and all enquiries should be directed to the Department of Planning. Flood related development controls for this lot are provided in the Development Control Plan for this area, prepared by the Department of Planning. Where development is proposed within or adjacent to land that is shown on the Flood Prone Land figure as being affected by the 1% AEP level, Council may require a more detailed flood study to be undertaken by the applicant to confirm the extent on the flood affectation on that land.

8. Land reserved for acquisition

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 makes provision for land included on the Land Reservation Acquisition Map to be acquired by a public authority.

9. Contributions plans

Council currently levies contributions under Section 94 of the *Environmental Planning & Assessment Act 1979* for facilities and services. The further development of the subject land may incur such contributions.

Contributions Plan No. 22 - Area 20 Precinct applies to the subject land.

Draft Contributions Plan No. 22 - East Riverstone applies to the subject land.

9a. Biodiversity certified land

The land is biodiversity certified land as defined by Part 7AA of the *Threatened Species Conservation Act 1995*.

10. Biobanking agreements

The land is not subject to any biobanking agreement under Part 7A of the *Threatened Species Conservation Act 1995*.

11. Bushfire prone land

The Rural Fires and Environmental Assessment Legislation Amendment Act 2002, which came into force on 1 August 2002, introduced development provisions for bush fire prone land as shown on a Bush Fire Prone Land Map. "Bush fire prone land" is land that has been designated by the Commissioner of the NSW Rural Fire Service as being bush fire prone due to characteristics of vegetation and topography. The land the subject of this certificate has been identified on Council's Bush Fire Prone Land Map as being:

Clear of any bush fire prone land

On land that is bush fire prone, certain development may require further consideration under Section 79BA or Section 91 of the *Environmental Planning & Assessment Act 1979* and under Section 100B of the *Rural Fires Act 1997*.

12. Property vegetation plans

The subject land is not affected by a property vegetation plan under the *Native Vegetation Act 2003*. The Blacktown local government area is excluded from the operation of the *Native Vegetation Act 2003* (refer Schedule 1 Part 3 of that Act).

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

No. Council has not been notified of any order made under the *Trees (Disputes Between Neighbours) Act 2006* in relation to the subject land.

14. Directions under Part 3A

Land to which this Certificate applies is not subject to the above.

15. Site compatibility certificates and conditions for seniors housing

Land to which this Certificate applies is not subject to the above.

16. Site compatibility certificates for infrastructure

Land to which this Certificate applies is not subject to the above.

17. Site compatibility certificates and conditions for affordable rental housing

Land to which this Certificate applies is not subject to the above.

18. Paper subdivision information

Not applicable

19. Site verification certificates

Council is not aware of any site verification certificate applying to the subject land.

Under the *Contaminated Land Management Act 1997* and *Contaminated Land Management Amendment Act 2008*

(a) The land to which this certificate relates has not been declared to be significantly contaminated land at the date when the certificate was issued

(b) The land to which the certificate relates is not subject to a management order at the date when the certificate was issued

(c) The land to which this certificate relates is not the subject of an approved voluntary management proposal at the date when the certificate was issued

(d) The land to which this certificate relates is not subject to an ongoing maintenance order as at the date when the certificate was issued

(e) The land to which this certificate relates is not the subject of a site audit statement provided to the Council.

Section 149(5)

The following information is provided under Section 149(5) of the *Environmental Planning & Assessment Act 1979*. As per section 149(6) of the Act, Council shall not incur any liability in respect of any advice provided in good faith under section 149(5). The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this Certificate.

Planning Instruments and Covenants

The provisions of any covenant, agreement or instrument applying to this land that restrict or prohibit certain development may be inconsistent with the provisions of an environmental planning instrument. In such cases, the provisions of any such covenant, agreement or instrument may be overridden.

Loose-filled Asbestos Insulation

Some residential homes located in the Blacktown Local Government Area may potentially contain loose-fill asbestos insulation, for example in the roof space. NSW Fair Trading maintains a Register of homes that are affected by loose-fill asbestos insulation.

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

Contact NSW Fair Trading for further information

Biodiversity and Threatened Species Conservation

The land is affected by a tree preservation control under Clause 5.9 of the Blacktown Local Environmental Plan 2015. A person shall not ringbark, cut down, lop, top, remove, injure or wilfully destroy any tree, or cause any tree to be ringbarked, cut down, topped, lopped, injured or wilfully destroyed, except with the consent of the Council.

The provisions of any covenant, agreement or instrument applying to this land purporting to restrict or prohibit certain development may be inconsistent with the provisions of a Regional Environmental Plan, State Environmental Planning Policy or Blacktown Local Environmental Plan 2015, in which case the provisions of any such covenant, agreement or instrument may be overridden.

The *Threatened Species Conservation Act 1995* provides for the conservation of threatened species, populations and ecological communities of animals and plants.

The *Environment Protection and Biodiversity Conservation Act 1999* provides protection for items of national significance. Items of national environmental significance include nationally threatened animal and plant species and ecological communities.

The Act requires a separate Commonwealth approval to be obtained where an action is likely to have significant impacts on items of national environmental significance.

For further information on this matter, please contact the Australian Government's Department of the Environment.

Attachment 1 – State Environmental Planning Policies

In addition to the principal environmental planning instrument identified in section 2.1 of this Certificate, the following State Environmental Planning Policies may also affect development on the subject land.

SEPP (Affordable Rental Housing) 2009
Establishes a consistent planning regime for the provision of affordable rental housing. The policy provides incentives for new affordable rental housing, facilitates the retention of existing affordable rentals, and expands the role of not-for-profit providers. It also aims to support local centres by providing housing for workers close to places of work, and facilitate development of housing for the homeless and other disadvantaged people.

SEPP Building Sustainability Index (BASIX) 2004
This SEPP operates in conjunction with *Environmental Planning and Assessment Amendment (Building Sustainability Index: BASIX) Regulation 2004* to ensure the effective introduction of BASIX in NSW. The SEPP ensures consistency in the implementation of BASIX throughout the State by overriding competing provisions in other environmental planning instruments and development control plans, and specifying that SEPP 1 does not apply in relation to any development standard arising under BASIX. The draft SEPP was exhibited together with draft *Environmental Planning and Assessment Amendment (Building Sustainability Index: BASIX) Regulation 2004*.

SEPP (Exempt and Complying Development Codes) 2008
This policy provides exempt and complying development codes that have State-wide application, identifying, in the General Exempt Development Code, types of development that are of minimal environmental impact that may be carried out without the need for development consent and, in the General Housing Code, types of complying development that may be carried out in accordance with a complying development certificate as defined in the *Environmental Planning and Assessment Act 1979*.

SEPP (Sydney Region Growth Centres) 2006
This policy provides for the coordinated release of land for residential, employment and other urban development in Sydney's North West and South West Growth Centres, in conjunction with the precinct planning provisions contained in the *Environmental Planning and Assessment Regulation 2000*.

SEPP (Housing for Seniors and People with a Disability) 2004
This policy encourages the development of high quality accommodation for the state's ageing population and for people who have disabilities, whilst ensuring development is in keeping with the local neighbourhood. Note the name of this policy was changed from *State Environmental Planning Policy (Seniors Living) 2004* to *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004,* effective 12.10.07.

SEPP (Infrastructure) 2007
The aim of this policy is to facilitate the orderly and economic use and development of rural lands for rural and related purposes. This SEPP Provides a consistent planning regime for infrastructure and the provision of services across NSW, along with providing for consultation with relevant public authorities during the assessment process. The SEPP supports greater flexibility in the location of infrastructure and service facilities along with improved regulatory certainty and efficiency.

SEPP (Miscellaneous Consent Provisions) 2007
This SEPP contains provisions for temporary structures, subdivision, the demolition of a building or work, certain change of use and fire alarm link communication works.

SEPP (State Significant Precincts) 2005
The purpose of this Policy is to facilitate the development, redevelopment or protection of important urban, coastal and regional sites of economic, environmental or social significance to the State so as to facilitate the orderly use, development or conservation of those State significant precincts for the benefit of the State. It also aims to facilitate service delivery outcomes for a range of public services and to provide for the development of major sites for a public purpose or redevelopment of major sites no longer appropriate or suitable for public purposes.

SEPP (Mining, Petroleum, Production and Extractive Industries) 2007
This Policy aims to provide for the proper management and development of mineral, petroleum and extractive material resources for the social and economic welfare of the State. The Policy establishes appropriate planning controls to encourage ecologically sustainable development.

SEPP No. 1 - Development Standards
Makes development standards more flexible. It allows councils to approve a development proposal that does not comply with a set standard where this can be shown to be unreasonable or unnecessary.

SEPP No. 19 - Bushland in Urban Areas
Protects and preserves bushland within certain urban areas, as part of the natural heritage or for recreational, educational and scientific purposes. The policy is designed to protect bushland in public open space zones and reservations, and to ensure that bush preservation is given a high priority when local environmental plans for urban development are prepared.

SEPP No. 21 - Caravan Parks
Ensures that where caravan parks or camping grounds are permitted under an environmental planning instrument, movable dwellings, as defined in the *Local Government Act 1993*, are also permitted. The specific kinds of movable dwellings allowed under the Local Government Act in caravan parks and camping grounds are subject to the provisions of the Caravan Parks Regulation. The policy ensures that development consent is required for new caravan parks and camping grounds and for additional long-term sites in existing caravan parks. It also enables, with the council's consent, long-term sites in caravan parks to be subdivided by leases of up to 20 years.

SEPP No. 30 - Intensive Agriculture
Requires development consent for cattle feedlots having a capacity of 50 or more cattle or piggeries having a capacity of 200 or more pigs. The policy sets out information and public notification requirements to ensure there are effective planning control over this export-driven rural industry. The policy does not alter if, and where, such development is permitted, or the functions of the consent authority.

SEPP No. 32 - Urban Consolidation
States the Government's intention to ensure that urban consolidation objectives are met in all urban areas throughout the State. The policy focuses on the redevelopment of urban land

that is no longer required for the purpose it is currently zoned or used, and encourages local councils to pursue their own urban consolidation strategies to help implement the aims and objectives of the policy. Councils will continue to be responsible for the majority of rezonings. The policy sets out guidelines for the Minister to follow when considering whether to initiate a regional environmental plan (REP) to make particular sites available for consolidated urban redevelopment. Where a site is rezoned by an REP, the Minister will be the consent authority.

SEPP No. 33 - Hazardous and Offensive Development
Provides new definitions for 'hazardous industry', 'hazardous storage establishment', 'offensive industry' and 'offensive storage establishment'. The definitions apply to all planning instruments, existing and future. The new definitions enable decisions to approve or refuse a development to be based on the merit of proposal. The consent authority must careful consider the specifics the case, the location and the way in which the proposed activity is to be carried out. The policy also requires specified matters to be considered for proposals that are 'potentially hazardous' or 'potentially offensive' as defined in the policy. For example, any application to carry out a potentially hazardous or potentially offensive development is to be advertised for public comment, and applications to carry out potentially hazardous development must be supported by a preliminary hazard analysis (PHA). The policy does not change the role of councils as consent authorities, land zoning, or the designated development provisions of the Environmental Planning and Assessment Act 1979.

SEPP No. 55 - Remediation of Land
Introduces state-wide planning controls for the remediation of contaminated land. The policy states that land must not be developed if it is unsuitable for a proposed use because it is contaminated. If the land is unsuitable, remediation must take place before the land is developed. The policy makes remediation permissible across the State, defines when consent is required, requires all remediation to comply with standards, ensures land is investigated if contamination is suspected, and requires councils to be notified of all remediation proposals. To assist councils and developers, the Department, in conjunction with the Environment Protection Authority, has prepared Managing Land Contamination: Planning Guidelines.

SEPP No. 62 - Sustainable Aquaculture
Encourages the sustainable expansion of the industry in NSW. The policy implements the regional strategies already developed by creating a simple approach to identity and categorise aquaculture development on the basis of its potential environmental impact. The SEPP also identifies aquaculture development as a designated development only where there are potential environmental risks.

SEPP No. 64 - Advertising and Signage
Aims to ensure that outdoor advertising is compatible with the desired amenity and visual character of an area, provides effective communication in suitable locations and is of high quality design and finish. The SEPP was amended in August 2007 to permit and regulate outdoor advertising in transport corridors (e.g. freeways, tollways and rail corridors). The amended SEPP also aims to ensure that public benefits may be derived from advertising along and adjacent to transport corridors. Transport Corridor Outdoor Advertising and Signage Guidelines (DOP July 2007) provides information on design criteria, road safety and public benefit requirements for SEPP 64 development applications.

SEPP No. 65 - Design Quality of Residential Apartment Development
Raises the design quality of residential flat development across the state through the application of a series of design principles. Provides for the establishment of Design Review Panels to provide independent expert advice to councils on the merit of residential flat development. The accompanying regulation requires the involvement of a qualified designer throughout the design, approval and construction stages.

SREP No. 30 - St Marys
Sydney Regional Environmental Plan 30 - St Marys (SREP 30) provides a statutory framework to plan and develop 1538 hectares of land known as the Australian Defence Industries (ADI) site at St Marys. The plan zones the land for particular types of development: urban, regional park, regional open space, drainage, road/road widening, and employment.

SEPP (Western Sydney Employment Area) 2009
This State Environmental Planning Policy promotes economic development and the creation of employment in the Western Sydney Employment Area by providing for development, including major warehousing, distribution, freight transport, industrial, high technology and research facilities. The policy provides for coordinated planning, development and rezoning of land for employment or environmental conservation purposes.This State Environmental Planning Policy promotes economic development and the creation of employment in the Western Sydney Employment Area by providing for development, including major warehousing, distribution, freight transport, industrial, high technology and research facilities. The policy provides for coordinated planning, development and rezoning of land for employment or environmental conservation purposes.

SEPP (Western Sydney Parklands) 2009
The aim of the policy is to put in place planning controls that will enable the Western Sydney Parklands Trust to develop the Western Parklands into multi-use urban parkland for the region of western Sydney.

SEPP (Western Sydney Recreation Area)
This policy enables development to be carried out for recreational, sporting and cultural purposes within the Western Sydney Recreation Area, including the development of a recreation area of state significance.

General Manager

Per:

End of Certificate

APPENDIX 3

HISTORICAL TITLE SEARCH

scottASHWOOD PTY.LTD
An InfoTrack Company

ABN: 42 166 543 255
Ph: 02 9099 7400
Fax: 02 9232 7141

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

Summary of Owners Report

LPI **Sydney**

Address: 161 Tallawong Rd, Rouse Hill

Description: - Lot 43 D.P. 30186

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
19.11.1901 (1901 to 1971?)	Edwin Stephen Rouse (Esquire)	Vol 1381 Fol 132
14.10.1948 (1948 to 1971?)	Tina Beatrice Terry (Marry Woman) (Application by Transmission not investigated)	Vol 1381 Fol 132
01.06.1956 (1956 to 1971)	Roderick Buchanan Rouse Terry (Farmer) Edwin Terence Terry (Farmer) Gerald George Terry (Farmer) (Trustees)	Vol 1381 Fol 132 Now Vol 8155 Fol 13
28.08.1971 (1971 to 1990)	Gerhard Richard Moellmer (?Mollmer) (Toolmaker) Erika Moellmer (?Mollmer) (Married Woman)	Vol 8155 Fol 13 Now 43/30186
07.05.1990 (1990 to 2006)	Gerhard Richard Moellmer (?Mollmer) (Toolmaker)	43/30186
02.02.2006 (2006 to 2014)	Harold Richard Moellmer (Executor of the Estate of Gerhard Richard Moellmer)	43/30186
21.05.2014 (2014 to Date)	# Sikh Grammar School Australia	43/30186

# Denotes Current Registered Proprietor

Easements: -

- 25.10.1957 (H500894) – Easement for Drainage

Leases: -NIL

Yours Sincerely
James McDonnell
14 March 2017

Land & Property Information

Cadastral Records Enquiry Report

Requested Parcel : Lot 43 DP 30186

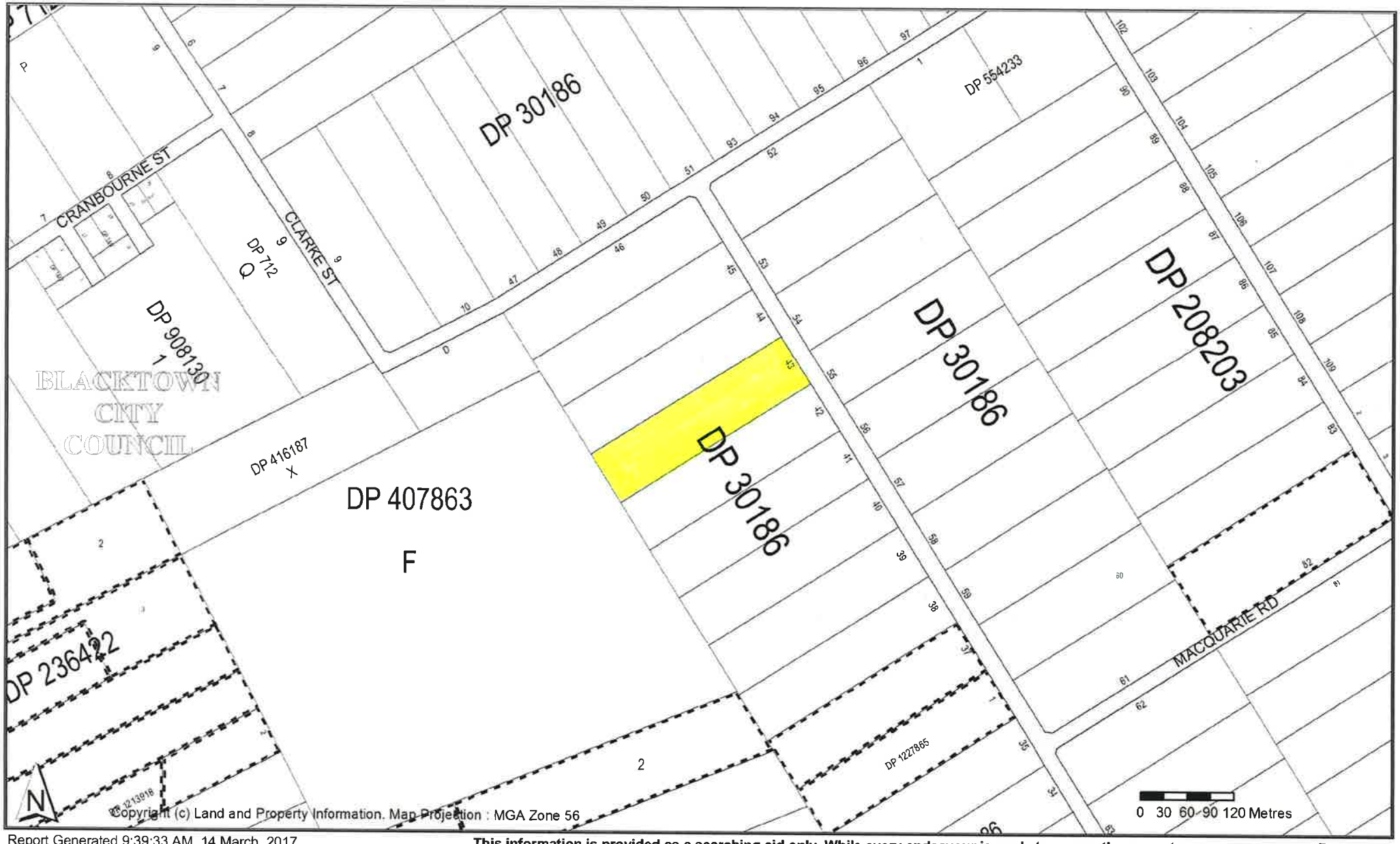
Identified Parcel : Lot 43 DP 30186

Locality : ROUSE HILL

LGA : BLACKTOWN

Parish : GIDLEY

County : CUMBERLAND



Report Generated 9:39:33 AM, 14 March, 2017

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

Shire of Blacktown

G892119 11-2-58

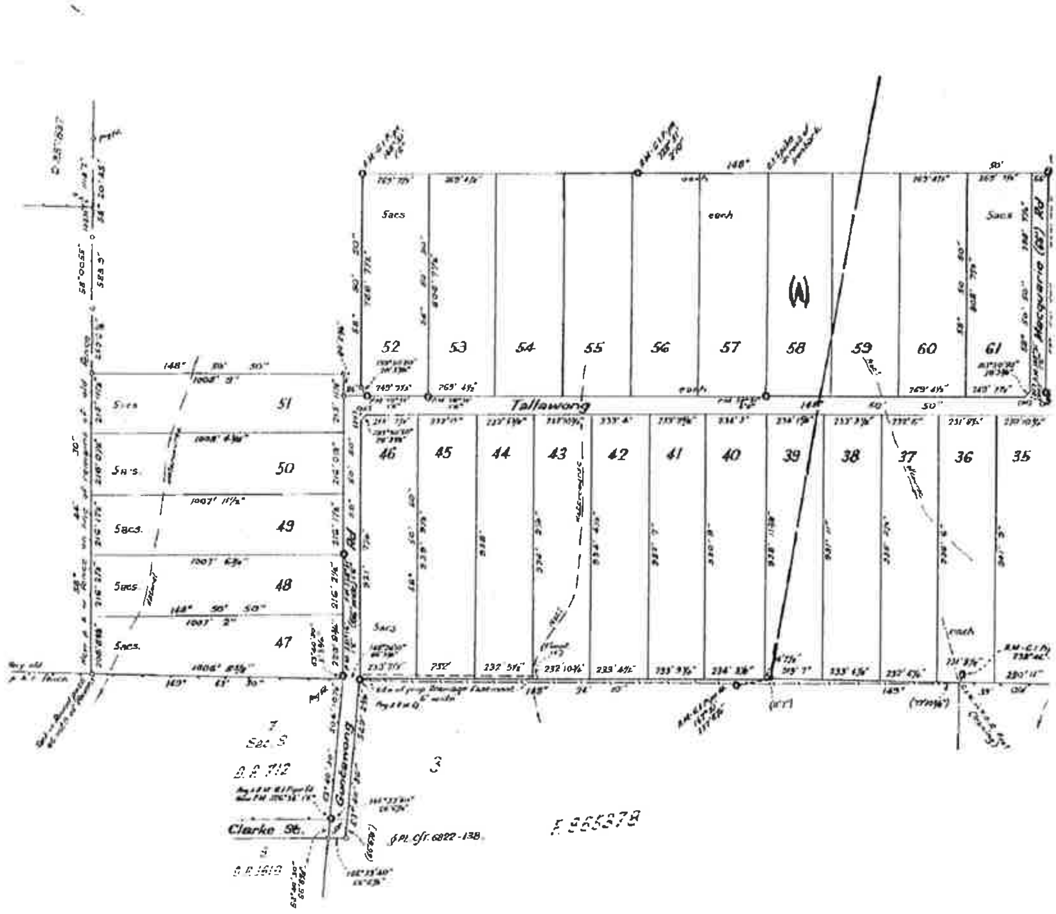
PLAN

of ~~part of the land in C/T Vol 6822 Fol 138 &~~ subd

C/T Vol 1381 Fol 132

Parish of Gidley - County of

Scale 300 feet to an inch



Notes (i) It is intended to dedicate Tallawong, Guntawong and Macquarie Roads to the public.
(ii) It is intended to create a Drainage Easement 6' wide as shown hereon in favour of the Council of the Shire of Blacktown.
(iii) Permanent Marks are concrete set G.I. Pipes

Approved under the Common Seal of the Council of the Shire of Blacktown and certified in accordance with the provisions of Section 327 of the Local Government Act 1919 as amended.
Councils Minute No 128 Plan No 2219

President Shire Clerk

3rd February 1958

DP 30186 (E)

Datum line of azimuth "A"-"B".

D.P. 30186

CONVERSION TABLE ADDED IN DEPARTMENT OF LANDS

DP 30186

FEET	INCHES	METRES
1	6	0.457
1	6 1/8	0.460
2	10	0.864
3	-	0.914
6	-	1.829
7	9 3/4	2.381
8	7	2.616
9	4 3/4	2.864
11	7	3.531
14	7 1/2	4.458
15	-	4.572
20	-	6.096
28	2 5/8	8.601
28	3 3/8	8.620
28	4 1/4	8.642
65	-	19.812
66	-	20.117
66	5 3/8	20.203
66	6 1/8	20.272
76	11	23.444
77	10 3/8	23.733
78	6 7/8	23.949
80	2 3/4	24.454
86	-	26.213
87	11	26.797
102	10	31.344
106	-	32.309
130	9	39.853
137	6 1/4	41.916
140	8 3/8	42.885
148	6 1/4	45.269
204	9	62.408
208	8 5/8	63.617
213	7 1/4	65.107
215	11 1/2	65.824
216	0 1/2	65.849
216	1 1/2	65.875
216	2 1/2	65.900
219	7	66.929
220	8 3/4	67.278
225	0 3/4	68.599
226	5 3/8	69.021
226	5 3/4	69.031
227	0 1/2	69.202
227	6 3/8	69.352
227	6 1/2	69.355
228	0 1/4	69.501
228	0 3/8	69.504
228	6 7/8	69.669
229	3 7/8	69.898
229	4 1/8	69.904
230	1 1/4	70.136
230	1 1/2	70.142

CONVERSION TABLE ADDED IN DEPARTMENT OF LANDS

DP 30186 CONTINUED

FEET	INCHES	METRES
230	10 3/4	70.377
230	11	70.383
231	8 1/4	70.618
231	8 1/2	70.625
232	-	70.714
232	5 3/8	70.850
232	5 1/2	70.853
232	6	70.866
232	6 1/4	70.872
232	10 3/4	70.987
233	3 7/8	71.117
233	4	71.120
233	4 1/8	71.123
233	4 1/4	71.126
233	7 3/8	71.206
233	7 1/2	71.209
233	9 5/8	71.263
233	9 3/4	71.266
234	1 5/8	71.364
234	3	71.399
234	3 1/8	71.403
249	7 1/2	76.086
259	6 3/4	79.115
269	4 1/2	82.105
269	7 1/2	82.182
304	9	92.888
305	1 1/4	92.996
305	1 1/2	93.002
334	3 1/4	101.886
504	10 1/2	153.886
569	2 3/4	173.501
583	9	177.927
788	7 1/2	240.373
808	7 1/2	246.469
811	9 1/4	247.428
821	1 1/4	250.273
823	4 1/2	250.965
838	8 1/8	255.629
921	7 1/4	280.909
928	11 3/8	283.143
930	9	283.693
931	11	284.048
932	7	284.251
934	4 1/2	284.798
935	2 1/8	285.052
936	2 1/4	285.350
938	-	285.902
938	6	286.055
939	5 1/2	286.448
941	9	287.045
945	-	288.036
948	3	289.027
951	5 3/8	290.001

PLAN

of ~~Vol.6822 Fol.138 &~~ subd^n. of part of the land in C/T. Vol. 1381 Fol^s. 132 & 133.

ey-County of Cumberland—

Scale: 300 feet to an inch

CONVERSION TABLE ADDED IN DEPARTMENT OF LANDS

DP 30186 CONTINUED

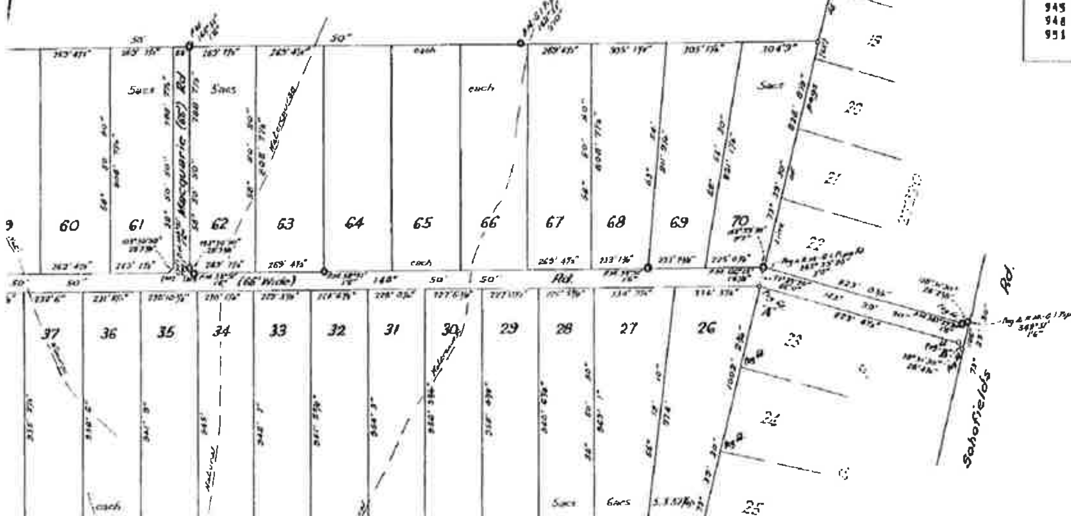
FEET	INCHES	METRES
954	3	290.855
956	3 3/4	291.484
958	4 3/8	292.110
960	6 7/8	292.783
963	1	293.548
974	-	296.875
1002	2 3/4	305.479
1006	8 5/8	306.848
1007	2	306.984
1007	6 3/4	307.105
1007	11 1/2	307.226
1008	4 3/8	307.350
1008	9	307.467
1118	2	340.817

AC	RD	P	HA
5	-	-	2.023
5	3	37 3/4	2.422
6	-	-	2.428

Deposited Plan No 30186 (E)

4th day of November 1959

Registrar General



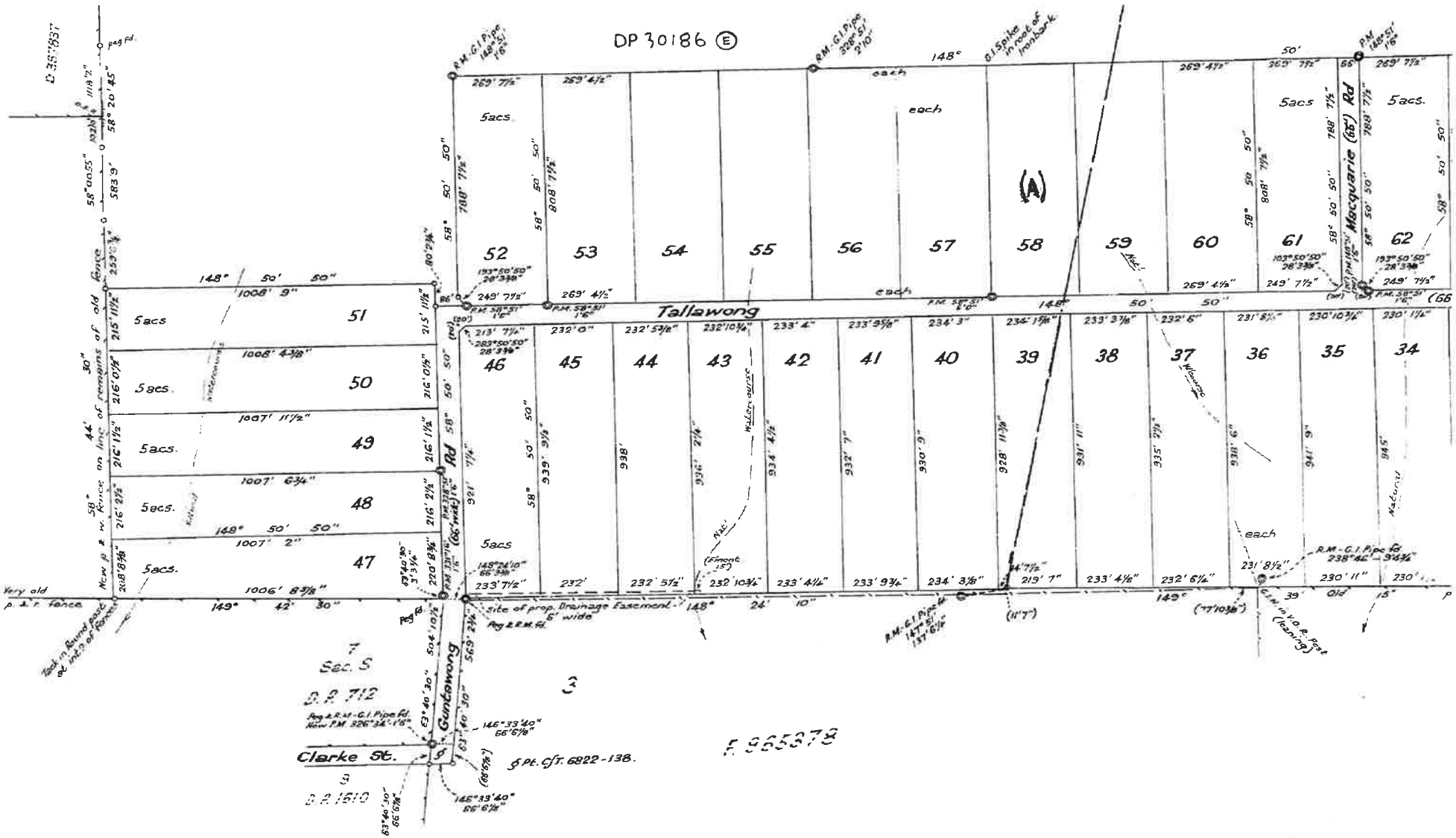
...ng and Macquarie Roads
...' wide as shown hereon in

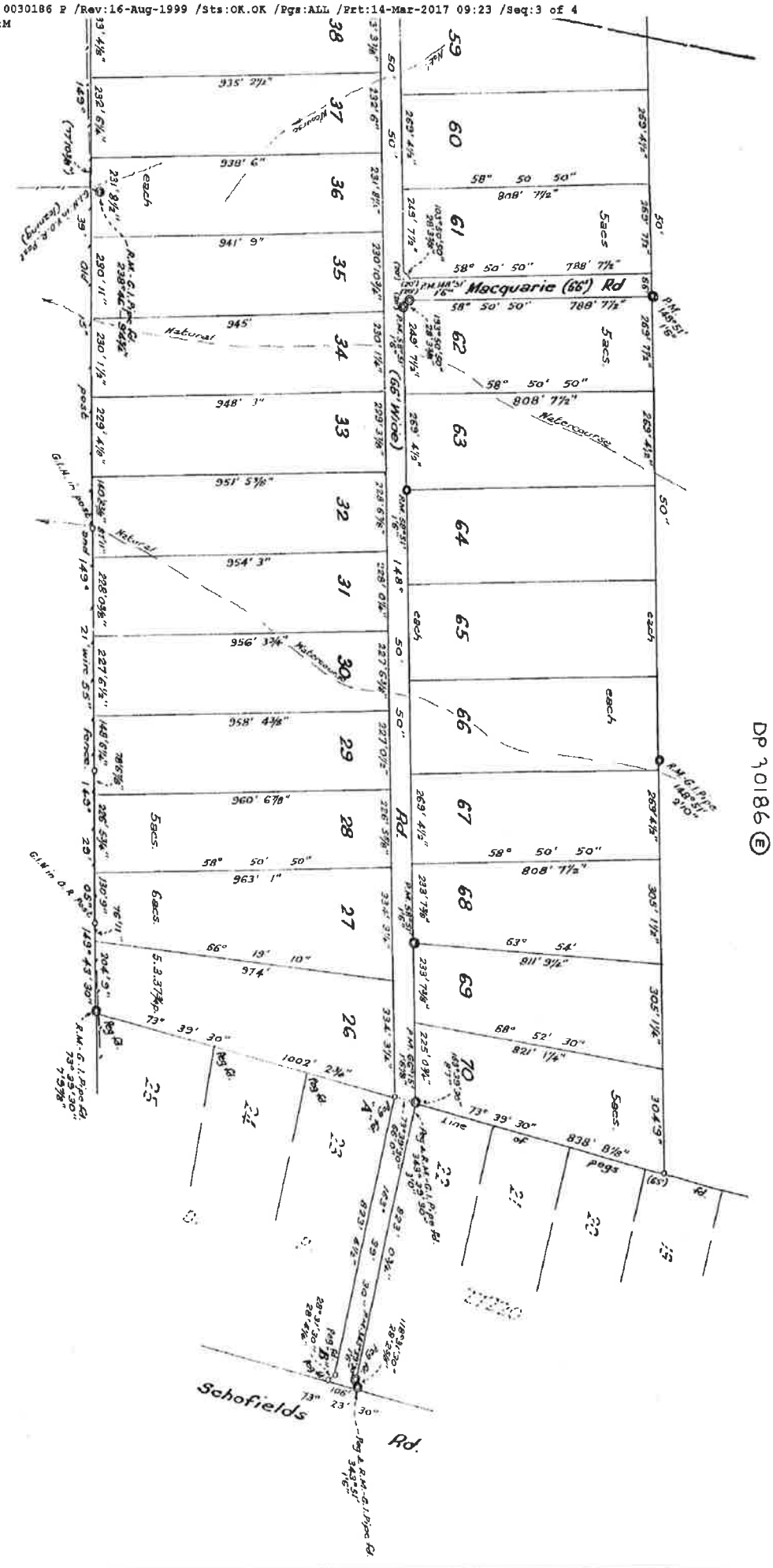
I, John Patrick O'Keefe of 16 George Street, Parramatta a surveyor registered under the Surveyors Act, 1929-1946 hereby certify that the survey represented in this plan is accurate and has been made by me in accordance with the Survey Practice Regulations, 1933, and was completed on 2nd May 1957 and I hereby solemnly and sincerely declare that the permanent marks as shown hereon have been placed.
And I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Oaths Act, 1900

(Signature) ....
Surveyor registered under Surveyors Act, 1929-1946

Subscribed and declared before me at .... this ..... day of 1957

Justice of the Peace





DP 70186 (E)

Historical Title

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
13/3/2017 11:01AM

FOLIO: 43/30186

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 8155 FOL 13

Recorded	Number	Type of Instrument	C.T. Issue
29/11/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
23/5/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
7/5/1990	Y959456	TRANSFER	EDITION 1
2/2/2006	AC85292	TRANSMISSION APPLICATION	EDITION 2
21/5/2014	AI593641	TRANSFER	
21/5/2014	AI593642	MORTGAGE	EDITION 3

*** END OF SEARCH ***

Rouse Hill PRINTED ON 13/3/2017

RP 13 STAMP DUTY [redacted]

LODGED -3 MAY 1990 1.25 p.m.

OFFICE USE ONLY Y959456

TRANSFER

REAL PROPERTY ACT, 1900

T CB 1 of 1 X $ 44. R 1/1

Torrens Title Reference	If Part Only, Delete Whole and Give Details	Location
NOW BEING whole OF LAND COMPRISED IN FOLIO 43/30186 & VOLUME 6155 FOLIO 13	WHOLE	SCHOFIELDS

DESCRIPTION OF LAND Note (a)

TRANSFEROR Note (b)

GERHARD RICHARD MOLLMER AND ~~BARBARA~~ ERIKA MOLLMER

ESTATE Note (c)

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

TRANSFEREE Note (d)

GERHARD RICHARD MOLLMER

OFFICE USE ONLY S

TENANCY Note (e)

~~as joint tenants/tenants in common~~

D

PRIOR ENCUMBRANCES Note (f)

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

DATE

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

EXECUTION Note (g)

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

..... Signature of Witness

ALAN FREEMAN Name of Witness (BLOCK LETTERS)

LAW CLERK 29 RAILWAY RD QUAKERS HILL Address and occupation of Witness

Erine Mollmer

Gerhard Mollmer Signature of Transferor

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

Note (g)

..... Signature of Witness

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

..... Address and occupation of Witness

..... Signature of Transferee

SOLICITOR FOR

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

640

LODGED BY Law - Associate

Ref:

Delivery Box Number 1048N

LOCATION OF DOCUMENTS	CT	OTHER
Herewith.		
In L.T.O. with		
Produced by		

OFFICE USE ONLY

Checked	Passed	REGISTERED - -19
EB 1/6		
Signed	Extra Fee	- 7 MAY 1990

Secondary Directions			
Delivery Directions	CT	1048N	

SAX

Form: 03TA
Release: 2.0
www.lands.nsw.gov.au

TRANSMISSIO APPLICATIO

New South Wales
Section 93 Real Property Act 1

AC85292C

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

STAMP DUTY — Office of State Revenue use only

Office of State Revenue NSW Treasury
Client No: 4163896 635
Duty: $10.00 Trans No: 3244609
Asst details:

(A) **LAND** — Torrens Title
43/30186

(B) **REGISTERED DEALING** — Number | Torrens Title

(C) **LODGED BY** — Document Collection Box 653A
Name, Address or DX and Telephone: Shaddick Baker Pannell 123478F
Reference: M' 11049
CODE: TA

(D) **DECEASED REGISTERED PROPRIETOR** — GERHARD MOELLMER

(E) **APPLICANT** — HAROLD RICHARD MOELLMER

(F) I, the applicant, being entitled as Executor of the will of the deceased registered proprietor (who died on 6 June 2005) pursuant to probate No. 119065/05 granted on 24 November 2005 to Harold Richard Moellmer (a certified copy of which is lodged herewith) apply to be registered as the proprietor of the estate or interest of the deceased registered proprietor in the abovementioned land.

DATE

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

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

Signature of witness: [signature]

Signature of Applicant: [signature]

Name of witness: DONALD J SHADDICK
Address of witness: 155 MARCH STREET RICHMOND

(H) **CONSENT OF EXECUTOR, ADMINISTRATOR OR TRUSTEE**

I, HAROLD RICHARD MOELLMER
executor of the will of the deceased registered proprietor, consent to this application.

Signature of witness: [signature]
Name of witness: DONALD J SHADDICK
Address of witness: RICHMOND

Signature of executor of the will: [signature]

ALL HANDWRITING MUST BE IN BLOCK CAPITALS.
Office use only—
Evidence sighted/sighted and returned: ....

DEPARTMENT OF LANDS
LAND AND PROPERTY INFORMATION DIVISION
0507

Title Search

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 43/30186

SEARCH DATE	TIME	EDITION NO	DATE
13/3/2017	11:01 AM	3	21/5/2014

LAND

LOT 43 IN DEPOSITED PLAN 30186
LOCAL GOVERNMENT AREA BLACKTOWN
PARISH OF GIDLEY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP30186

FIRST SCHEDULE

SIKH GRAMMAR SCHOOL AUSTRALIA (T AI593641)

SECOND SCHEDULE (5 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 F901549 RIGHT OF CARRIAGEWAY APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE LAND SHOWN SO BURDENED IN VOL 6736 FOL 171
3 H500894 EASEMENT FOR DRAINAGE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
4 M411318 COVENANT
5 AI593642 MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Rouse Hill PRINTED ON 13/3/2017

APPENDIX 4

AERIAL PHOTOGRAPHS

APPENDIX 5

DANGEROUS GOODS SEARCH

NSW GOVERNMENT | SafeWork NSW

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

Our Ref: D17/099667
Your Ref: Amy Dorrington

24 March 2017

Attention: Amy Dorrington
DLA Environmental
Unit 3, 38 Leighton Place
HORNSBY NSW 2077

Dear Ms Dorrington

RE SITE: 161 Tallawong Road, Rouse Hill NSW

I refer to your site search request received by SafeWork NSW on 20 March 2017 requesting information on Storage of Hazardous Chemicals for the above site.

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

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

Yours sincerely

Customer Service Officer
Customer Experience - Operations
SafeWork NSW

APPENDIX 6

NATA CERTIFIED ANALYTICAL RESULTS

12 Ashley Street, Chatswood, NSW 2067
tel: +61 2 9910 6200

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

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

CERTIFICATE OF ANALYSIS 163174

Client:

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

Attention: Russell

Sample log in details:

Your Reference:	**DL4069 , Rouse Hill Tallawong Rd**
No. of samples:	7 soil 1 water
Date samples received / completed instructions received	08/03/17 / 08/03/17

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:	15/03/17 / 15/03/17
Date of Preliminary Report:	Not Issued

NATA accreditation number 2901. This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025 - Testing **Tests not covered by NATA are denoted with *.**

Results Approved By:

David Springer
General Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	163174-1	163174-2	163174-3	163174-4	163174-5
Your Reference	---------- -	F1	F1a	F2	S1	S2
Date Sampled	----------	7/03/2017	7/03/2017	7/03/2017	7/03/2017	7/03/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/03/2017	09/03/2017	09/03/2017	09/03/2017	09/03/2017
Date analysed	-	09/03/2017	09/03/2017	09/03/2017	09/03/2017	09/03/2017
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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	73	76	74	73	71

vTRH(C6-C10)/BTEXN in Soil			
Our Reference:	UNITS	163174-6	163174-7
Your Reference	---------- -	S3	S4
Date Sampled	----------	7/03/2017	7/03/2017
Type of sample		Soil	Soil
Date extracted	-	09/03/2017	09/03/2017
Date analysed	-	09/03/2017	09/03/2017
TRHC$_6$ - C$_9$	mg/kg	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	68	73

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	163174-1	163174-2	163174-3	163174-4	163174-5
Your Reference	---------- -	F1	F1a	F2	S1	S2
Date Sampled	----------	7/03/2017	7/03/2017	7/03/2017	7/03/2017	7/03/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/03/2017	09/03/2017	09/03/2017	09/03/2017	09/03/2017
Date analysed	-	10/03/2017	10/03/2017	10/03/2017	10/03/2017	10/03/2017
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
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	75	76	94	93	93

svTRH (C10-C40) in Soil			
Our Reference:	UNITS	163174-6	163174-7
Your Reference	---------- -	S3	S4
Date Sampled	----------	7/03/2017	7/03/2017
Type of sample		Soil	Soil
Date extracted	-	09/03/2017	09/03/2017
Date analysed	-	10/03/2017	10/03/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	94	92

PAHs in Soil Our Reference: Your Reference	UNITS ----------	163174-1 F1	163174-2 F1a	163174-3 F2	163174-4 S1	163174-5 S2
Date Sampled	----------	7/03/2017	7/03/2017	7/03/2017	7/03/2017	7/03/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/03/2017	09/03/2017	09/03/2017	09/03/2017	09/03/2017
Date analysed	-	09/03/2017	09/03/2017	09/03/2017	09/03/2017	09/03/2017
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	0.3	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	0.7	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	0.7	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.3	<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	0.09	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	2.9	<0.05
Surrogate p-Terphenyl-d14	%	102	118	83	98	83

PAHs in Soil			
Our Reference:	UNITS	163174-6	163174-7
Your Reference	----------	S3	S4
	-		
Date Sampled	----------	7/03/2017	7/03/2017
Type of sample		Soil	Soil
Date extracted	-	09/03/2017	09/03/2017
Date analysed	-	09/03/2017	09/03/2017
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Total +ve PAH's	mg/kg	<0.05	<0.05
Surrogate p-Terphenyl-d14	%	90	92

Organochlorine Pesticides in soil					
Our Reference:	UNITS	163174-1	163174-2	163174-3	163174-5
Your Reference	----------	F1	F1a	F2	S2
Date Sampled	- ----------	7/03/2017	7/03/2017	7/03/2017	7/03/2017
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	09/03/2017	09/03/2017	09/03/2017	09/03/2017
Date analysed	-	09/03/2017	09/03/2017	09/03/2017	09/03/2017
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	94	95	88

Organophosphorus Pesticides					
Our Reference:	UNITS	163174-1	163174-2	163174-3	163174-5
Your Reference	---------- -	F1	F1a	F2	S2
Date Sampled	----------	7/03/2017	7/03/2017	7/03/2017	7/03/2017
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	09/03/2017	09/03/2017	09/03/2017	09/03/2017
Date analysed	-	09/03/2017	09/03/2017	09/03/2017	09/03/2017
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	%	98	94	95	88

PCBs in Soil					
Our Reference:	UNITS	163174-1	163174-2	163174-3	163174-5
Your Reference	----------	F1	F1a	F2	S2
	-				
Date Sampled	----------	7/03/2017	7/03/2017	7/03/2017	7/03/2017
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	09/03/2017	09/03/2017	09/03/2017	09/03/2017
Date analysed	-	09/03/2017	09/03/2017	09/03/2017	09/03/2017
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
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	98	94	95	88

Acid Extractable metals in soil						
Our Reference:	UNITS	163174-1	163174-2	163174-3	163174-4	163174-5
Your Reference	----------	F1	F1a	F2	S1	S2
Date Sampled	- ----------	7/03/2017	7/03/2017	7/03/2017	7/03/2017	7/03/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	09/03/2017	09/03/2017	09/03/2017	09/03/2017	09/03/2017
Date analysed	-	09/03/2017	09/03/2017	09/03/2017	09/03/2017	09/03/2017
Arsenic	mg/kg	9	8	8	<4	9
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	15	12	13	14	10
Copper	mg/kg	9	11	9	19	19
Lead	mg/kg	23	20	19	27	23
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	4	5	7	6
Zinc	mg/kg	27	24	26	48	68

Acid Extractable metals in soil			
Our Reference:	UNITS	163174-6	163174-7
Your Reference	----------	S3	S4
Date Sampled	- ----------	7/03/2017	7/03/2017
Type of sample		Soil	Soil
Date prepared	-	09/03/2017	09/03/2017
Date analysed	-	09/03/2017	09/03/2017
Arsenic	mg/kg	7	10
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	11	17
Copper	mg/kg	15	8
Lead	mg/kg	42	16
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	4	8
Zinc	mg/kg	110	35

Moisture Our Reference: Your Reference	UNITS ----------	163174-1 F1	163174-2 F1a	163174-3 F2	163174-4 S1	163174-5 S2
	-					
Date Sampled	----------	7/03/2017	7/03/2017	7/03/2017	7/03/2017	7/03/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	09/03/2017	09/03/2017	09/03/2017	09/03/2017	09/03/2017
Date analysed	-	10/03/2017	10/03/2017	10/03/2017	10/03/2017	10/03/2017
Moisture	%	16	14	12	13	23

Moisture Our Reference: Your Reference	UNITS ----------	163174-6 S3	163174-7 S4
	-		
Date Sampled	----------	7/03/2017	7/03/2017
Type of sample		Soil	Soil
Date prepared	-	09/03/2017	09/03/2017
Date analysed	-	10/03/2017	10/03/2017
Moisture	%	30	20

HM in water - dissolved		
Our Reference:	UNITS	163174-8
Your Reference	---------- -	W1
Date Sampled	----------	7/03/2017
Type of sample		water
Date prepared	-	08/03/2017
Date analysed	-	09/03/2017
Arsenic-Dissolved	µg/L	1
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	<1
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	<1
Zinc-Dissolved	µg/L	<1

Miscellaneous Inorganics		
Our Reference:	UNITS	163174-8
Your Reference	----------	W1
	-	
Date Sampled	----------	7/03/2017
Type of sample		water
Date prepared	-	08/03/2017
Date analysed	-	08/03/2017
pH	pH Units	7.0
Electrical Conductivity	µS/cm	250
Total Suspended Solids	mg/L	20
Total Nitrogen in water	mg/L	2.2

Metals in Waters - Acid extractable		
Our Reference:	UNITS	163174-8
Your Reference	---------- -	W1
Date Sampled	----------	7/03/2017
Type of sample		water
Date prepared	-	09/03/2017
Date analysed	-	09/03/2017
Phosphorus - Total	mg/L	0.1

Microbiologocal Testing		
Our Reference:	UNITS	163174-8
Your Reference	---------- -	W1
Date Sampled	----------	7/03/2017
Type of sample		water
Date of testing	-	09/03/2017
Faecal Coliforms	cfu/100mL	2,400

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.
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-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. 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-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-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.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.

Method ID	Methodology Summary
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-022	Determination of various metals by ICP-MS.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.
Inorg-055/062	Total Nitrogen - Calculation sum of TKN and oxidised Nitrogen.
Ext-008	Subcontracted to Sonic Food & Water Testing. NATA Accreditation No. 4034.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD
Date extracted	-			09/03/2017	163174-1	09/03/2017 || 09/03/2017
Date analysed	-			09/03/2017	163174-1	09/03/2017 || 09/03/2017
TRHC6 - C9	mg/kg	25	Org-016	<25	163174-1	<25 || <25
TRHC6 - C10	mg/kg	25	Org-016	<25	163174-1	<25 || <25
Benzene	mg/kg	0.2	Org-016	<0.2	163174-1	<0.2 || <0.2
Toluene	mg/kg	0.5	Org-016	<0.5	163174-1	<0.5 || <0.5
Ethylbenzene	mg/kg	1	Org-016	<1	163174-1	<1 || <1
m+p-xylene	mg/kg	2	Org-016	<2	163174-1	<2 || <2
o-Xylene	mg/kg	1	Org-016	<1	163174-1	<1 || <1
naphthalene	mg/kg	1	Org-014	<1	163174-1	<1 || <1
Surrogate aaa-Trifluorotoluene	%		Org-016	120	163174-1	73 || 75 || RPD: 3

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD
Date extracted	-			09/03/2017	163174-1	09/03/2017 || 09/03/2017
Date analysed	-			09/03/2017	163174-1	10/03/2017 || 10/03/2017
TRHC10 - C14	mg/kg	50	Org-003	<50	163174-1	<50 || <50
TRHC15 - C28	mg/kg	100	Org-003	<100	163174-1	<100 || <100
TRHC29 - C36	mg/kg	100	Org-003	<100	163174-1	<100 || <100
TRH>C10-C16	mg/kg	50	Org-003	<50	163174-1	<50 || <50
TRH>C16-C34	mg/kg	100	Org-003	<100	163174-1	<100 || <100
TRH>C34-C40	mg/kg	100	Org-003	<100	163174-1	<100 || <100
Surrogate o-Terphenyl	%		Org-003	80	163174-1	75 || 75 || RPD: 0

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD
Date extracted	-			09/03/2017	163174-1	09/03/2017 || 09/03/2017
Date analysed	-			09/03/2017	163174-1	09/03/2017 || 09/03/2017
Naphthalene	mg/kg	0.1	Org-012	<0.1	163174-1	<0.1 || <0.1
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	163174-1	<0.1 || <0.1
Acenaphthene	mg/kg	0.1	Org-012	<0.1	163174-1	<0.1 || <0.1
Fluorene	mg/kg	0.1	Org-012	<0.1	163174-1	<0.1 || <0.1
Phenanthrene	mg/kg	0.1	Org-012	<0.1	163174-1	<0.1 || <0.1
Anthracene	mg/kg	0.1	Org-012	<0.1	163174-1	<0.1 || <0.1
Fluoranthene	mg/kg	0.1	Org-012	<0.1	163174-1	<0.1 || <0.1
Pyrene	mg/kg	0.1	Org-012	<0.1	163174-1	<0.1 || <0.1
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	163174-1	<0.1 || <0.1
Chrysene	mg/kg	0.1	Org-012	<0.1	163174-1	<0.1 || <0.1
Benzo(b,j +k)fluoranthene	mg/kg	0.2	Org-012	<0.2	163174-1	<0.2 || <0.2

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	163174-1	<0.05 || <0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	163174-1	<0.1 || <0.1
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	163174-1	<0.1 || <0.1
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	163174-1	<0.1 || <0.1
Surrogate p-Terphenyl-d14	%		Org-012	109	163174-1	102 || 86 || RPD: 17
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD
Date extracted	-			09/03/2017	163174-1	09/03/2017 || 09/03/2017
Date analysed	-			09/03/2017	163174-1	09/03/2017 || 09/03/2017
HCB	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
alpha-BHC	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
gamma-BHC	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
beta-BHC	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
Heptachlor	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
delta-BHC	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
Aldrin	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
Endosulfan I	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
pp-DDE	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
Dieldrin	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
Endrin	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
pp-DDD	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
Endosulfan II	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
pp-DDT	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
Methoxychlor	mg/kg	0.1	Org-005	<0.1	163174-1	<0.1 || <0.1
Surrogate TCMX	%		Org-005	97	163174-1	98 || 93 || RPD: 5

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD
Date extracted	-			09/03/2017	163174-1	09/03/2017 || 09/03/2017
Date analysed	-			09/03/2017	163174-1	09/03/2017 || 09/03/2017
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	163174-1	<0.1 || <0.1
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	163174-1	<0.1 || <0.1
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	163174-1	<0.1 || <0.1
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	163174-1	<0.1 || <0.1
Diazinon	mg/kg	0.1	Org-008	<0.1	163174-1	<0.1 || <0.1
Dichlorvos	mg/kg	0.1	Org-008	<0.1	163174-1	<0.1 || <0.1
Dimethoate	mg/kg	0.1	Org-008	<0.1	163174-1	<0.1 || <0.1
Ethion	mg/kg	0.1	Org-008	<0.1	163174-1	<0.1 || <0.1
Fenitrothion	mg/kg	0.1	Org-008	<0.1	163174-1	<0.1 || <0.1
Malathion	mg/kg	0.1	Org-008	<0.1	163174-1	<0.1 || <0.1
Parathion	mg/kg	0.1	Org-008	<0.1	163174-1	<0.1 || <0.1
Ronnel	mg/kg	0.1	Org-008	<0.1	163174-1	<0.1 || <0.1
Surrogate TCMX	%		Org-008	97	163174-1	98 || 93 || RPD: 5

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD
Date extracted	-			09/03/2017	163174-1	09/03/2017 || 09/03/2017
Date analysed	-			09/03/2017	163174-1	09/03/2017 || 09/03/2017
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	163174-1	<0.1 || <0.1
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	163174-1	<0.1 || <0.1
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	163174-1	<0.1 || <0.1
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	163174-1	<0.1 || <0.1
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	163174-1	<0.1 || <0.1
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	163174-1	<0.1 || <0.1
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	163174-1	<0.1 || <0.1
Surrogate TCLMX	%		Org-006	97	163174-1	98 || 93 || RPD: 5

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD
Date prepared	-			09/03/2017	163174-1	09/03/2017 || 09/03/2017
Date analysed	-			09/03/2017	163174-1	09/03/2017 || 09/03/2017
Arsenic	mg/kg	4	Metals-020	<4	163174-1	9 || 8 || RPD: 12
Cadmium	mg/kg	0.4	Metals-020	<0.4	163174-1	<0.4 || <0.4
Chromium	mg/kg	1	Metals-020	<1	163174-1	15 || 13 || RPD: 14
Copper	mg/kg	1	Metals-020	<1	163174-1	9 || 12 || RPD: 29
Lead	mg/kg	1	Metals-020	<1	163174-1	23 || 23 || RPD: 0
Mercury	mg/kg	0.1	Metals-021	<0.1	163174-1	<0.1 || <0.1
Nickel	mg/kg	1	Metals-020	<1	163174-1	4 || 4 || RPD: 0
Zinc	mg/kg	1	Metals-020	<1	163174-1	27 || 28 || RPD: 4

QUALITY CONTROL HM in water - dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			09/03/2017	[NT]	[NT]	LCS-W3	09/03/2017
Date analysed	-			09/03/2017	[NT]	[NT]	LCS-W3	09/03/2017
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W3	102%
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	LCS-W3	105%
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W3	103%
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W3	102%
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W3	103%
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	LCS-W3	102%
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W3	103%
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W3	102%

QUALITY CONTROL Miscellaneous Inorganics	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			08/03/2017	[NT]	[NT]	LCS-W1	08/03/2017
Date analysed	-			08/03/2017	[NT]	[NT]	LCS-W1	08/03/2017
pH	pH Units		Inorg-001	[NT]	[NT]	[NT]	LCS-W1	102%
Electrical Conductivity	µS/cm	1	Inorg-002	<1	[NT]	[NT]	LCS-W1	103%
Total Suspended Solids	mg/L	5	Inorg-019	<5	[NT]	[NT]	LCS-W1	94%
Total Nitrogen in water	mg/L	0.1	Inorg-055/062	<0.1	[NT]	[NT]	LCS-W1	95%

QUALITY CONTROL Metals in Waters - Acid extractable	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			09/03/2017	[NT]	[NT]	LCS-W2	09/03/2017
Date analysed	-			09/03/2017	[NT]	[NT]	LCS-W2	09/03/2017
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	LCS-W2	101%

QUALITY CONTROL Microbiologocal Testing	UNITS	PQL	METHOD	Blank
Date of testing	-			[NT]
Faecal Coliforms	cfu/100 mL	1	Ext-008	[NT]

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	LCS-2	09/03/2017
Date analysed	-	[NT]	[NT]	LCS-2	09/03/2017
TRHC$_6$ - C$_9$	mg/kg	[NT]	[NT]	LCS-2	93%
TRHC$_6$ - C$_{10}$	mg/kg	[NT]	[NT]	LCS-2	93%
Benzene	mg/kg	[NT]	[NT]	LCS-2	88%
Toluene	mg/kg	[NT]	[NT]	LCS-2	89%
Ethylbenzene	mg/kg	[NT]	[NT]	LCS-2	95%
m+p-xylene	mg/kg	[NT]	[NT]	LCS-2	96%
o-Xylene	mg/kg	[NT]	[NT]	LCS-2	95%
naphthalene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	[NT]	[NT]	LCS-2	123%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	LCS-2	09/03/2017
Date analysed	-	[NT]	[NT]	LCS-2	09/03/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	[NT]	[NT]	LCS-2	98%
TRHC$_{15}$ - C$_{28}$	mg/kg	[NT]	[NT]	LCS-2	97%
TRHC$_{29}$ - C$_{36}$	mg/kg	[NT]	[NT]	LCS-2	70%
TRH>C$_{10}$-C$_{16}$	mg/kg	[NT]	[NT]	LCS-2	98%
TRH>C$_{16}$-C$_{34}$	mg/kg	[NT]	[NT]	LCS-2	97%
TRH>C$_{34}$-C$_{40}$	mg/kg	[NT]	[NT]	LCS-2	70%
Surrogate o-Terphenyl	%	[NT]	[NT]	LCS-2	81%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	LCS-2	09/03/2017
Date analysed	-	[NT]	[NT]	LCS-2	09/03/2017
Naphthalene	mg/kg	[NT]	[NT]	LCS-2	94%
Acenaphthylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	[NT]	[NT]	LCS-2	98%
Phenanthrene	mg/kg	[NT]	[NT]	LCS-2	110%
Anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	[NT]	[NT]	LCS-2	97%
Pyrene	mg/kg	[NT]	[NT]	LCS-2	88%
Benzo(a)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	[NT]	[NT]	LCS-2	92%
Benzo(b,j+k)fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	[NT]	[NT]	LCS-2	70%
Indeno(1,2,3-c,d)pyrene	mg/kg	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	[NT]	[NT]	LCS-2	99%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	LCS-2	09/03/2017
Date analysed	-	[NT]	[NT]	LCS-2	09/03/2017
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	LCS-2	103%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	LCS-2	97%
Heptachlor	mg/kg	[NT]	[NT]	LCS-2	96%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	LCS-2	94%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	LCS-2	91%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	LCS-2	91%
Dieldrin	mg/kg	[NT]	[NT]	LCS-2	104%
Endrin	mg/kg	[NT]	[NT]	LCS-2	98%
pp-DDD	mg/kg	[NT]	[NT]	LCS-2	93%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	LCS-2	87%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	LCS-2	108%
QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	LCS-2	09/03/2017
Date analysed	-	[NT]	[NT]	LCS-2	09/03/2017
Azinphos-methyl (Guthion)	mg/kg	[NT]	[NT]	[NR]	[NR]
Bromophos-ethyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos	mg/kg	[NT]	[NT]	LCS-2	94%
Chlorpyriphos-methyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Diazinon	mg/kg	[NT]	[NT]	[NR]	[NR]
Dichlorvos	mg/kg	[NT]	[NT]	LCS-2	87%
Dimethoate	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	[NT]	[NT]	LCS-2	88%
Fenitrothion	mg/kg	[NT]	[NT]	LCS-2	119%
Malathion	mg/kg	[NT]	[NT]	LCS-2	81%
Parathion	mg/kg	[NT]	[NT]	LCS-2	101%
Ronnel	mg/kg	[NT]	[NT]	LCS-2	87%
Surrogate TCMX	%	[NT]	[NT]	LCS-2	101%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	LCS-2	09/03/2017
Date analysed	-	[NT]	[NT]	LCS-2	09/03/2017
Aroclor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	[NT]	[NT]	LCS-2	100%
Aroclor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	LCS-2	101%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	LCS-1	09/03/2017
Date analysed	-	[NT]	[NT]	LCS-1	09/03/2017
Arsenic	mg/kg	[NT]	[NT]	LCS-1	104%
Cadmium	mg/kg	[NT]	[NT]	LCS-1	94%
Chromium	mg/kg	[NT]	[NT]	LCS-1	100%
Copper	mg/kg	[NT]	[NT]	LCS-1	99%
Lead	mg/kg	[NT]	[NT]	LCS-1	95%
Mercury	mg/kg	[NT]	[NT]	LCS-1	101%
Nickel	mg/kg	[NT]	[NT]	LCS-1	91%
Zinc	mg/kg	[NT]	[NT]	LCS-1	93%

QUALITY CONTROL Miscellaneous Inorganics	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date prepared	-	163174-8	08/03/2017 || 08/03/2017
Date analysed	-	163174-8	08/03/2017 || 08/03/2017
Total Suspended Solids	mg/L	163174-8	20 || 23 || RPD: 14

Report Comments:

Total metals: no preserved sample was received, therefore
analysis was conducted from the unpreserved sample bottle.
Note: there is a possibility some elements may be underestimated.

Dissolved Metals: no filtered, preserved sample was received, therefore
the unpreserved sample was filtered through 0.45um filter at the lab.
Note: there is a possibility some elements may be underestimated.

Faecal Coliforms analysed by Sonic Food & Water Testing. Report No.W1704746.

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	PQL: Practical Quantitation Limit	NT: Not tested
NR: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

CHAIN OF CUSTODY - Client

ENVIROLAB GROUP - National phone number 1300 42 43 44

Sydney Lab - Envirolab Services
12 Ashley St, Chatswood, NSW 2067
Ph 02 9910 6200 / sydney@envirolab.com.au

Combo1=TRH/BTEX/Pb
Combo2=TRH/BTEX/PAH/Pb
Combo3=TRH/BTEX/PAH/Met
Combo4=TRH/BTEX/PAH/Met/Phen
Combo5=TRH/BTEX/PAH/OC/PCB/Met
Combo6=TRH/BTEX/PAH/OC/OP/PCB/Met
Combo7=TRH/BTEX/PAH/OC/PCB/Met/Phen
Combo8=TRH/BTEX/PAH/OC/OP/PCB/Met/Phen
Combo9=TRH/BTEX/PAH/OC/PCB/Met/Phen/CN
Combo10=TRH/BTEX/PAH/OC/OP/PCB/Met/Phen/CN
Combo11=TRH/BTEX/PAH/OC/PCB/12met/Phen/CN
Combo12=TRH/BTEX/PAH/OC/PCB/Met/TCLP-PAH ,6 Met
Combo13=TRH/BTEX/PAH/OC/OP/PCB/Met/TCLP-PAH ,6Met

A Combo with an `A' indicates Asbestos is also needed.

Client: DLA

Contact Person:

Project Mgr: JAY

Sampler:

Address: Unit 3/38 Leighton Place Hornsby NSW

Phone: **Mob:**

Email: sydney@dlaenvironmental.com.au

Client Project Name / Number / Site etc (ie report title): Rouse Hill_ Tallawong DL 4069

PO No.: RoVPSI

Envirolab Quote No. :

Date results required:

Or choose: standard / same day / 1 day / 2 day / 3 day

Note: Inform lab in advance if urgent turnaround is required - surcharges apply

Report format: esdat / equis /

Lab Comments:

Sample information					Tests Required														Comments
Envirolab Sample ID	Client Sample ID or information	Depth	Date sampled	Type of sample	Combo 3	Combo 6	TNTP	Faecal Col.	PH/EC	TSS	MB Dis.								Provide as much information about the sample as you can
1	F1		7/3/17	Soil	~~X~~	X													
2	F1a				~~X~~	X													
3	F2					X													
4	S1				X														
5	S2					X													
6	S3				X														
7	S4				X														
P	W1			Water			X	X	X	X	X								

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 163174

Date Received: 08.03.17
Time Received: 15:00
Received by: N.R
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished by (Company): DLA
Print Name: Russell
Date & Time: 7/3/17 4:00.
Signature:

Received by (Company): ELS
Print Name: Nicholas Robert ~~ELS~~
Date & Time: 08.03.17 15:00
Signature:

Lab use only:
Samples Received: Cool or Ambient (circle one)
Temperature Received at: (if applicable)
Transported by: Hand delivered / courier

White - Lab copy / Blue - Client copy / Pink - Retain in Book

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref: ASET55504 / 58684 / 1 - 7
Your ref: DL4069 - Rouse Hill - Tallawong Road
NATA Accreditation No: 14484

9 March 2017

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

Accredited for compliance with ISO/IEC 17025.

Attn: Mr Russell Jarman

Dear Russell

Asbestos Identification
This report presents the results of seven samples, forwarded by DLA Environmental Services Pty Ltd on 8 March 2017, for analysis for asbestos.

1.Introduction: Seven samples forwarded were examined and analysed for the presence of asbestos.

2. Methods: The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Australian Standard AS 4964 - 2004 and Safer Environment Method 1 as the supplementary work instruction) (Qualitative Analysis only).**

3. Results:

Sample No. 1. ASET55504 / 58684 / 1. FP1 - FP1.
Approx dimensions 10.0 cm x 10.0 cm x 4.6 cm
The sample consisted of a mixture of soil, stones, plant matter, fragments of plaster, cement, brick, paint flakes, corroded metal and pieces of glass.
No asbestos detected.

Sample No. 2. ASET55504 / 58684 / 2. FP2 - FP2.
Approx dimensions 11.0 cm x 10.0 cm x 4.0 cm
The sample consisted of a mixture of soil, stones, plant matter, fragments of plaster, cement, brick, paint flakes, corroded metal and pieces of glass.
No asbestos detected.

Sample No. 3. ASET55504 / 58684 / 3. FP3 - FP3.
Approx dimensions 9.0 cm x 9.0 cm x 5.5 cm
The sample consisted of a mixture of soil, stones, plant matter, fragments of plaster, cement, brick, corroded metal and pieces of glass.
No asbestos detected.

Sample No. 4. ASET55504 / 58684 / 4. FP4 - FP4.
Approx dimensions 10.0 cm x 10.0 cm x 5.0 cm
The sample consisted of a mixture of soil, stones, plant matter, fragments of plaster, cement, brick and bitumen.
No asbestos detected.

Sample No. 5. ASET55504 / 58684 / 5. S1 - S1 - PSI.
Approx dimensions 9.0 cm x 9.0 cm x 5.0 cm
The sample consisted of a mixture of soil, stones, shale, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 6. ASET55504 / 58684 / 6. F1 - F1 - PSI.
Approx dimensions 10.0 cm x 10.0 cm x 4.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster and cement.
No asbestos detected.

Sample No. 7. ASET55504 / 58684 / 7. F2 - F2 - PSI.
Approx dimensions 9.0 cm x 9.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster and cement.
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. Results indicating "No asbestos detected" indicates a reporting limit specified in AS4964 -2004 which is 0.1g/ Kg (0.01%). Any amounts detected at assumed lower level than that would be reported, however those assumed lower levels may be treated as "No asbestos detected" as specified and recommended by AS4964-2004. Trace / respirable level asbestos will be reported only when detected.

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD
Suite 710/ 90 George Street Hornsby NSW 2077 PO Box 1644 Hornsby Westfield NSW 1635
Ph: 02 9987 2183 Fax: 02 9987 2151 Email: aset@bigpond.net.au

ASET JOB NO: ASE155504/58684/107

Company Name & Address:
DLA Environmental Services
3/38 Leighton Place
Hornsby NSW 2077

Contact Ph: 9476 1765

Contact Name: Russell

Job No: DL4069

Project Name: Rouse Hill - Tallawong Rd

Email Results to: sydney@dlaenvironmental.com.au

	Sample ID	Date	Matrix	Container	Sample Location	SMF	Asbestos in Soil/ Dust	Asbestos in material	Asbestos Fibre Count	Asbestos in Water	Asbestos W/W%	
1	FP1	7/3/17	Soil	Bag	FP1		X					
2	FP2	"	"	"	FP2		"					
3	FP3	"	"	"	FP3		"					
4	FP4	"	"	"	FP4		"					
5	S1	"	"	"	S1 - PSI		"					
6	F1	"	"	"	F1 - PSI		"					
7	F2	"	"	"	F2 - PSI		"					

RECEIVED
0 8 MAR 2017
BY: SW

Relinquished By: DLA
Date & Time: 7/3/17
Signature:

Received By: Josh
Date & Time: 8/3 DPM
Signature:

Turn around time				Method of Shipment
24 Hrs		3 Days		HD
48 Hrs		STD	X	

APPENDIX 7

DATA SUMMARY TABLES

Sample ID	Depth (m)	Date	Chemical Report	Soil Desciption	Comment	NEPM (NEPC, 2013) Residential A Land Use Criteria (mg/kg) Asbestos
F1	0.10	07-Mar-17	EnvLab 163174	Brown clay fill		ND
F2	0.10	07-Mar-17	EnvLab 163174	Brown clay fill		ND
S1	0.10	07-Mar-17	EnvLab 163174	Loam topsoil		ND
S2	0.10	07-Mar-17	EnvLab 163174	Loam topsoil		-
S3	0.10	07-Mar-17	EnvLab 163174	Loam topsoil		-
S4	0.10	07-Mar-17	EnvLab 163174	Loam topsoil		-
INTRA-LABORATORY DUPLICATES						
F1a	0.10	07-Mar-17	EnvLab 163174	Brown clay fill		
STATISTICAL ANALYSIS						
Min						-
Max						-
Avg						-

* Depth relates to Depth Below Surface Level - Not Tested ND = Not Detected Above Laboratory LOR NL = Not Limiting **Bold** = Detected

				HSL: 0.5, ESL: 50	HSL: 160, ESL: 85	HSL: 55, ESL: 70	HSL: 10, ESL: 105	3	C6-C10 HSL: 45, ESL: 180, ML: 700	>C10-C16 HSL: 110, ESL: 120, ML: 1,000	>C16-C34 HSL: NL, ESL: 300, ML: 2,500
Sample ID	Depth (m)	Date	Chemical Report	BTEX - Sandy soils					TRH - Sandy soils		
				Benz	Toluen	EthylBe	Xylene	Naph	F1	F2	F3
F1	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	ND	ND	ND	ND	ND
F2	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	ND	ND	ND	ND	ND
S1	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	ND	ND	ND	ND	ND
S2	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	ND	ND	ND	ND	ND
S3	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	ND	ND	ND	ND	ND
S4	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	ND	ND	ND	ND	ND
INTRA-LABORATORY DUPLICATES											
F1a	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	ND	ND	ND	ND	ND
STATISTICAL ANALYSIS											
Min				NA	NA	NA	NA	NA	NA	NA	NA
Max				NA	NA	NA	NA	NA	NA	NA	NA
Avg				NA	NA	NA	NA	NA	NA	NA	NA

* Depth relates to Depth Below Surface Level - Not Tested Above Laboratory LOR RED = Exceeds HIL Criteria

				>C34-C40 HSL: NL, ESL: 2,800, ML: 10,000	HIL: 3, ESL: 0.7	300	DDT+DDD+DDE 240	Aldrin+Dieldrin 6	Chlordane 50	Endosulfan 270	Endrin 10	Heptachlor 6
Sample ID	Depth (m)	Date	Chemical Report		PAH	PAH	Pesticides					
				F4	BaP TEQ	Total	OC					
F1	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	ND	ND	ND	ND	ND	ND
F2	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	ND	ND	ND	ND	ND	ND
S1	0.10	07-Mar-17	EnvLab 163174	ND	ND	**2.9**	-	-	-	-	-	-
S2	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	ND	ND	ND	ND	ND	ND
S3	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	-	-	-	-	-	-
S4	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	-	-	-	-	-	-
INTRA-LABORATORY DUPLICATES												
F1a	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	ND	ND	ND	ND	ND	ND
STATISTICAL ANALYSIS												
Min				NA	NA	ND	NA	NA	NA	NA	NA	NA
Max				NA	NA	2.9	NA	NA	NA	NA	NA	NA
Avg				NA	NA	0.5	NA	NA	NA	NA	NA	NA

* Depth relates to Depth Below Surface Level - Not Tested

* Depth relates to Depth Below Surface Level - Not Tested ND = Not Det

				HCB 10	Methoxychlor 300		1	100	20	100	6,000	300	40
Sample ID	Depth (m)	Date	Chemical Report			OP	PCB	Heavy Metals					
								As	Cd	Cr VI	Cu	Pb	Hg
F1	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	ND	**9**	ND	**15**	**9**	**23**	ND
F2	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	ND	**8**	ND	**13**	**9**	**19**	ND
S1	0.10	07-Mar-17	EnvLab 163174	-	-	-	-	ND	ND	**14**	**19**	**27**	ND
S2	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	ND	**9**	ND	**10**	**19**	**23**	ND
S3	0.10	07-Mar-17	EnvLab 163174	-	-	-	-	**7**	ND	**11**	**15**	**42**	ND
S4	0.10	07-Mar-17	EnvLab 163174	-	-	-	-	**10**	ND	**17**	**8**	**16**	ND
INTRA-LABORATORY DUPLICATES													
F1a	0.10	07-Mar-17	EnvLab 163174	ND	ND	ND	ND	**8**	ND	**12**	**11**	**20**	ND
STATISTICAL ANALYSIS													
Min				NA	NA	NA	NA	7	NA	10	8	16	NA
Max				NA	NA	NA	NA	10	NA	17	19	42	NA
Avg				NA	NA	NA	NA	9	NA	13	13	25	NA

* Depth relates to Depth Below Surface Level - Not Tested :ected Above Laboratory LOR NL = Not Limiting **Bold** = Detected Above Laboratory LOR RED = Exceed

				400	7,400
Sample ID	**Depth (m)**	**Date**	**Chemical Report**	**Ni**	**Zn**
F1	0.10	07-Mar-17	EnvLab 163174	**4**	**27**
F2	0.10	07-Mar-17	EnvLab 163174	**5**	**26**
S1	0.10	07-Mar-17	EnvLab 163174	**7**	**48**
S2	0.10	07-Mar-17	EnvLab 163174	**6**	**68**
S3	0.10	07-Mar-17	EnvLab 163174	**4**	**110**
S4	0.10	07-Mar-17	EnvLab 163174	**8**	**35**
INTRA-LABORATORY DUPLICATES					
F1a	0.10	07-Mar-17	EnvLab 163174	**4**	**24**
STATISTICAL ANALYSIS					
Min				4	26
Max				8	110
Avg				6	52
* Depth relates to Depth Below Surface Level			- Not Tested	ds HIL Criteria	

SURFACE WATER

					NEPM (NEPC, 2013) Groundwater Investigation Levels Fresh Waters (µg/L)	ANZECC 95% and NEPM 2013 - 950 µg/L	–	–	ANZECC 95% and NEPM 2013 (as o-xylene) - 350 µg/L (as p-xylene) - 200 µg/L	ANZECC 95% - 16 µg/L	–	–
Sample ID	Depth (m)	Date	Chemical Report	Desciption	BTEX						TR	
					Benz	Toluen	EthylBenz	Xylene	Naph	F1	F2	
W1	--	7/03/2017	EnvLab 163174	Water	ND	ND	ND	ND	ND	ND	ND	
* Depth relates to Depth Below Surface Level						ND = Not Detected Above Laboratory LOR					**Bold** = **Exce**	

SURFACE WATER

DLA Environmental Services
A Pacific Environment company

										ANZECC 95% & NEPM 2013 - 24 µg/L	ANZECC 95% & NEPM 2013 - 0.2 µg/L
Sample ID	Depth (m)	Date	Chemical Report	RH		PAHs					
				F3	F4	BaP TEQ	Total PAH			As	Cd
W1	--	7/03/2017	EnvLab 163174	ND	ND	ND	ND			1	ND
* Depth relates to Depth Below Surface Level				edance of Site Accepted Criteria							Bold = Exceedance of

SURFACE WATER

DLA Environmental Services
A Pacific Environment company

Sample ID	Depth (m)	Date	Chemical Report	ANZECC 95% & NEPM 2013 - 1.0 µg/L	ANZECC 95% & NEPM 2013 - 1.4 µg/L	ANZECC 95% & NEPM 2013 - 3.4 µg/L	ANZECC 95% - 0.6 µg/L NEPM 2013 - 0.06 µg/L	ANZECC 95% & NEPM 2013 - 11 µg/L
				Heavy Metals (µg/L)				
				Cr VI	Cu	Pb	Hg	Ni
W1	--	7/03/2017	EnvLab 163174	ND	ND	ND	ND	ND
* Depth relates to Depth Below Surface Level				**Site Accepted Criteria**				

SURFACE WATER

Sample ID	Depth (m)	Date	Chemical Report	ANZECC 95% & NEPM 2013 - 8.0 µg/L	Discharge 6.5-8.5 & Irrigation 6.0-9.0	Discharge 40 & Irrigation 50	Discharge 230 & Irrigation 1000
				Zn	pH	TSS	Coliforms
W1	--	7/03/2017	EnvLab 163174	ND	7.0	20	**2400**
* Depth relates to Depth Below Surface Level							

SURFACE WATER

DLA Environmental Services
A Pacific Environment company

Sample ID	Depth (m)	Date	Chemical Report	Discharge 0.25& Irrigation 25-125	Discharge 0.35 & Irrigation 5-25
				Total Phosphorous	Total Nitrogen
W1	--	7/03/2017	EnvLab 163174	0.1	**2.2**
* Depth relates to Depth Below Surface Level					